United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
Cornell University
Agricultural Experiment
Station

Soil Survey of St. Lawrence County, New York

How to Use This Soil Survey

General Soil Map

The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

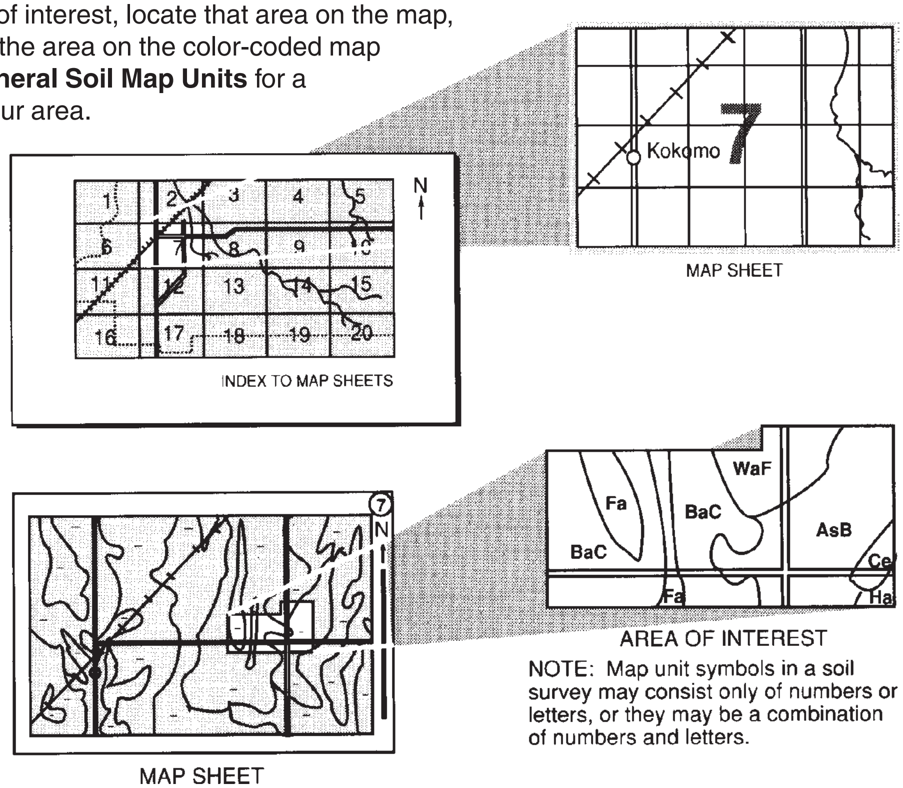
To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map units symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.



The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1989. Soil names and descriptions were approved in 1990. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1989. This survey was made cooperatively by the Natural Resources Conservation Service and the Cornell University Agricultural Experiment Station. The survey is part of the technical assistance furnished to the St. Lawrence County Soil and Water Conservation District. The St. Lawrence County Soil and Water Conservation District provided partial funding and the New York State Department of Agriculture and Markets and the Adirondack Park Agency provided additional funding for the survey.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: The St. Lawrence River, in the background, was the key to early exploration of much of interior North America. In the 1950's the river became the St. Lawrence Seaway, which opened the North American breadbasket to ocean transport. Nearly level and gently sloping Adjidaumo, Muskellunge, and Swanton soils are in the foreground. These soils formed in marine sediments left after the Wisconsin Glaciation, during which the Champlain Sea, an extension of the Gulf of St. Lawrence, covered the area.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Issued 2005

Foreword

This soil survey provides information that affects land use planning in this survey area. It makes predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations that affect various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Soil Survey of St. Lawrence County, New York

By Steven C. Carlisle, Natural Resources Conservation Service

Fieldwork by James H. Brown, Steven C. Carlisle, Kevin A. Connelly, Larry Day, Letember McDowell, Stephen J. Page, Luther H. Robinson, Lydia Schlosser, Kenneth Van Doren, Keith A. Wheeler, and Frank Winkler, Natural Resources Conservation Service; Janis L. Boettinger, Frank Z. Hutton, and Steven Major, Cornell University; and Bill Kick, St. Lawrence County Soil and Water Conservation District

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with Cornell University Agricultural Experiment Station

St. Lawrence County is in the northmost part of New York (fig. 1). It is bounded on the east by Franklin County, on the west by Jefferson and Lewis Counties, and on the south by Lewis, Herkimer, and Hamilton Counties. Bordering Canada along the St. Lawrence River, it comprises 1,805,400 acres, or 2,821 square miles, and has a population of 114,254. It has one city, Ogdensburg, which has a population of 12,375. The village of Canton is the county seat.

The soil maps for this survey area were prepared at two different levels of scale. The smaller scale maps cover the mainly forested region south of the Adirondack Park boundary. The larger scale maps cover the mainly agricultural region north of the Adirondack Park boundary.

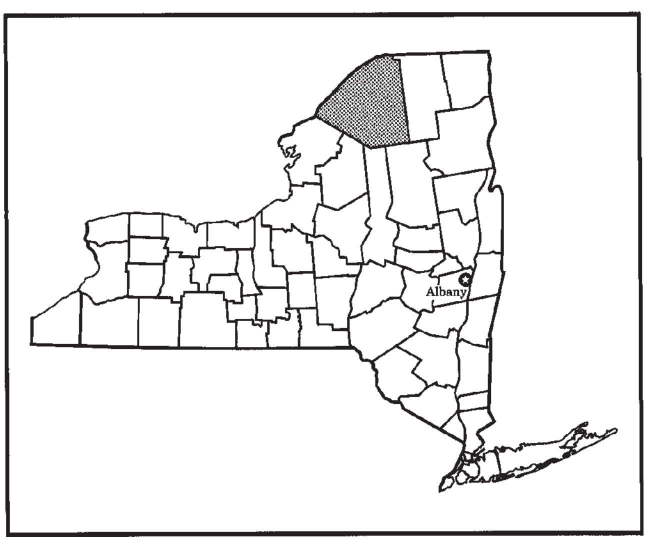

Figure 1.—Location of St. Lawrence County in New York.

This soil survey updates an earlier soil survey of St. Lawrence County (USDA 1925). It extends coverage to the southern part of the county; and, it provides additional information and larger maps that show the soils in greater detail.

General Nature of the County

This section describes some of the natural and cultural factors affecting land use in the county. Those factors include land use and economy, history, physiography and geology, bedrock, glacial geology, drainage and water supply, surficial geology, and climate.

Land Use and Economy

Both the land use and the economic base in St. Lawrence County are divided physiographically between the St. Lawrence Lowlands in the north and the Adirondack Mountains in the south. The northern part of the county takes in three-fifths of the county; the southern part, the rest. The division between the two parts roughly parallels the St. Lawrence River. The northern part has primarily dairy farming but also mining, aluminum smelting, and colleges and universities; the southern part, lumbering and tourism.

The northern part of St. Lawrence County consists mainly of openland and scattered woodlots. The landscape, which generally has little relief, consists of glacial till and glacial marine or lacustrine soils, most of which have a relatively high water table. Roads, hamlets, and villages are reasonably close together and evenly distributed.

Agriculture in the county consists mainly of dairying. According to the 1987 Census of Agriculture, 1,602 farms were operating on 456,497 acres (U.S. Department of Commerce 1987). These numbers contrast with 1982 data showing 1,807 farms on 497,073 acres (U.S. Department of Commerce 1982). Besides milk the farms produce seed or grain corn, beef, or hogs. In 1987 the county had 3 orchards and 15 farms with irrigation on 172 acres.

Talc and zinc mining are important in the southwestern part of the county. Building aggregate is quarried near the village of Norfolk and the city of Ogdensburg. Aluminum smelting is concentrated near hydroelectric power dams on the St. Lawrence Seaway near Massena. Mining was more widespread than now in the county. Bog iron was mined near Brasher Iron Works. Pyrite was mined near Pyrites and Hermon, and feldspar and marble were mined near Richville and Gouverneur. Magnetite was mined at Benson Mines, Jayville, and Clifton Furnace. Hematite was mined near Spragueville, and galena, near Rossie.

Colleges and universities in the northern part of the county are St. Lawrence University and State University of New York (SUNY), College of Technogy, at Canton, both in Canton; and SUNY at Potsdam and Clarkson University, both in Potsdam.

In the southern part the county is mainly forested. In places it has high relief. On crests and backslopes of bedrock-controlled hills and mountains, very deep to shallow soils formed in glacial till are commonly adjacent to very deep, highly permeable soils formed in glaciofluvial deposits on foot slopes and toe slopes. Wet, organic soils are common on benches, along streams, and in old lake basins. Roads, hamlets, and villages are sparse and scattered.

The forest industry in this region centers on logging on large landholdings belonging to paper companies. The commercial species include sugar maple, American beech, yellow birch, white pine, red spruce, balsam fir, black spruce, and tamarack. A paper mill is located in Newton Falls.

Tourism and forest recreation are important in this region. Cottages surround the many lakes. Extensive State wilderness areas attract hikers and campers. Opportunities abound for hunting and fishing and for cross-country skiing or snowmobiling on trails.

History

By Garrett Cook, St. Lawrence County historian

The first settlers of St. Lawrence County likely were Paleoindians at the end of the Pleistocene. Their sites are linked to the Champlain Sea beaches around Lake Champlain. Paleoindians were seminomadic, big game hunters adapted to the late Pleistocene environment. Their distinctive Clovis points around Black Lake in western St. Lawrence County indicate that they prevailed at the end of the Champlain Sea interval and that plants and animals had recolonized the emergent lowlands.

Little is known about the period from 8000-3000 B.C., but from 3000 B.C. to A.D. 1600, some well defined cultures succeeded one another. These included the Laurentian culture, which produced large, ground slate knives; the Meadowood culture and its elaborate burial ceremonials; the Point Peninsula culture, first to make pottery of varied design motifs; and the St. Lawrence Iroquois, likely the first farmers in the area.

The Iroquois lived in villages with long houses and palisades. Three of their known village sites in St. Lawrence County, which are near Massena, near Norwood, and in the town of Macomb, date from around A.D. 1500. By the 1600’s, the area was a no man's land, perhaps used occasionally for hunting and fishing, but too dangerous for village life because of ongoing wars between Iroquois to the south and Huron and Algonquin to the north. A Mohawk community, whose ancestors Jesuits converted to Catholicism in the 1600’s, was established in the late 1700’s at St. Regis, just east of the St. Lawrence County line between the mouths of the Raquette and St. Regis Rivers. The St. Regis Reservation, also known as Akwesasne, is the oldest continuously occupied settlement in the region. At about the same time, within what is now St. Lawrence County, the French established a mission and built a fort, *la Presentation,* on the St. Lawrence at the mouth of the Oswegatchie River. In 1760, British troops captured *la Presentation* and renamed it Fort Oswegatchie. They occupied the fort until 1796, relinquishing it to the Americans under the terms of Jay's Treaty. When St. Lawrence County was established in 1802, Ogdensburg, the site of Fort Oswegatchie, was the county seat. The seat was moved to the village of Canton, a more central location, in 1830.

American farmers deferred settling St. Lawrence County until the 19th century out of fear of the British at Fort Oswegatchie and in Canada. While a few pioneer families, mostly New Englanders, took up land just after 1800, settlers did not come in numbers until the end of the War of 1812, in 1815. Waves of Vermonters entered the area between 1815 and the 1840’s, as did a few immigrants from the Mohawk Valley in the westernmost part of the county. The Irish and the French Canadians immigrated during the late 19th century. The Irish settled mainly south and east of Massena, and the French Canadians, along the Franklin County border and in the logging communities of the Adirondack foothills.

Between the Civil War and the early 20th century, wealth in the county derived from mining, small but efficient farms, abundant water power for local industry, a great expanse of forestland, and colleges. Lead, iron, tremolite, zinc, feldspar, talc, and marble were mined in the towns of Rossie, Fowler, Gouverneur, and Edwards. Iron, feldspar, and marble were mined in the towns of Dekalb and Hermon. Iron was mined in the towns of Clifton and Fine. Sandstone was mined in the town of Potsdam.

Dairying was important by the late 19th century. Milk was processed in local cheese factories in the southwestern part of the county and in creameries and butter factories in the north-central part.

Grist mills, and later pulp, paper, and ore processing mills, were constructed using the county's abundant hydroelectric energy. A power canal in Massena at the end of the 19th century led to Alcoa’s becoming the first major industry in the county (fig. 2). Hydroelectric power was developed on the Raquette River between 1918 and the 1950’s. In the late 1950’s the Power Authority developed the St. Lawrence River into the St. Lawrence Seaway for hydroelectric power.

From 1820 to about 1920, all but a few remote Adirondack areas were logged over. The timber was moved on log drives to saw mills. The size and quality of timber declined, and logging changed from sawlogs to pulp. River drives lasted until the 1920’s; then, trucks were used to transport logs.

As the region developed in the 19th and 20th centuries, some colleges and universities and a ranger school were established in St. Lawrence County. SUNY at Potsdam was founded 1916 as St. Lawrence Academy; Clarkson University dates back to 1896. In Canton, St. Lawrence University was founded in 1856 and SUNY, College of Technology, at Canton, in 1906. In Ogdensburg, Wadhams Hall Seminary College was founded in 1924, and Mater Dei College, now closed, in 1960. The New York State Ranger School was founded near Wanakena in 1912.

Figure 2.—Hydroelectric power dam in Massena, New York. The dam, built in 1897, supplied electricity needed for the aluminum industry in St. Lawrence County. The areas alongside the dam were mapped as DAM, Large dams.

Today, marble, zinc, and tremolite mining is still important in the town of Fowler. Zinc is mined in the town of Pierrepont, and quarries are active near Ogdensburg and Norwood. Ruins, open pits, and disturbed ground cover much of the county. Agriculture is still the county's leading industry, and fluid milk is the chief product. Farms are fewer in number but are larger and more intensively managed. Consequently, large tracts of outlying, marginal, abandoned land has been reverting to forest. This has been the trend in areas scattered throughout the northern part of the county. Abundant cellar holes and stone fences in the midst of woodlots are remnants of a more universal practice of agriculture.

Hydroelectric plants on the St. Lawrence, Grasse, Raquette, Oswegatchie, and St. Regis Rivers are flourishing, exporting energy and supporting dependant industry, such as aluminum mills near Massena and paper mills at Newton Falls and Natural Dam. Grist, pulp, and paper mills, small hydroelectric plants, and saw mills— all in ruins— line major waterways. Lumbering remains an important industry, especially in the southern part of the county, although most logs are shipped elsewhere for processing. Today, colleges and universities have brought cosmopolitanism, culture, and affluence to the villages of Canton and Potsdam and the city of Ogdensburg. The Ranger School, part of the State University of New York, College of Environmental Science and Forestry, is in Wanakena.

Physiography and Geology

by Dr. James S. Street, St. Lawrence University

St. Lawrence County, the largest county in the State of New York, has a surface area of about 2,821 square miles. The county is named for and is bounded on the north by the St. Lawrence River.

St. Lawrence County comprises parts of two physiographic provinces. The northern three-fifths of the county lies in the St. Lawrence Lowlands, and the southern two-fifths, in the Adirondack Mountains (MacClintock 1958). According to the Physical Divisions of the United States, these names correspond to the St. Lawrence Valley and the Adirondack Province, respectively (U. S. Government Printing Office 2000). Four major river systems drain the county from the higher elevations in the south to the St. Lawrence River. They are, from west to east, those of the Oswegatchie, Grasse, Raquette, and St. Regis Rivers.

The terrain ranges in elevation from about 220 feet above mean sea level in the northeast corner of the St. Lawrence Lowlands to 2,700 feet on Mount Matumbla in the southeast corner of the Adirondack Mountains.

Bedrock

The St. Lawrence Lowlands exhibit low relief developed on Cambro-Ordovician sandstone and limestone terrains, which separate the St. Lawrence River from the metamorphic terrain of the Adirondack Mountains. Sandstone bedrock was deposited in a shallow Cambrian sea that derived its sediment, in part, from the ancient and relatively low dome of the Adirondacks. The environment of deposition was not particularly conducive to the preservation of fossils, which are scarce in the rocks.

Moving eastward along the St. Lawrence Lowlands, rocks grade from quartzose dolostone to a younger sequence of dolostone and limestone of Ordovician age (Van Diver 1985). Generally sparsely fossiliferous, although occasionally abundantly so in the East, these rocks provided a quiet environment of deposition, receiving small amounts of sediment from the surrounding area. Both the aforementioned rock sequences dip gently northward from metamorphic bedrock units of the Adirondack dome. This gentle northward slope of sedimentary rocks creates the almost level plain and the low relief of the St. Lawrence Lowlands.

To the south, the Adirondack Mountains are underlain by complex metamorphic rocks formed during the Precambrian eon more than 1,100 million years ago (American Geological Institute 1960). Composed mainly of metasedimentary and metavolcanic rocks (gneiss, marble, and quartzite), the ancient rocks of the Adirondack Mountains are part of the Canadian Shield physiographic region; the connection is the Frontenac Axis, a low arch that forms the Thousand Islands at the northwestern edge of St. Lawrence County. The metamorphic "basement" rocks of the Adirondack Mountains have been severely folded, faulted, and sheared before and during several episodes of uplift associated with the gradual rise of the Adirondack Mountains.

Glacial Geology

St. Lawrence County has been glaciated repeatedly during the last 1 to 2 million years. All that remains, however, is evidence of the Wisconsin Glaciation, which ended only 10,000 to 12,000 years ago. Reaching a thickness of more than 2 miles, Wisconsin ice during its maximum extent covered the entire county. Scouring and abrading the terrain and then depositing various thicknesses of till directly from the ice and stratified materials from the associated meltwater, the glacier significantly modified the surface expression of the county. Because of the regional slope of the terrain toward the St. Lawrence River, meltwater was unable to drain freely from the area as long as ice lay in the St. Lawrence Lowlands. A large proglacial lake, Lake Iroquois, inundated the valley and drained through the Mohawk-Hudson Valleys to the Atlantic Ocean. As the ice retreated into Canada, a northern outlet at a lower elevation was opened several miles to the east of St. Lawrence County. Because of the new outlet, the early phase of this water body has been called Lake Frontenac (American Geological Institute 1960). A succession of lakes was formed having progressively lower outlets as the ice margin further retreated to the north. Deposits of freshwater lake sediments blanket many of the lower areas in the northern part of the county.

The tremendous weight of the ice mass had depressed the bedrock beneath it such that as the ice melted, the level began to rise and marine water from the Atlantic Ocean moved up the depressed St. Lawrence Lowlands. Present-day investigations of fossil clam shells and ostracods (microfossils) suggest the saltwater arm to the ocean reached its maximum extent across the northern part of St. Lawrence County, at least as far west as the vicinity of Ogdensburg (Bierstedt 1989). Freshwater from the Great Lakes Basin and salt water from the Champlain Sea, confluent along the St. Lawrence River from Ogdensburg probably into Lake Ontario, supported brackish water ostracods (*Candora subtriangulata*). Through mountain building, freshwater lakes and the Champlain Sea drained into the Atlantic, and the St. Lawrence River became the only drainage system in the region.

Evidence for the glacial events described above remain in the form of compact lodgement till, loose ablation till, stratified drift, and meltwater channels (Kern 1987). Moreover, deltaic deposits and beach features marking shorelines of the lakes and the Champlain Sea and the bottom sediments of these bodies of water contain both freshwater and saltwater fossils. These materials comprise the parent materials for the diverse soils developed in St. Lawrence County.

Drainage and Water Supply

Drainage

St. Lawrence County is drained by four major rivers, two minor rivers, and numerous creeks. From west to east, the major rivers are the Oswegatchie, the Grasse, the Raquette, and the St. Regis. However, not all drainage is to the St. Lawrence River, which is the northern border of the county.

The major rivers begin deep in the Adirondack Mountains. Of the four, only the Grasse River begins wholly in St. Lawrence County. Rapids and waterfalls are commonplace as these rivers pass through the mountains on generally steep gradients toward the St. Lawrence River. In many places, particularly along the Raquette River, this water energy is harnessed for hydroelectric power.

Lakes that accompany power dams provide recreational opportunities (fig. 3). As the rivers pass to the low relief of the St. Lawrence Lowlands, gradients become lower, yielding less energy and commensurately fewer sites for hydroelectric plants. Tributary streams are relatively poorly integrated on this low relief; abundant wet spots and swamps are on the landscape. Of the major rivers, a flood plain is best expressed on the Oswegatchie, but flood plains are evident on the Grasse, Raquette, and St. Regis. Rock structures affect the meanders of the Oswegatchie River in the southwestern part of the county. Flood plains on the Oswegatchie River are commonly broad and have oxbow lakes in places. The Grasse, Raquette, and St. Regis Rivers have fairly dendritic patterns and narrow, discontinuous flood plains. Tributary streams throughout the valley in the county pass through narrow flood plains for much of their lengths.

The Oswegatchie River enters the St. Lawrence River at Ogdensburg. The Grasse, Raquette, and St. Regis Rivers enter the St. Lawrence in close order, east of Massena.

When dams and locks were built in the mid-1950's as part of the St. Lawrence Seaway project, the level of the St. Lawrence River was controlled above the mouth of the Grasse River. At the mouth of the Massena intake, the elevation of the river rose over 40 feet, widening the river into Lake St. Lawrence.

Water Supply

The water supply in St. Lawrence County for rural residents, municipalities, and industries comes from either springs, wells, or rivers.

Rural residents generally get their potable water from deep wells; however, some residents still get their drinking water from springs or shallow wells. Most deep wells are drilled into bedrock, although some take advantage of localized sand and gravel aquifers. Sulfur water is a problem in some wells in the northern part of the county, particularly where

Figure 3.—Norwood Lake and the village of Norwood. A hydroelectric power dam built on the Raquette River impounded the lake. In the foreground is Hogansburg fine sandy loam, 0 to 3 percent slopes.

sandstone, dolostone, or limestone bedrock is predominant.

Municipal water supplies of villages, hamlets, and industrial sites commonly are derived from either wells or nearby rivers.

Surficial Geology

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This section outlines the surficial geology in the county. Through intensive field study, ten distinct areas, or units, have been defined and described. These units do not refer to any of the maps included in this report. These units were correlated based on recorded observations of actual field conditions.

1. Glacial Till

Glacial till makes up about 23 percent of the survey area. It is especially prominent in the northeast quarter of the county. The till is poorly sorted, randomly heterogeneous material that consists of sand, silt, clay, gravel, stones, and boulders deposited during the Wisconsin Glaciation. Composition of till reflects changes in bedrock over which glaciers moved from north to south. Carbonate rocks in the till, including limestone, dolostone, and dolomitic sandstone, decline in relative abundance from north to south across the county. Till with carbonate rocks gives way to till with abundant sandstone, which gives way to till with increasing content of crystalline feldspathic rocks (Clark 1983, Clark 1984).

In places, the glacial till has topographic expression as elongate, discontinuous, low-lying till ridges (MacClintock 1965). These ridges occur in an area roughly the shape of a triangle connecting Ogdensburg, Potsdam, and Massena. They are generally elongate in a northeast-southwest direction, are 1 to 2 miles long, 400 to 700 yards long, and 30 to 100 feet high. The tops and sides of some ridges have been molded into small drumlins oriented north-south; they occur as islands in the St. Lawrence River near Waddington and Massena. Along New York Route 37, east of Massena, the ridges, called ribbed moraines, confine the relatively straight, easterly channels of the Grasse and Raquette Rivers. They likely formed by thrust faulting near the base of the till-laden front of the glacier moving southward toward the Adirondack Mountains (Carl 1978). They have been submerged and eroded by waves in the aftermath of continental glaciation, first under a vast, freshwater, ice-dammed lake, and later under the Champlain Sea. Thus, underlying some areas between the glacial hills are soils formed in fine textured, well sorted lacustrine and marine sediments.

In the northern part of the county, where the glacial till has a large component of carbonate material, Grenville and Hogansburg soils dominate higher portions of till landscapes. In the central part of the county, where the glacial till has intermediate carbonate levels, Pyrities and Kalurah soils are dominant in higher topographic positions. In both the northern and central parts of the county, Malone and Runeberg soils are common in lower topographic positions on till landscapes. In the southern part of the county, where the glacial till has a low component of carbonate material, Potsdam and Crary soils commonly are in the higher areas of glacial till topography and Adirondack, Lyme, and Tughill soils are dominant in the lower areas.

Included in this unit are areas of glaciofluvial sediments, lacustrine sediments, and marine sediments. The glaciofluvial sediments are generally well sorted and occur as long, sinuous ridges, or eskers, or as hummocky hills, or kames, deposited on or against the sides of bedrock hills.

2. Glacial Till Underlain by Precambrian Crystalline Bedrock

This unit makes up about 33 percent of the survey area and is extensive in the southern part of the county. The glacial till is poorly sorted, heterogeneous materials deposited directly during the Wisconsin Glaciation. Like Glacial Till (in unit 1, above), it consists of random quantities of sand, silt, clay, gravel, stones, and boulders. Much of the till consists of ancient, crystalline rock fragments. Carbonate rock declines in abundance from north to south across the extent of the unit. Landscapes consist of alternating areas of shallow and moderately deep glacial till and areas of exposed bedrock.

Topography in this unit consists of low mountains and networks of hills and intervening valleys. In some places of slight relief, topography is knobby or consists of a complex of low ridges and narrow, clay-filled valleys.

In the northern part of the county, Insula and Quetico soils dominate the landscape of bedrock-controlled glacial till. In the southern part of the county, Tunbridge and Lyman soils are dominant.

Included in this unit are areas of glaciofluvial, lacustrine, and marine sediments and peat. Glaciofluvial sediments are well sorted and generally occur as sinuous ridges, or eskers, or on valley sides as kames. Well-sorted, fine-textured lacustrine and marine sediments are on valley floors. Peat is in depressions on valley floors or is on benches on hillsides.

3. Glacial Till Underlain by Cambro-Ordovician Strata

This unit makes up about 2 percent of the survey area. It occurs in the northwestern part of the county between Black Lake and the St. Lawrence River. The till is poorly sorted, heterogeneous material that consists of sand, silt, clay, cobbles, and boulders. The generally flat landscapes are underlain by nearly horizontal Cambrian and Ordovician sandstone and sandy dolomite of the Potsdam and Theresa formations.

Relief is slight on a topography of flat-topped, mesalike uplands, whose long axes are aligned northeast-southwest. Uplands, which are underlain by horizontal strata, end in short scarps.

Insula, Summerville, Nehasne, and Quetico soils are dominant on the higher parts of these bedrock-controlled landscapes. Ogdensburg and Hannawa soils are dominant on the lower parts.

Included in this unit are areas of marine sediments and peat. Well-sorted, fine-textured marine sediments are on similar, but generally lower, landscapes. Areas of peat are in depressions, commonly along streams.

4. Marine Deposits Underlain by Cambro-Ordovician Strata

This unit consists of areas of marine sediments underlain by horizontal sandstone and sandy dolomite of the Potsdam and Theresa formations. It makes up about 2 percent of the survey area. It is restricted to the area north of Black Lake in the northwest part of the county. The marine sediments consist of well-sorted silts and clays deposited after glaciation in the Champlain Sea.

Topography consists of vast, planar surfaces separated by low hills and short, bedrock scarps of slight relief. Muskellunge, Matoon, and Adjidaumo soils are dominant on these marine landscapes.

Included in this unit are areas of glacial till and peat. Heterogeneous, poorly sorted glacial till is on landscapes similar to those formed on marine sediments. However, it commonly is on low, mesalike landforms bounded by short scarps, generally at higher elevations.

Peat is in depressions, generally along streams.

5. Glacial Till Underlain by Precambrian Marble and Gneiss

This unit takes in about 3 percent of the survey area. It is mainly in the western part of the county. Areas of thin glacial till are underlain by some gneiss and various minor rock types, but chiefly coarsely crystalline, Precambrian marble. The glacial till consists of poorly sorted, heterogeneous materials deposited directly during the Wisconsin Glaciation. The till consists of random quantities of sand, silt, clay, gravel, stones, and boulders. It has abundant carbonate rock fragments, which buffer acid rain. Landscapes consist of areas of shallow and moderately deep glacial till alternating with areas of exposed bedrock.

Topography of this unit is rough and broken and is controlled in part by irregular outcrops of highly folded marble formations. In most areas the landscape consists of networks of small ridges. The ridges consist of a thin mantle of loamy glacial till overlying marble bedrock and have numerous scarps and rock outcrops.

Dominant in this unit are Summerville, Insula, and Quetico soils.

Included in this unit are areas of glaciofluvial, lacustrine, and marine sediments and peat. Well-sorted glaciofluvial sediments generally occur as kames or as kame terraces on sides of hills. Well-sorted, fine-textured lacustrine and marine sediments are on valley floors. Peat is in depressions, also on valley floors.

6. Marine Deposits

This unit consists of well-sorted, marine silt and clay sediments. It makes up about 10 percent of the survey area. It occurs northwest of the marine line that marks the southern margin of the ancient Champlain Sea in the St. Lawrence Lowlands. The Champlain Sea was an arm of the Atlantic Ocean that flooded the ice-depressed St. Lawrence and Champlain Valleys between about 11,800 and 10,000 years ago following the retreat of continental ice.

The sediments contain marine shells, particularly those of the white, fingernail-sized, bottom-dwelling clams *Hiatella arctica* and *Macoma balthica*. Today, these species live in shallow, subarctic waters. Whale and seal fossils have been recovered in the St. Lawrence Lowlands. White (Beluga) whale bones and teeth, which were recovered from clay deposits near Norfolk, were carbon-dated as 10,450 years old; they are on display in the New York State Museum.

The gentle topography consists of low hills alternating with broad, level areas. Streams are moderately incised into marine sediments, and landslides and slumps have scarred steep streambanks.

Included in this unit are areas of heterogeneous, poorly sorted till that makes up hills with long northeast-southwest axes. Some small areas of peat are in depressions and along streams. Muskellunge, Huevelton, and Adjidaumo soils and to a lesser extent Flackville, Stockholm, Elmwood, and Swanton soils are on these landscapes.

7. Lacustrine Deposits

This unit, which consists of silt and clay lacustrine deposits, makes up about 3 percent of the survey area. After glaciation, a vast, freshwater lake covered the St. Lawrence Lowlands, but ice retreating northward damned the lake's outlet to the St. Lawrence River (Clark 1984). Most of the lake's water likely originated from melting ice and from streams draining the Adirondack Mountains. This lake was deeper than the later Champlain Sea, and its shoreline extended farther south. Consequently, these deposits do not have the marine fossils characteristic of Marine Deposits.

Topography of this unit consists of planar basins separated by hills of glacial till. The slight or moderate relief depends on glacial till. Rivers and streams in this unit are not as deeply incised as those in similar marine deposits near Massena, in the northeastern part of the county.

Nicholville and Salmon soils are dominant on the higher parts of these landscapes. Hailesboro, Wegatchie, and Roundabout soils are dominant on the lower parts.

Included in this unit are areas of glacial till, sandy terraces and deltas, sandy and gravelly kames, and peat. The heterogeneous, poorly sorted till is on hills and ridges that have numerous rock outcrops. Terraces consist of well-sorted sands that in some areas bracket streams. Kames, where sand and gravel have been sorted and stratified, are on some hills or hillsides in the central part of the valleys. Peat is in depressions, in some areas near streams.

8. Beach Deposits: Sands, and Sands and Gravels

This unit is in the St. Lawrence Lowlands, mainly in the northern part. It makes up about 8 percent of the survey area. It consists of well-sorted sands and mixed sand and gravel deposited as beach material in the Champlain Sea. Much sand was deposited simultaneously with, or slightly later than, marine clay in unit 6. Sand was derived from streams that drained northward from the Adirondack Mountains, as they do now. Cobbles and boulders may have eroded from nearby hills of glacial till. These hills, at some stage of a declining sea level, protruded as islands from the Champlain Sea. Waves pounding the shoreline may have winnowed away finer sands, depositing the larger rocks along the beach. In some areas, wind reworked beaches into small, crescentic sand dunes that forest cover anchored from further movement. These sandy areas were deposited as marine beaches, and wind frequently redistributed sand. Near Massena, most sandy beach deposits are underlain at some depth by marine clays.

Topography of this unit consists mainly of great stretches of level land broken by low hills and ridges of slight relief.

In the northern part of the county on the higher parts of the landscape, Adams and Croghan soils are dominant where sediments are sandy and Trout River and Fahey soils are dominant where sediments are gravelly. Coveytown, Cook, Deford, Naumburg, and Searsport soils are dominant in most lower parts of the landscape.

Included in this unit are areas of glacial till, marine clay, and peat. Heterogeneous, poorly sorted glacial till is on hills and ridges. Marine clay and silt are in places in basins, exposed by streams that incised beach sands. Peat is in low areas, commonly near streams.

9. Deltas and Glaciofluvial Deposits, Sands, and Sands and Gravels

This unit takes in about 9 percent of the survey area. It consists of sand and mixed sand and gravel deposited as deltas or as glaciofluvial features in the central and southern parts of the county. Deltaic sediments consist of well-sorted sands and as stratified sands and gravel deposited as deltas when rivers discharged into glacial lakes. Wind has been eroding and redistributing some sand. Glaciofluvial sediments are moderately well-sorted, stratified sands and gravels. They are within sinuous, steep-sided eskers; on networks of knolls and kettles; or on terraces that skirt hills and mountains.

Topography of this unit ranges from broad and planar to hilly or ridgelike. Relief is slight or moderate.

Adams and Croghan soils are dominant in higher areas with sandier sediments. Naumburg and Searsport soils are dominant in lower areas with sandy sediments. Colton and Duxbury soils are dominant in areas with gravelly sediments.

Included in this unit are areas of glacial till, lacustrine clay and silt, and peat. Heterogeneous, poorly sorted glacial till is on hills and ridges. Lacustrine clay and silt are on valley floors and in basins; they are also below beach sands where incised streams expose them. Peat is in low areas, commonly near streams.

10. Peat Deposits

This unit makes up about 7 percent of the survey area. Peat consists of decomposing woody plants and sphagnum peat moss. It developed as organic matter that accumulated because of a high water table in old, glaciated lake basins or along streams (Johnson 1985). It is commonly in large, continuous, concave areas in some stream valleys and also in networks of closely spaced or interconnected basins.

Topography of this unit is generally flat, broken only by low hills of included glacial till sediments, glaciofluvial sediments, or other materials.

In the northern part of the county, Carbondale and Dorval soils are most common on these landscapes. In the southern part, Loxley and Dawson soils are most common.

Included in this unit are areas of glacial till, lacustrine deposits, beach sand, glaciofluvial sand and gravel, and marine sediments. Heterogeneous, poorly sorted till is on hills and ridges that have numerous rock outcrops and surface stones. Marine and lacustrine silt and clay are in similar, but generally slightly higher topographic settings than those of peat. Beach sand and glaciofluvial sand and gravel are on intervening hummocks, hills, and ridges in a vast network of peat bogs. Marine sediments are in the St. Lawrence Lowlands.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Canton, New York, in the period 1951-86. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 18 degrees F, and the average daily minimum temperature is 8 degrees. The lowest temperature on record, which occurred at Canton, on January 9, 1968, is -40 degrees. In summer, the average temperature is 66 degrees, and the average daily maximum temperature is 77 degrees. The highest recorded temperature, which occurred at Canton on August 2, 1975, is 97 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 35.56 inches. Of this, 20 inches, or 57 percent, usually falls in April to September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April to September is less than 18 inches. The heaviest 1-day rainfall during the period of record was

3.82 inches on August 10, 1959. Thunderstorms occur on about 28 days each year, and most occur in summer.

The average seasonal snowfall is about 81 inches. The greatest snow depth at any one time during the period of record was 58 inches. On the average, 70 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 60 percent of the time possible in summer and 30 percent in winter. The prevailing wind is from the west-northwest. Average windspeed is highest, 11 miles per hour, in spring.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil (fig. 4). The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested to observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties, but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the

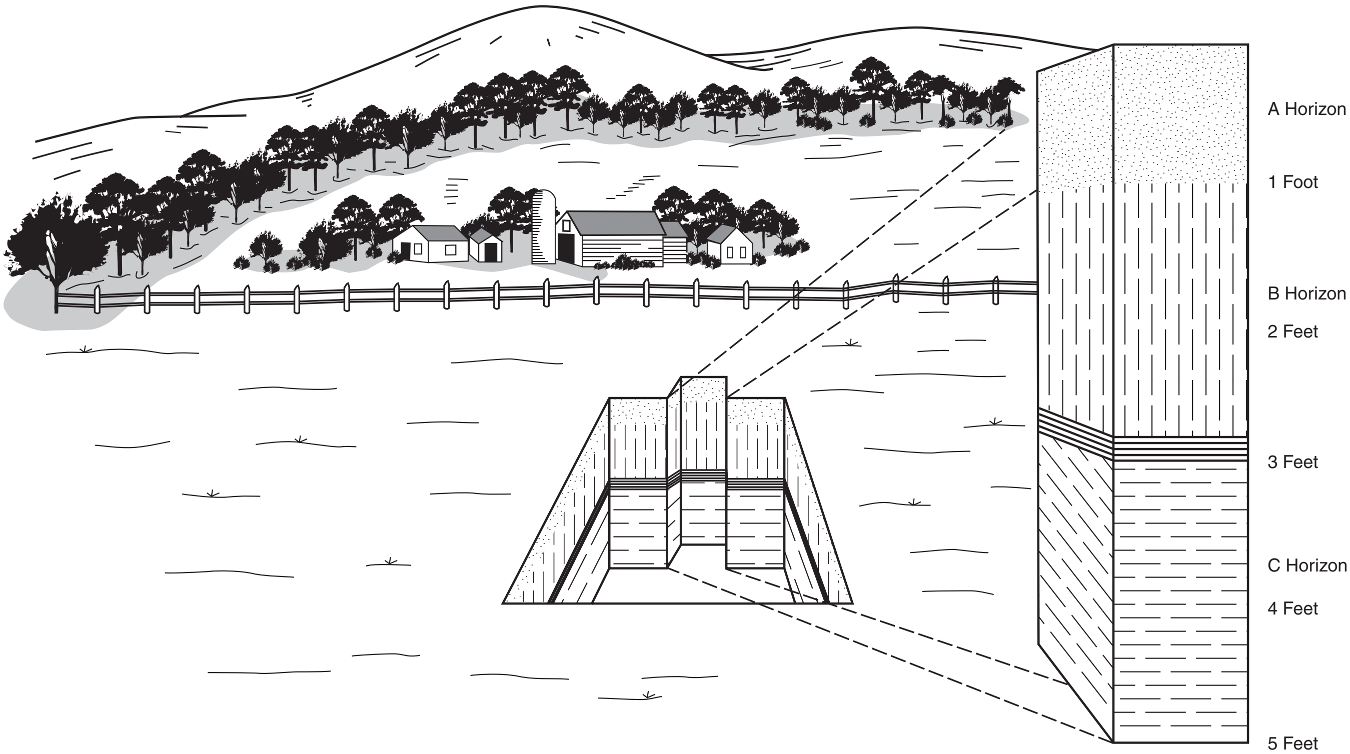

Figure 4.—Diagram of a typical landscape setting for Muskellunge silty clay loam, 0 to 2 percent slopes, on a lake plain. The exaggerated schematic of soil layers represents the soil profile.

significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. These latter soils are called inclusions or included soils.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all the kinds of soil on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils, but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

In some areas along the border of St. Lawrence County, the names of the general soil map units do not match those of the adjoining counties. These discrepancies exist because of differences in the detail of mapping, changes in soil classification, and differences in the proportion of the same soil in adjacent counties. In these areas, the units in adjoining counties contain similar kinds of soils.

Soil Descriptions

Dominantly very deep, nearly level to moderately steep, well drained to poorly drained soils; formed in glacial till, marine deposits, and lacustrine deposits

The four general soil map units in this group make up about 24 percent of the county. The soils in these units are very deep. They formed in glacial till and marine deposits on parts of the Adirondack Mountains, on foothills, and on parts of marine plains.

1. Hogansburg-Muskellunge-Grenville

Very deep, well drained to somewhat poorly drained, loamy soils formed in glacial till and in marine deposits; on hills and ridges and in intervening basins or on broad footslopes

This map unit has moderate relief (fig. 5). It comprises low hills and ridges separated by concave, flatter areas. The hills and ridges are commonly oriented northeast-southwest and consist of glacial till. The intervening, low-lying basins consist mainly of marine sediment overlying glacial till, and are dissected by streams and rivers. In many places the major streams and rivers have cut through the mantle of marine sediments and the till to dolostone or limestone bedrock.

Slopes of the overall landscape range from 3 to 15 percent. The vegetatative cover is northern hardwoods.

This map unit makes up about 12 percent of the survey area. It is about 29 percent Hogansburg soils, 11 percent Muskellunge soils, 11 percent Grenville soils, and 49 percent soils of minor extent.

Hogansburg soils are on broad ridgetops and gentle side slopes. They are gently sloping, very deep, and moderately well drained. They have a loamy subsoil and substratum and are mottled. They formed in glacial till.

Muskellunge soils are in slightly concave basins or on gentle terraces skirting higher topographic features. They are gently sloping, very deep, and somewhat poorly drained. They have a mottled, clayey subsoil and substratum. They formed in marine deposits.

Grenville soils are on ridgetops. They are strongly sloping, very deep, and well drained. They have a loamy subsoil and substratum. They formed in glacial till.

Of minor extent in this map unit are Swanton, Malone, Adjidaumo, Waddington, Croghan, Runeberg, and Mino soils. Swanton and Mino soils are on toe slopes commonly adjacent to streams. Swanton soils are somewhat poorly drained and poorly drained. Mino soils are somewhat poorly drained. Adjidaumo and Runeberg soils are somewhat poorly drained and are

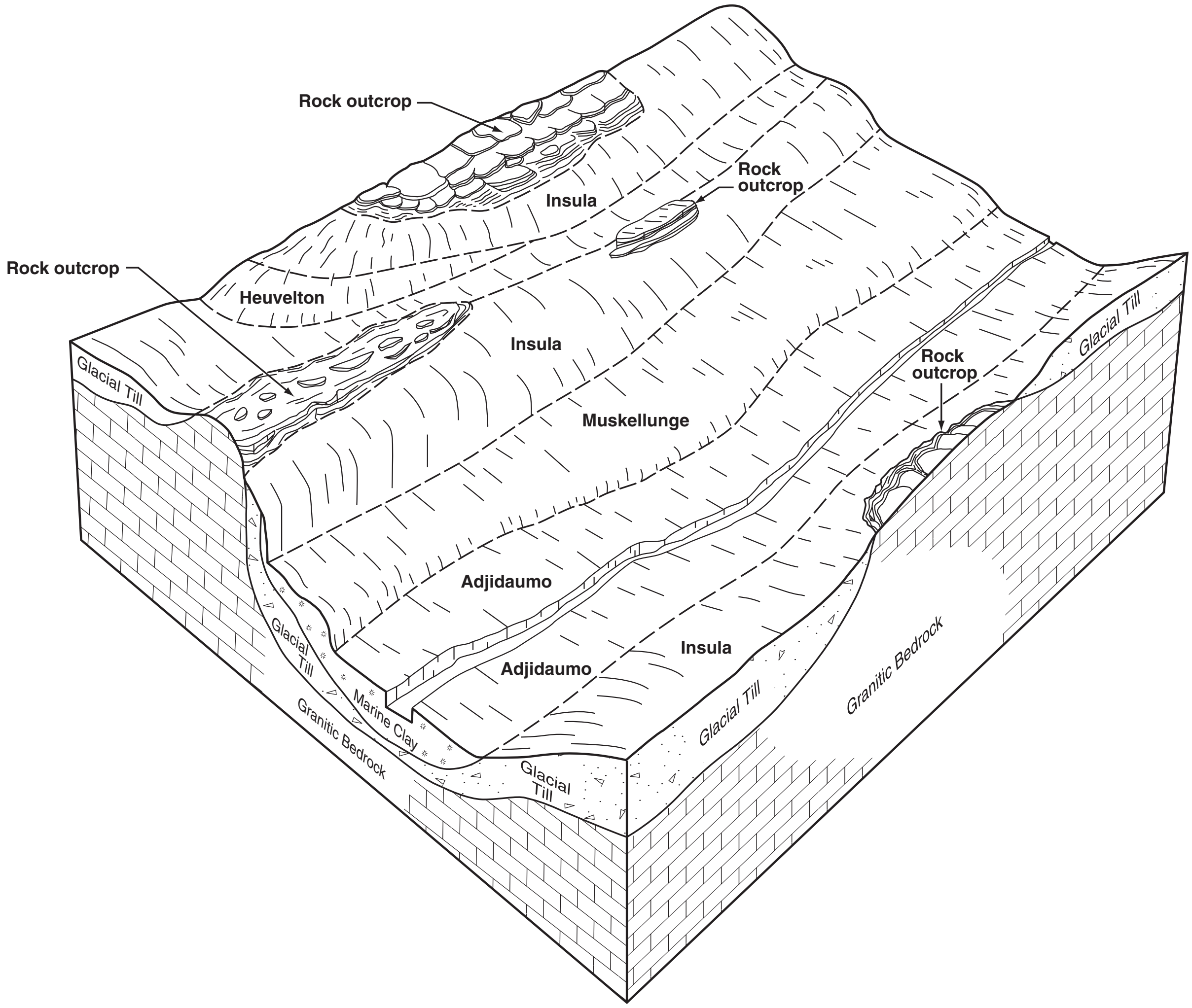

Figure 5.—Typical landscape of soils and underlying material of the Hogansburg-Muskellunge-Grenville association.

in depressions where water tends to pond. Malone soils are somewhat poorly drained and are on lower backslopes and on footslopes. Waddington soils are somewhat excessively drained and are on crests of narrow ridges. Croghan soils are moderately well drained and are on deltaic ridges.

About 80 percent of the acreage of this unit has been cleared. Most cleared areas are used for corn silage or hay. Stony areas on the hills and ridges are mostly used as pasture or forest land or as sites for structures mostly located on the tops of gentle hills and ridges.

Most areas of this unit are suitable for farming. In places surface stones limit tillage. On Muskellunge and included soils the seasonal high water table limits agricultural production. Erosion is a hazard on the longer, steeper slopes. On pasture, overgrazing and grazing when the soils are wet destroy soil tilth, reduce productivity, and are the main management concerns.

This unit is suited to trees. Sugar maple, eastern hemlock, red maple, and American beech grow in convex areas. Red maple, gray birch, trembling aspen, and white oak are dominant in the flatter, more concave areas. Productivity of trees on this unit is moderate or high. In spring and fall seasonal wetness causes severe rutting of skid trails and access roads and limits timber harvesting.

The seasonal high water table on Hogansburg and Muskellunge soils is the main limitation to use of this unit as a site for community development.

2. Kalurah-Pyrities-Malone

Very deep, well drained to somewhat poorly drained, loamy soils formed in glacial till on tops and side slopes of hills and knolls

This map unit has moderate relief. It comprises broad, low hills and ridges separated to a minor extent by concave, flatter areas. The hills and ridges are commonly oriented northeast-southeast and consist of glacial till. Numerous short drainageways notched into hillsides along the Oswegatchie River flow into creeks and rivers flowing into the St. Lawrence River. These rivers and major creeks and in places narrow flood plains have, in many areas, cut down to bedrock. Most slopes of the overall landscape are 3 to 8 percent, but the range is 3 to 15 percent. The vegetative cover is northern hardwoods.

This map unit makes up about 4 percent of the survey area. It is about 25 percent Kalurah soils, 22 percent Pyrities soils, 22 percent Malone soils, and 31 percent soils of minor extent.

Kalurah soils are on broad ridgetops and on gentle side slopes. They are gently sloping, very deep, and moderately well drained. They have a loamy subsoil and substratum and are mottled in the lower part of the subsoil and in the substratum.

Pyrities soils are on ridgetops, hilltops, and the steeper side slopes. They are strongly sloping, very deep, and well drained. They have a loamy subsoil and substratum.

Malone soils are on the lower side slopes and footslopes. They are nearly level and gently sloping, very deep, and somewhat poorly drained. They have a mottled, loamy subsoil and substratum.

Of minor extent in this map unit are Adjidaumo, Swanton, and Elmwood soils. Adjidaumo soils are in depressions where water is occasionally ponded and are poorly drained and very poorly drained. Swanton soils, on toe slopes and commonly adjacent to streams, are somewhat poorly drained and poorly drained. Elmwood soils, on convex, beveled footslopes, are moderately well drained.

About 75 percent of the acreage of this map unit has been cleared, mostly for corn silage or hay. Stony areas on hills and ridges are mostly used as pasture or forest land or have reverted to forest succession. Farm structures are mostly located on tops of gentle hills and ridges.

Most areas of this map unit are suitable for farming. In places surface stones can be a problem for tillage. On Malone and included soils the seasonal high water table limits agricultural production. Erosion is a hazard on some of the longer, steeper slopes.

On pasture, overgrazing and grazing when the soils are wet, which damage soil tilth and reduce productivity, are management concerns.

This unit is suited to trees. Sugar maple, eastern hemlock, red maple, northern white cedar, and American beech are common species. Productivity of trees is moderate or high. In spring and fall seasonal wetness limits timber harvesting, particularly on Malone soils. It can cause severe rutting of skid trails and access roads, an excessive windthrow hazard, and seedling mortality.

The seasonal high water table on Kalurah and Malone soils is the main limitation to use of this unit as a site for community development.

3. Malone-Kalurah-Hailesboro

Very deep, somewhat poorly drained and moderately well drained loamy soils formed in glacial till and lacustrine sediments; on gentle ridges and knolls, in intervening basins, and on broad footslopes

This map unit, which has moderate relief, comprises broad, low hills and ridges separated to a minor extent by concave, flatter areas. Numerous small streams course to the landscape, joining rivers that flow into the St. Lawrence River. The rivers, bracketed by narrow flood plains in places, have in many areas cut down to bedrock. Slopes of the overall landscape range from 2 to 8 percent. The vegetative cover is northern hardwoods.

This map unit makes up about 4 percent of the survey area. It is about 44 percent Malone soils, 15 percent Kalurah soils, 11 percent Hailesboro soils, and 30 percent soils of minor extent.

Malone soils are on slight knolls and on broad, low hills. They are gently sloping, very deep, and somewhat poorly drained. They have a mottled, loamy subsoil and substratum. They formed in glacial till.

Kalurah soils are on small, prominent hills and knolls. They are gently sloping, very deep, and moderately well drained. They have a loamy subsoil and substratum and are mottled in the lower part of the subsoil and in the substratum. They formed in lacustrine sediments.

Hailesboro soils, on footslopes between hills and knolls, are gently sloping. They are very deep, somewhat poorly drained, and loamy. They have a mottled, loamy subsoil and substratum.

Of minor extent in this map unit are Adjidaumo, Swanton, and Stockholm soils, Borosaprists, and Fluvaquents. Adjidaumo soils are in depressions where water tends to pond. They are poorly drained and very poorly drained. Swanton and Stockholm soils are intermingled with Malone soils on footslopes and on broader flats broken by numerous small knolls. Swanton soils are somewhat poorly drained and poorly drained. Stockholm soils are poorly drained. Borosaprists and Fluvaquents, on flood plains, are somewhat poorly drained to very poorly drained.

About 65 percent of the acreage of this unit has been cleared, mostly for corn silage or hay. Stony areas on the knolls and ridges are mostly used as pasture or forest land or have reverted to forest succession. Farm structures are mostly located on tops of gentle hills and ridges. Most areas of this map unit are suitable for farming. In some places surface stones limit tillage. On Malone, Hailesboro, and included soils, the seasonal high water table limits agricultural production. Erosion is a hazard on the longer, steeper slopes. Overgrazing and grazing when the soils are wet damage soil tilth, reduce productivity, and are the main management concerns.

This unit is suitable for trees. Eastern hemlock, red maple, northern white cedar, gray birch, and trembling aspen grow well on these soils. Productivity for trees is moderate or high. In spring and fall seasonal wetness causes severe rutting of skid trails and access roads and limits timber harvesting.

The seasonal high water table is the main limitation to use of this map unit as a site for community development.

4. Potsdam-Crary-Adirondack

Very deep, well drained to poorly drained, loamy soils formed in glacial till; on broad side slopes in the Adirondack Mountains and foothills

This map unit has moderate relief. It comprises large hills and ridges and side slopes of small mountains, and is dissected by numerous small streams. Slopes of the overall landscape range from 0 to 35 percent, but are mostly 3 to 15 percent. The vegetative cover is the beech-birch-maple type.

This map unit makes up about 4 percent of the survey area. It is about 40 percent Potsdam soils, 25 percent Crary soils, 20 percent Adirondack soils, and 15 percent soils of minor extent.

Potsdam soils are on broad hillsides and dissected mountainsides. They are strongly sloping and moderately steep, very deep, and well drained. They have a loamy subsoil and a loamy, dense, firm or very firm, impermeable substratum at depths ranging from 18 to 34 inches.

Crary soils are on broad backslopes, upper footslopes, and benches. They are gently sloping and strongly sloping, very deep, and moderately well drained. They have a loamy subsoil and a loamy, dense, firm or very firm, impermeable substratum at depths ranging from 16 to 28 inches. The lower part of the subsoil and the substratum are mottled.

Adirondack soils are on footslopes between hills and on broad benches. They are nearly level and gently sloping, very deep, and somewhat poorly drained and poorly drained. They have a loamy subsoil and a dense, firm or very firm, impermeable substratum at a depth of 15 to 30 inches. Both the subsoil and substratum are mottled.

Of minor extent in this map unit are Dawson, Lyman, and Tunbridge soils. Dawson soils, in depressions where water ponds, are very poorly drained and organic. Lyman and Tunbridge soils are on the upper backslopes and on mountaintops and hilltops. Lyman soils are somewhat excessively drained and shallow. Tunbridge soils are well drained and moderately deep.

About 5 percent of this unit, mostly in the Adirondack foothills, has been cleared for pasture, hay, and potatoes. Much of the cleared land has been reverting to brushland. The uncleared acreage is in second-growth hardwoods.

Most areas of this unit are not suitable for farming because of surface stones. The hazard of erosion on the longer, steeper slopes and the seasonal high water table on Adirondack and included soils are also problems for agricultural production.

On pasture, overgrazing and grazing when the soils are wet damage soil tilth and reduce productivity, and are management concerns.

This unit is well suited to trees. Sugar maple, yellow birch, and American beech are the most common species, followed by red spruce and eastern hemlock. Productivity for trees in most areas of this unit is moderate or high. In spring and fall seasonal wetness on Crary and Adirondack soils limits timber harvesting. It can cause severe rutting of skid trails and access roads, especially on Adirondack soils and the wetter, included soils.

The seasonal high water table on Adirondack and Crary soils and the dense, firm substratum in these and Potsdam soils are the main limitations to use of this unit as a site for community development.

Dominantly rock outcrops and very shallow to very deep, nearly level to moderately steep, somewhat excessively drained to very poorly drained soils; formed in glacial till and marine deposits

The four general soil map units in this group make up about 39 percent of the county. The soils in these units formed in glacial till on the Adirondack Mountains and foothills. They are mainly shallow or very shallow and have areas of Rock outcrop.

5. Tunbridge-Potsdam-Lyman

Shallow to very deep, well drained and somewhat excessively drained, loamy soils formed in glacial till on the Adirondack Mountains and foothills and on the crests and upper backslopes of hills

This map unit covers extensive areas in the southern part of the county. It comprises large networks of hills and ridges where bedrock underlies shallow and moderately deep glacial till. In some places it is on tops and upper side slopes of mountains and large hills that have moderate relief. In some places the overall landscape has only slight relief and the topography is knobby. Numerous small streams drain these units. Most slopes are 3 to 30 percent, but the range is 3 to 60 percent. The vegetative cover is beech, birch, maple, red spruce, and eastern hemlock.

This map unit makes up about 22 percent of the survey area. It is about 25 percent Tunbridge soils, 15 percent Potsdam soils, 10 percent Lyman soils, and 50 percent soils of minor extent.

Tunbridge soils are on the upper backslopes and on glaciated rock knobs. They are strongly sloping and moderately steep, moderately deep, and well drained. They have a loamy subsoil and a substratum underlain by granite or gneiss bedrock at a depth of 20 to 40 inches.

Potsdam soils are on smooth backslopes of hills and mountains. They are strongly sloping and moderately steep, very deep, and well drained. They have a loamy subsoil and a loamy, dense, firm or very firm, impermeable substratum at a depth of 18 to 34 inches.

Lyman soils are on the tops and upper backslopes of hills, mountains, and glaciated rock knobs. They are strongly sloping and moderately steep, shallow, and somewhat excessively drained. They have a loamy subsoil underlain by granite or gneiss bedrock at a depth of 10 to 20 inches.

Of minor extent in this unit are areas of rock outcrops, Loxley soils, Borosaprists, Fluvaquents, and Udifluvents. Rock outcrops are on the tops of hills and ridges and in short, sheer areas on mountainsides. Loxley soils, in depressions where water tends to pond, are very poorly drained and organic. Borosaprists, Fluvaquents, and Udifluvents are on bottomlands along streams. Borosaprists are very poorly drained, Fluvaquents are somewhat poorly drained to very poorly drained, and Udifluvents are well drained and moderately well drained.

A very small percentage of this unit has been cleared, mostly for home sites. Most areas of this unit are not suitable for farming because of rock outcrops, shallow soils, and surface stones. The hazard of erosion on longer, steeper slopes and the seasonal high water table on some soils of minor extent limit agricultural production. On pasture, overgrazing and grazing when the soils are wet damage soil tilth, reduce productivity, increase erosion, and are management concerns.

Potsdam and Tunbridge soils in this map unit are well suited to trees. Sugar maple, yellow birch, and American beech are the most common species, followed by red maple, red spruce, and eastern hemlock. Hemlock commonly grows on Lyman soils on the upper backslopes. Productivity of trees is moderate on Tunbridge and Potsdam soils and low on Lyman soils. Erosion can be a hazard when harvesting timber on longer, steeper slopes. Laying out skid trails on the contour and constructing water bars to protect trails when not in use help to control erosion.

Moderate depth to bedrock on Tunbridge soils, shallow depth to bedrock on Lyman soils, the firm and dense substratum on Potsdam soils, and rock outcrops are the main limitations to use of this unit as a site for community development.

6. Insula-Summerville-Quetico

Shallow and very shallow, well drained and somewhat excessively drained, loamy soils formed in glacial till over predominantly sandstone bedrock on broad, bedrock-controlled till plains

This map unit has slight relief. It comprises broad, low, nearly level-topped hills and ridges that consist of a thin mantle of loamy glacial till overlying nearly level-bedded sandstone bedrock. The hills and ridges have common rock outcrops and scattered small scarps. Slopes of the overall landscape range from 1 to 8 percent. The vegetative cover is northern hardwoods.

This unit makes up about 2 percent of the survey area. It is about 17 percent Insula soils, 15 percent Summerville soils, 10 percent Quetico soils, and 58 percent soils of minor extent.

Insula soils are on broad ridgetops and gentle side slopes. They are shallow, gently sloping, and well drained. They have a loamy subsoil underlain by sandstone or gneiss bedrock at a depth of 10 to 20 inches.

Summerville soils are on broad ridgetops and gentle side slopes. They are shallow, gently sloping, and well drained. They have a loamy subsoil underlain by sandstone or marble bedrock at a depth of 10 to 20 inches.

Quetico soils are on broad ridgetops. They are very shallow, nearly level and gently sloping, and somewhat excessively drained. They have a loamy subsoil underlain by sandstone or gneiss bedrock at a depth of 4 to 10 inches.

Of minor extent in this map unit are Adjidaumo, Gouverneur, Malone, Matoon, Muskellunge, Nehasne, and Raquette soils. Adjidaumo soils are on toeslopes and in depressions where water ponds. They are poorly drained and very poorly drained and very deep. Gouverneur soils are on the tops of slight hills where the glacial till mantle is less than 10 inches to marble or dolomitic sandstone bedrock. They are excessively drained and somewhat excessively drained and very shallow. Matoon, Muskellunge, and Malone soils are on the lower side slopes and footslopes. Matoon soils are somewhat poorly drained and moderately deep, and Muskellunge and Malone soils are somewhat poorly drained and very deep. Nehasne soils are on upper side slopes and on the convex tops of gentle hills and ridges. They are well drained and moderately deep. Raquette soils are on pronounced hills and ridges, commonly adjacent to streams. They are somewhat excessively drained and very deep. In some places, notably along the border of Jefferson County, are some areas of soils that are warmer than normal, usually by less than 2 degrees.

About 90 percent of the acreage of this unit has been cleared for corn silage, but mostly for pasture. Many cleared areas have reverted to forest succession. Farm structures are located mostly on nearby or included areas of deeper soils.

Most areas of this unit are poorly suited to cultivated crops and hay. The thin soil cover does not have sufficient moisture-holding capacity to sustain crops during dry summers. On pasture, overgrazing destroys pasture seeding, causes erosion, and is a management concern.

This unit is poorly suited to trees. Sugar maple, red oak, white oak, basswood, hickory, and northern white cedar are common species. Productivity for trees on this unit is low. Shallow depth to bedrock, excessive windthrow, and low available water capacity are the main problems. On the included soils, in spring and fall seasonal wetness causes severe rutting of skid trails and access roads and limits timber harvesting.

The shallow and very shallow depth to bedrock on Insula, Summerville, and Quetico soils and the seasonal high water table on the included soils are the main limitations to use of this unit as a site for community development.

7. Insula-Rock outcrop-Adjidaumo

Rock outcrops and shallow and very deep, well drained to very poorly drained, loamy and clayey soils formed in glacial till and marine deposits on the tops and sides of ridges and hills and in basins and on floors of narrow valleys

This map unit comprises pronounced ridges and intervening basins and draws (fig. 6). The ridges consist of a thin mantle of loamy glacial till overlying granitic gneiss bedrock and have common rock outcrops and scarps. The intervening basins and draws consist of wet, clayey marine sediments. The pattern of bedrock-controlled ridges controls streams, which follow an angular course. As they direct their way toward wet marine sediments on the valley floors, they abruptly change course to flow around and to the discontinuous ridges. Slopes of the overall landscape range from 0 to 35 percent. The vegetative cover is northern hardwoods.

This unit makes up about 11 percent of the survey area. It is about 25 percent Insula soils, 24 percent Rock outcrop, 10 percent Adjidaumo soils, and 41 percent soils of minor extent.

Insula soils are on tops and sides of low, commonly discontinuous ridges. They are shallow, strongly sloping and moderately steep, and well drained. They have a loamy subsoil underlain by granite or gneiss bedrock at a depth of 10 to 20 inches.

Rock outcrops are on the sides and tops of ridges, and in places protrude through the marine mantle on valley floors. Areas of Rock outcrop are strongly sloping and moderately steep. They consist mainly of hard, unrippable, granite gneiss bedrock.

Adjidaumo soils are on valley floors and in basins or draws. They are nearly level, very deep, and very poorly drained and poorly drained. They have a mottled, clayey subsoil and substratum. They formed in marine deposits.

Of minor extent in this map unit are Borosaprists and Carbondale, Heuvelton, Kalurah, Muskellunge, and Summerville soils. Borosaprists are very poorly drained, mucky soils on flood plains that have slack water. Carbondale soils, in low basins, are very poorly drained and organic. Heuvelton and Muskellunge soils are clayey on footslopes and on the lower backslopes that apron the ridges in the wider valleys. Heuvelton soils are moderately well drained, and Muskellunge soils are somewhat poorly drained. Kalurah soils, on mid-backslopes of ridges and hills, are moderately well drained, very deep, and loamy. Summerville soils are on ridges where isolated bodies of marble bedrock are close to the soil surface. They are shallow and well drained, and have a high soil reaction in contrast to Insula soils. In some places, notably along the border of Jefferson County, some areas of soils are warmer than normal, usually by less than 2 degrees.

About 60 percent of the acreage of this unit has been cleared, mostly for pasture. Many cleared areas have reverted to forest land. Farm structures are located mostly on ridges. In some places structures are sited on the included, deeper soils, but very commonly, bedrock is exposed in the cellars of both houses and barns.

Most areas of this unit are poorly suited to cultivated crops and hay. The steep, broken topography limits equipment use. Also, on Insula soils

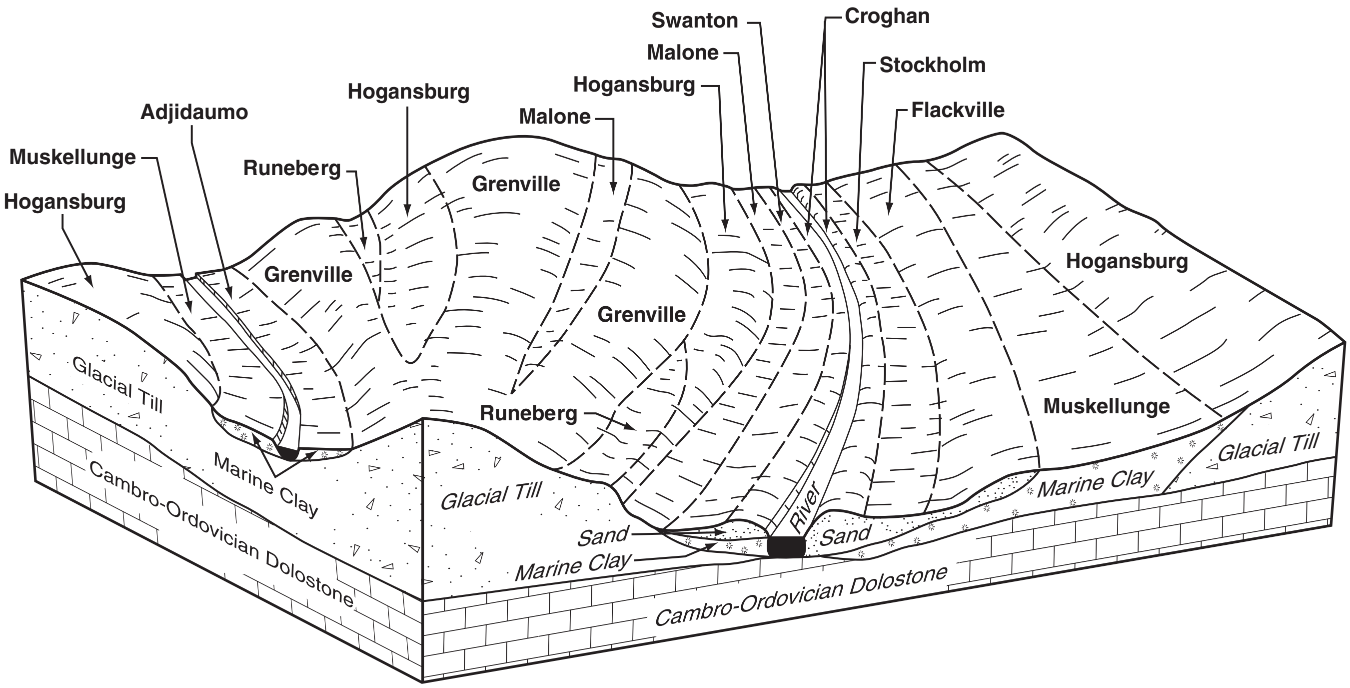

Figure 6.—Typical landscape of soils and underlying material of the Insula-Rock outcrop-Adjidaumo association.

the thin soil cover does not have sufficient moisture-holding capacity to sustain crops during dry summers and on Adjidaumo soils wetness delays the timely planting and harvesting of crops. On pasture, brush control, overgrazing, and grazing when the soils are wet are management concerns.

This unit is generally poorly suited to trees. Sugar maple, red oak, basswood, and hickory are common species. Productivity of trees is low. Shallow depth to bedrock on ridges and wetness in valleys are the main problems. Trees grow well on Kalurah soils on backslopes of ridges and on other included, deeper soils in convex areas. The rough, steep ridges and the wet valleys limit timber harvesting.

Rock outcrops, shallow depth to bedrock, and wetness are severe limitations to use of this unit as a site for most urban uses.

8. Summerville-Rock outcrop-Muskellunge

Rock outcrops and shallow and very deep, well drained and somewhat poorly drained loamy soils formed in glacial till and marine deposits; on the tops and sides of ridges and hills and on intervening foot slopes that apron the ridges and hills

This map unit comprises networks of pronounced ridges and intervening valleys. The ridges consist of a thin mantle of loamy glacial till overlying marble bedrock and have common rock outcrops and scarps. The intervening basins and draws consist of clayey, marine sediments.

The pattern of bedrock-controlled ridges influence the streams, which follow an angular course. As streams direct their way toward wet, marine sediments on valley floors, they abruptly change course to flow around and through discontinuous ridges. Slopes of the overall landscape range from 3 to 35 percent. The vegetative cover is northern hardwoods.

This map unit makes up about 4 percent of the survey area. It is about 21 percent Summerville soils, 19 percent Rock outcrop, 17 percent Muskellunge soils, and 43 percent soils of minor extent.

Summerville soils are on tops and sides of low, commonly discontinuous ridges. They are shallow, strongly sloping and moderately steep, and well drained. They have a loamy subsoil underlain by sandstone or marble bedrock.

Areas of Rock outcrop are on the sides and tops of ridges and in places protrude through the marine mantle on valley floors. They are strongly sloping and moderately steep, and consist mainly of marble bedrock that generally has a rippable, weathered rind.

Muskellunge soils are on converging footslopes in valleys. They are nearly level and gently sloping, very deep, and somewhat poorly drained. They have a mottled, clayey subsoil and substratum. They formed in marine deposits.

Of minor extent in this map unit are Borosaprists and Adjidaumo, Carbondale, Heuvelton, Insula, Kalurah, and Nehasne soils. Borosaprists are on flood plains that have slack water. The very poorly drained and poorly drained Adjidaumo soils are commonly in the center of the valleys bracketing streams or in isolated basins. They are very poorly drained and mucky. Carbondale soils, in low basins, are very poorly drained and organic. Heuvelton soils are on convex, dissected, lower backslopes and footslopes. They are moderately well drained and clayey. Insula soils are on ridges where isolated bodies of granite gneiss bedrock are close to the soil surface. They are shallow and well drained. Unlike Summerville soils, they have a low or medium soil reaction. Kalurah soils are on mid-backslopes of ridges and hills. They are moderately well drained, very deep, and loamy. Nehasne soils are on convex backslopes where bedrock is at a depth of 20 to 40 inches. They are loamy, well drained, and moderately deep. In some places, notably along the border of Jefferson County, some areas of soils are warmer than normal, usually by less than 2 degrees.

About 65 percent of the acreage of this unit has been cleared, mostly for pasture. However, many cleared areas have reverted to forest land. Most farm structures have been built on ridges. Some structures are placed on included, deeper soils or on sites where bedrock is exposed in the cellars of houses and barns.

Most areas of this map unit are poorly suited to cultivated crops and hay. The steep, broken topography limits use of equipment. Also, on Summerville soils the thin soil cover does not have sufficient moisture-holding capacity to sustain crops during dry summers; on Muskellunge soils wetness can delay planting and impede harvesting of crops. Controlling brush, overgrazing, and grazing when the soils are wet are management concerns.

This map unit is generally poorly suited to trees. Sugar maple, red oak, basswood, and hickory are common species. Productivity for trees in most areas of this unit is low or moderate. Shallow depth to bedrock on ridges and wetness in valleys are the main problems. Trees grow best on the included Kalurah soils on backslopes of ridges or on other, deeper included soils in convex areas. Rough, steep ridges and wetness in valleys limit timber harvesting.

Rock outcrop, shallow depth to bedrock, and wetness are severe limitations to use of this unit as a site for most urban uses.

Dominantly moderately deep to very deep, nearly level to strongly sloping, moderately well drained to very poorly drained soils; formed in marine deposits and fluvial and lacustrine sediments

The three general soil map units in this group make up about 13 percent of the county. The soils in these units are mainly very deep and formed in lacustrine and marine deposits.

9. Muskellunge-Matoon-Adjidaumo

Very deep and moderately deep, somewhat poorly drained and very poorly drained, loamy and clayey soils formed in marine deposits over predominantly sandstone bedrock; on marine plains

This map unit has a flat landscape. In places it is slightly rolling, but overall it is nearly level. The topography is influenced by the underlying, flat-bedded sandstone and dolomitic sandstone bedrock. Perennial streams are scarce, and drainage is slow. A few perennial streams with low, bedrock-controlled gradients meander sluggishly to watercourses that in some places plunge over scarps. The vegetative cover is northern hardwoods. Slope of the overall landscape ranges from 0 to 8 percent.

This unit makes up about 2 percent of the survey area. It is about 30 percent Muskellunge soils, 30 percent Matoon soils, 10 percent Adjidaumo soils, and 30 percent soils of minor extent.

Muskellunge soils are on slight hills where the bedrock is more than 60 inches deep. They are nearly level and gently sloping, somewhat poorly drained, and very deep. They have a mottled, clayey subsoil and substratum.

Matoon soils are on topography similar to that of Muskellunge soils, but where bedrock is between depths of 40 and 60 inches. They are nearly level and gently sloping, somewhat poorly drained, and moderately deep. They have a mottled, clayey subsoil and substratum underlain by sandstone, marble, or gneiss bedrock.

Adjidaumo soils, in depressions, are nearly level, poorly drained and very poorly drained, and very deep. They have a mottled, clayey subsoil and substratum.

Of minor extent in this map unit are Guff, Hannawa, Insula, and Ogdensburg soils. Guff soils are in swales and depressions where bedrock is at a depth of 20 to 40 inches. They are poorly drained and very poorly drained, clayey, and moderately deep. Hannawa soils are on upland benches or shallow troughs where bedrock is at a depth of 10 to 20 inches. They are poorly drained, loamy, and shallow. Insula soils are on bedrock-controlled ridges and are well drained, loamy, and shallow. Ogdensburg soils are in topographic positions similar to those of Hannawa soils. They are somewhat poorly drained, loamy, and moderately deep. In some places, notably along the border of Jefferson County, some areas of soils are warmer than normal, usually by less than 2 degrees.

About 85 percent of the acreage of this unit has been cleared, mostly for hayland or pasture. Many areas are used for corn silage. Some cleared areas have reverted to forest succession. Farm structures are commonly located in slightly elevated areas of Muskellunge soils.

Some areas of this unit are poorly suited to cultivated crops or hay because of wetness, particularly on poorly drained and very poorly drained Adjidaumo soils. In some areas, where shallow depth to bedrock does not interfere, artificial drainage helps to reduce wetness. On pasture, grazing when these soils are wet causes surface compaction, damages tilth, and is the main management concern. Overgrazing on these soils damages pasture seeding, causes an erosion hazard, and is also a management concern.

This unit is fairly suited to trees. Red maple, white oak, basswood, and hickory are common species. Productivity of trees is mainly low or moderate. Wetness limits logging operations and is the main problem in forest management. Severe rutting from logging on this soil will cause an erosion hazard and will damage future productivity.

Wetness, slow permeability, potential for frost action, and depth to bedrock are the main problems of this unit if used as a site for community development.

10. Nicholville-Roundabout

Very deep, moderately well drained to poorly drained, loamy soils formed in fluvial or lacustrine sediments on terraces and lakebeds

This map unit is in relatively wide, sometimes merging, upland valleys separated by narrow, bedrock-controlled ridges where glacial till thinly mantles summits and side slopes. Valleys dominate these landscapes, where Nicholville soils on terraces surmount Roundabout soils on valley floors. On terraces, past stream action or natural erosion has dissected the topography and slopes are short and complex. Valley floors have simple slopes in places inclining towards streams. Slope of the overall landscape ranges from 0 to 15 percent. The vegetative cover is northern hardwoods.

This map unit makes up about 1 percent of the survey area. It is about 35 percent Nicholville soils, 20 percent Roundabout soils, and 45 percent soils of minor extent.

Nicholville soils are gently sloping to strongly sloping, moderately well drained, and very deep. They are on commonly dissected terraces. They have a loamy subsoil and a loamy, mottled substratum. They formed in fluvial sediments.

Roundabout soils are on toe slopes on valley floors and commonly bracket streams. They are nearly level and gently sloping, poorly drained and somewhat poorly drained, very deep, and loamy. They have a mottled, loamy subsoil and substratum. They formed in lacustrine sediments.

Of minor extent in this map unit are Adams, Colton, Depeyster, and Hailesboro soils, rock outcrops, and Salmon, Summerville and Naumburg soils. Adams and Colton soils are on small hills and elevated terraces. They are somewhat excessively drained and excessively drained, sandy and gravelly soils. Depeyster and Hailesboro soils are in topographic positions similar to those of Nicholville and Roundabout soils. They are moderately well drained and somewhat poorly drained, fine textured, and loamy. Rock outcrops and the well drained, shallow Summerville soils are on small, isolated ridges that punctuate the valley bottoms and protrude to terraces. Salmon soils are well drained, loamy, and on convex, dissected terraces. Naumburg soils are somewhat poorly drained and poorly drained, sandy, and in topographic positions similar to those of Roundabout soils.

About 85 percent of the acreage of this unit has been cleared, mostly for hayland or pasture. A few areas are used for corn silage. Some cleared areas have reverted to forest succession.

Areas of this map unit are fairly suited to cultivated crops or hay. Wetness is the main limitation to use of Roundabout soils for most agricultural purposes. On Nicholville soils wetness is less of a problem, but erosion is a severe hazard in the steeper areas. On pasture, grazing when the soils are wet compacts the soil, damages tilth, and is a management concern. Overgrazing destroys pasture seeding, increases the erosion hazard, and is also a management concern.

This unit is suitable for trees. Sugar maple, red maple, yellow birch, basswood, and hickory are common species. Productivity for trees on this unit is mainly moderate or high. Wetness limits logging operations in spring and fall and is the main problem in forest management. If logging causes severe rutting, tree productivity declines and the erosion hazard increases.

Wetness and potential for frost action are the main problems of this unit if used as a site for community development.

11. Muskellunge-Adjidaumo-Swanton

Very deep, somewhat poorly drained to very poorly drained, loamy and clayey soils formed in marine deposits on narrow to broad plains

This map unit consists of broad, nearly level to moderate sloping plains separated by low hills commonly oriented in a northerly or northeasterly direction. Natural drainage in this unit is generally well established. Streams flow to these areas at regular intervals. Natural vegetation is northern hardwoods. Slopes of the overall topography range from 0 to 15 percent.

This unit makes up about 10 percent of the survey area. It is about 31 percent Muskellunge soils, 15 percent Adjidaumo soils, 13 percent Swanton soils, and 41 percent other soils.

Muskellunge soils are in broad, slightly concave basins or on gentle terraces skirting higher topography. They are nearly level, somewhat poorly drained, and very deep. They have a mottled clay subsoil and substratum.

Adjidaumo soils are in depressions. They are very deep, nearly level, and poorly drained and very poorly drained. They have a mottled clay subsoil and substratum.

Swanton soils are in slight depressions. They are very deep, nearly level, and somewhat poorly drained and poorly drained. They have a mottled, loamy subsoil and a mottled, clayey substratum.

Of minor extent in this unit are Elmwood, Heuvelton, Hogansburg, Kalurah, and Pyrities soils. Elmwood soils are slightly above Swanton and Muskellunge soils on the landscape or are on natural levees, parallel to streams. They are moderately well drained. They have a loamy subsoil and a clayey substratum. Heuvelton soils are clayey and moderately well drained on high parts of the landscape, commonly on small hills. Hogansburg, Kalurah, and Pyrities soils are loamy and moderately well drained and well drained on small hills. In some places, notably along the border of Jefferson County, some areas of soils are warmer than normal, usually by less than 2 degrees.

About 90 percent of the acreage of this unit has been cleared, mostly for hayland or pasture. Many areas are used for corn silage. Some areas have reverted to forest succession. Farm structures are commonly placed on included areas of glacial till.

This unit, particularly areas of Adjidaumo soils, is poorly suited to cultivated crops or hay because in some years wetness delays planting and interferes with harvesting. In some areas erosion is a hazard, particularly on some soils of minor extent. Erosion can deplete soil fertility, diminish water holding capacity, and pollute surface water. On pasture, grazing when the soils are wet causes surface compaction, damages tilth, and is a management concern. Overgrazing depletes pasture seeding, increases the erosion hazard, and is also a management concern.

This unit is fairly suited to trees. Red maple, white oak, basswood, and hickory are common species. Productivity for trees is low or moderate. Wetness limits logging operations, and is the main problem in forest management. Severe rutting from logging creates an erosion hazard and damages future productivity.

Wetness, slow permeability, shrink-swell potential, and potential for frost action are the main problems of this unit if used as a site for community development.

Dominantly very deep, nearly level to moderately steep, excessively drained to moderately well drained soils; formed in glaciofluvial and deltaic deposits

The two general soil map units in this group make up about 10 percent of the county. The soils in these units are dominantly very deep and formed in beach and deltiac deposits.

12. Adams-Croghan

Very deep, excessively drained to moderately well drained, sandy soils formed in deltaic deposits on sand plains

This map unit comprises broad deltas, which are formations of the Oswegatchie, Grasse, Raquette, and St. Regis Rivers. Slopes of the overall topography range from 0 to 35 percent. The vegetative cover is northern hardwoods, white pine, and red spruce.

This unit makes up about 5 percent of the survey area. It is about 65 percent Adams soils, 12 percent Croghan soils, and 23 percent soils of minor extent.

Adams soils are in relatively flat areas, but mainly on hills and ridges. They are gently sloping to moderately steep, somewhat excessively drained and excessively drained, and very deep. They have a sandy subsoil and substratum.

Croghan soils are on sides and tops of broad knolls and gentle ridges. They have a sandy subsoil and a sandy, mottled substratum. They are nearly level and gently sloping, moderately well drained, and very deep.

Of minor extent in this map unit are Borosaprists, Dune land, and Insula and Pyrities soils. Borosaprists are very poorly drained, mucky soils on slack water flood plains of streams. Dune land is in unstabilized sandy areas that wind blows and shifts. Insula soils are well drained, loamy, and shallow on abrupt hills and ridges. Pyrites soils are in places adjacent to included Insula soils, but generally are on less abrupt, more smoothly sloping hills and ridges than Insula soils. They are well drained, very deep, and loamy.

About 85 percent of the acreage of this unit has been cleared. Most other areas are in or are reverting to woodland.

This unit is poorly suited to cultivated crops or hay because of low moisture holding capacity and droughtiness. On pasture, overgrazing damages pasture seeding, increases the hazard of wind erosion, and is a management concern.

This unit is suitable for trees. Sugar maple, red maple, yellow birch, basswood, and hickory are common species. Productivity of trees is moderate.

Wetness on Croghan soils, excessive permeability, and cutbanks of the overall landscape caving in are problems if this unit is used as a site for community development. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

13. Adams-Colton-Duxbury

Very deep, excessively drained to well drained, sandy and loamy soils formed in deltaic and glaciofluvial deposits on the floors and sides of valleys in the Adirondack Mountains and foothills

This map unit consists of stream valleys in the southern part of the county. It comprises hills and ridges punctuated by nearly flat areas of eskers, kames, deltas, and crevasse fillings. Slopes of the overall topography range from 0 to 35 percent. The vegetative cover is northern hardwoods, white pine, and red spruce.

This unit makes up about 5 percent of the survey area. It is about 30 percent Adams soils, 30 percent Colton soils, 20 percent Duxbury soils, and 20 percent soils of minor extent.

Adams soils are on knolls and hills, but also in relatively flat areas. They are gently sloping to moderately steep, somewhat excessively drained and excessively drained, and very deep. They have a sandy subsoil and substratum.

Colton soils are on the sides and tops of ridges and on gentle to abrupt hills. They are sandy and gravelly in both the subsoil and the substratum. They are gently sloping to moderately steep, excessively drained, and very deep.

Duxbury soils are on the sides and tops of ridges and hills. They are loamy and gravelly in the subsoil and sandy and gravelly in the substratum. They are gently sloping to moderately steep, well drained, and very deep.

Of minor extent in this unit are Loxley, Lyman, Lyme, Naumburg, Searsport, and Tunbridge soils. Loxley soils, in basins, are very poorly drained and mucky. Lyman and Tunbridge soils, on prominent ridges and hills, are both loamy. Lyman soils are shallow and somewhat excessively drained. Tunbridge soils are moderately deep and well drained. Naumburg and Searsport soils are in depressions and on concave plains and valley floors that intervene between hills and ridges. They are somewhat poorly drained to very poorly drained. Lyme soils, in depressions, are poorly drained.

About 45 percent of the acreage of this unit has been cleared. Most areas are in or are reverting to woodland.

This unit is poorly suited to cultivated crops or hay. The main limitations are low moisture holding capacity, droughtiness, and in some areas, excessive slope. On pasture, overgrazing damages pasture seeding, increases the hazard of wind erosion, and is a management concern.

This unit is fairly suited to trees. Sugar maple, yellow birch, and American beech are common species. Productivity of trees is mostly low or moderate. The severe seedling mortality rate because of low available water capacity is the main problem in forest management.

Poor filtration of septic tank effluent and cutbanks caving in are limitations to use of this unit as a site for urban development. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Dominantly very deep, nearly level and gently sloping, excessively drained to very poorly drained soils; formed in beach and deltaic deposits

The two map units in this group make up about 7 percent of the county. The soils in these units are somewhat poorly drained to very poorly drained and formed in beach and deltaic deposits.

14. Naumburg-Croghan-Deford

Very deep, very poorly drained to moderately well drained, sandy soils formed in deltaic or beach deposits on broad sand plains

This map unit comprises sand plains and beaches. In many areas wind has redistributed the soils. The landscape comprises slight hills, depressions, and ridges. Slopes of the overall topography range from 0 to 8 percent. The vegetative cover is red maple, elm, ash, and, in some places, white pine.

This map unit makes up about 6 percent of the survey area. It is about 34 percent Naumburg soils, 21 percent Croghan soils, 10 percent Deford soils, and 35 percent soils of minor extent.

Naumburg soils are in slightly depressional basins or on plains. They are nearly level, somewhat poorly drained and poorly drained, and very deep. They have a sandy, mottled subsoil and substratum. They are relatively acid throughout.

Croghan soils are on sides and tops of slight ridges and gentle hills. They have a sandy subsoil and a mottled, sandy substratum. They are nearly level and gently sloping, moderately well drained, and very deep.

Deford soils are in landscape positions similar to those of Naumburg soils. They are sandy and mottled in both the subsoil and substratum and have relatively high reactions throughout. They are nearly level and gently sloping, poorly drained and very poorly drained, and very deep.

Of minor extent in this unit are Adams, Carbondale, Dorval, Flackville, Malone, Runeberg, Searsport, Stockholm, and Tughill soils. Adams soils, on prominent hills and ridges, are somewhat excessively drained and excessively drained. Carbondale and Dorval soils, in basins, are very poorly drained and mucky. Flackville soils, in positions on the landscape similar to those of Croghan soils, are moderately well drained. They have a sandy subsoil and a clayey substratum. Malone and Runeberg soils are somewhat poorly drained and very poorly drained and loamy in depressions. Stockholm soils are on slightly concave plains or in depressions. They are poorly drained and have a sandy subsoil and a clayey substratum.

About 50 percent of the acreage of this unit has been cleared. Most areas are woodland or are reverting to woodland.

Areas of this unit are poorly suited to cultivated crops or hay. The main limitations are wetness and low moisture holding capacity. On pasture, management concerns are overgrazing, which destroys pasture seedlings, and grazing when the soils are wet, which causes surface compaction and damages soil tilth.

This unit is fairly suited to trees. Productivity is low or moderate. Wetness causes a severe seedling mortality rate, shallow rootedness, and a severe windthrow hazard. It is the main problem in forest management.

Wetness, poor filtration of septic tank effluent, and cutbanks caving in are limitations to use of this unit as a site for urban development. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

15. Coveytown-Trout River-Cook

Very deep, excessively drained to very poorly drained, sandy soils and sandy and gravelly soils formed in beach deposits on broad till plains

This map unit is on beaches, where, during the glacial period, wave action on lakes separated fine textured material from broad areas of glacial till with little relief. The unit comprises slight ridges with broad basins in between. Slopes of the overall topography range from 0 to 8 percent. The vegetative cover is sugar maple, red maple, elm, ash, and northern white cedar.

This unit makes up about 1 percent of the survey area. It is about 40 percent Coveytown soils, 20 percent Trout River soils, 15 percent Cook soils, and 25 percent soils of minor extent.

Coveytown soils are on gentle toe slopes or in broad basins. They are nearly level, somewhat poorly drained, and very deep. They have a sandy, mottled subsoil and a loamy, mottled substratum.

Trout River soils are on low to pronounced ridges. They are nearly level and gently sloping, excessively drained, and very deep. They have a sandy and gravelly subsoil and substratum.

Cook soils are on toe slopes generally on the lowest parts of the landscape. They are nearly level, very poorly drained and poorly drained, and very deep. They have a sandy, mottled subsoil and a loamy, mottled substratum.

Of minor extent in this map unit are Fahey, Kalurah, Pyrities, Redwater, and Sunapee soils. Fahey soils are on tops and side slopes of gentle ridges. They are moderately well drained, and sandy and gravelly. Kalurah, Sunapee, and Pyrities soils are on hills of glacial till that in places protrude through thin beach sediments. They are moderately well drained and well drained, and loamy. Redwater soils are somewhat poorly drained and loamy on flood plains.

About 80 percent of the acreage of this unit has been cleared. Many areas of this map unit are used as meadowland. Some areas are, or are reverting to, woodland. A few areas are tilled.

This unit is poorly suited to cultivated crops and hay. The main limitations are wetness and low moisture holding capacity. On pasture, overgrazing, which destroys pasture seedlings, and grazing when the soils are wet, which causes soil compaction and damages soil tilth, are management concerns.

This unit is fairly suited to trees. Productivity is low or moderate. Wetness on Coveytown and Cook soils, which causes a severe seedling mortality rate, shallow rootedness, and a severe windthrow hazard, and droughtiness on Trout River soils, which causes a severe seedling mortality rate, are serious problems in forest management.

Wetness, poor filtration of septic tank effluent, and low permeability in the substratum on Coveytown and Cook soils and cutbanks caving in are limitations to use of this unit as a site for urban development. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Dominantly very deep, nearly level to moderately steep, excessively drained to very poorly drained soils; formed in organic materials and glaciofluvial sediments

The two map units in this group make up about 7 percent of the county. They consist mainly of organic soils, but include some adjacent mineral soils in the stream valley.

16. Dawson-Colton-Loxley

Very deep, very poorly drained and excessively drained, mucky and sandy soils formed in organic materials or glaciofluvial sediments in stream valleys in the Adirondack Mountains and foothills

This map unit is on floors and footslopes of valleys in the southern part of the county. It comprises hills, broad, intervening basins, and ridges. Slopes of the overall topography range from 0 to 35 percent. The vegetative cover is black spruce, balsam fir, red spruce, white pine, and hemlock.

This map unit makes up about 4 percent of the survey area. It is about 30 percent Dawson soils, 20 percent Colton soils, 15 percent Loxley soils, and 35 percent soils of minor extent.

Dawson soils are in basins. They are nearly level, very poorly drained, and very deep. They are mucky in the subsoil and sandy or loamy in the substratum.

Colton soils are on sides and tops of ridges and hills. They are gently sloping to moderately steep, excessively drained, and very deep. They are sandy and gravelly in both the subsoil and the substratum.

Loxley soils are nearly level, very poorly drained, and very deep in basins.

They have a mucky subsoil and substratum.

Of minor extent in this unit are Adams soils, Borosaprists, and Croghan, Duxbury, Lyme, Naumburg, and Tughill soils. Adams and Croghan soils are excessively drained to moderately well drained on terraces and prominent footslopes. Borosaprists are very poorly drained and loamy and gravelly on landforms similar to those of Colton soils. Lyme and Tughill soils are poorly drained and very poorly drained and loamy on toe slopes and footslopes. Naumburg soils are somewhat poorly drained and poorly drained on toeslopes.

About 5 percent of the acreage of this unit has been cleared. Most areas are woodland.

This unit is poorly suited to cultivated crops and hay because the soils are wet or are in low-lying woodland.

This unit is poorly suited to cultivated crops or hay because of wetness or low moisture holding capacity. On pasture, overgrazing, which destroys pasture seedlings, and grazing when the soils are wet, which causes surface compaction and damages soil tilth, are management concerns.

This unit is poorly suited to trees. Productivity for trees is low. Wetness causes a severe seedling mortality rate, shallow rootedness, and a severe windthrow hazard, and is the main problem in forest management. On Colton soils droughtiness is a problem.

Wetness, poor filtration of septic tank effluent, and cutbanks caving in are limitations to use of this unit as a site for urban development. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

17. Carbondale-Dorval

Very deep, very poorly drained, mucky soils formed in organic materials in basins

This map unit consists of broad basins of accumulated organic matter that gradually filled in glacial-period lakes. It comprises nearly level areas and common, relatively small hills and ridges. Slopes of the overall topography range from 0 to 3 percent. The vegetative cover is red maple, elm, aspen, and northern white cedar.

This unit makes up about 3 percent of the survey area. It is about 45 percent Carbondale soils, 20 percent Dorval soils, and 35 percent soils of minor extent.

Carbondale soils are nearly level, very poorly drained, and very deep in basins. They have a mucky subsoil and substratum.

Dorval soils are in landscape positions similar to those of Carbondale soils. They are nearly level, very poorly drained, and very deep. They are mucky in the subsoil and clayey in the substratum.

Of minor extent in this map unit are Adjidaumo soils, Borosaprists, and Heuvelton, Hogansburg, Insula, and Muskellunge soils. Adjidaumo soils, on slightly elevated toeslopes, are poorly drained and very poorly drained. Borosaprists are very poorly drained and mucky on flood plains. Heuvelton and Muskellunge soils are moderately well drained and somewhat poorly drained and clayey on footslopes, knolls, and hummocks. Hogansburg soils are moderately well drained and loamy on side slopes of small hills on bedrock-controlled ridges. Insula soils are shallow, well drained, and loamy on bedrock-controlled ridges.

About 40 percent of the acreage of this map unit has been cleared. Most areas are woodland or are reverting to woodland.

This unit is poorly suited to cultivated crops and hay because of wetness. On pasture, overgrazing, which destroys pasture seedlings, and grazing when the soils are wet, which causes surface compaction and damages soil tilth, are management concerns.

This unit is poorly suited to trees. Productivity for trees is low. Wetness causes a severe seedling mortality rate, shallow rootedness, and a severe windthrow hazard, and is the main problem in forest management.

Extreme wetness is the main limitation to use of this unit as a site for urban development.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit or soil is given under “Use and Management of the Soils.”

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Malone loam, 0 to 3 percent slopes, is one of several phases in the Malone series.

Some map units are made up of two or more major soils. These map units are called soil complexes and undifferentiated groups.

A *soil complex* consists of two or more soils, or one or more soils and a miscellaneous area, in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Muskellunge-Adjidaumo complex, undulating, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in the mapped areas are not uniform. An area can be made up of all of them. Hogansburg and Grenville soils, 0 to 8 percent slopes, very stony, is an undifferentiated group in this survey area.

Most map units include small, scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

Scales of Mapping

Two map legends were used in mapping detailed soil maps at the back of this publication. North of the Adirondack Park, a legend with a scale of 1:24,000 was used in mapping areas of soils as small as 6 acres. Areas of contrasting soils less than 6 acres are included in map units identified with alphabetic symbols.

Within the Adirondack Park, a legend at 1:62,500 was used in mapping soils in delineations as small as 40 acres. These map units are identified with alphanumeric symbols.

Where soils were mapped at the two separate scales, an “acceptable quality join” was completed across the match line. All soil polygons join line for line. Similar map units extend, within the constraints of each legend, across the match line.

Join Statement

The soil maps in St. Lawrence County match up adjoining counties as follows:

Akwesasne Territory: St. Regis Mohawk Reservation

Akwesasne Territory: St. Regis Mohawk Reservation is geographically located within the boundaries of St. Lawrence County. However, the reservation was mapped as a separate survey. All soil lines and map units are exact joins.

Jefferson County, New York

The same or similar soils match across the survey boundaries. In some areas, frigid soils in St. Lawrence County join similar soils having mesic temperatures in Jefferson County. This difference resulted from the slightly warmer temperatures in Jefferson County. The general and detailed soil map unit descriptions in St. Lawrence County both include soils having warmer temperatures near Jefferson County.

Lewis County, New York

Lewis County, an initial soil survey, is currently being mapped at 1:24,000. It will be joined line for line with exact or similar soils in creating an “acceptable quality join” to St. Lawrence County.

Herkimer County, New York

Herkimer County (northern part) does not have a modern published soil survey.

Hamilton County, New York

The soil survey of Hamilton County is in progress. The same soils match across survey boundaries in all cases.

Franklin County, New York

The Soil Survey of Franklin County is out of print. However, similar soils in St. Lawrence County join with the Franklin County survey area.

Soil Descriptions

021—Dawson-Fluvaquents-Loxley complex, frequently flooded

This map unit consists of very deep, nearly level soils on flood plains. Slopes are simple and range from 0 to 2 percent. Areas are 100 to 300 acres, but the range is 60 to 600 acres. Most areas are long and narrow and closely follow the flood plain of a perennial stream. Some areas have beaver dams. The unit is about 45 percent very poorly drained Dawson soil, 25 percent poorly drained Fluvaquents, 20 percent very poorly drained Loxley soil, and 10 percent other soils. The Dawson soil, Fluvaquents, and the Loxley soil are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Dawson soil—

Surface layer:
0 to 5 inches, yellowish brown peat

Subsurface layer:
5 to 30 inches, black muck

Substratum:
30 to 72 inches, gray loamy sand

Typical sequence, depth, and composition of the layers of Fluvaquents—

Surface layer:
0 to 10 inches, black or dark gray sand to silty clay loam

Substratum:
10 to 72 inches, mottled, stratified, gray to brown, sand to silty clay loam

Typical sequence, depth, and composition of the layers of the Loxley soil —

Surface layer:
0 to 3 inches, very dark grayish brown hemic material (mucky peat)

Subsurface layer:
3 to 72 inches, black sapric material (muck)

Included with this unit in mapping are small areas of moderately well drained Croghan and Nicholville soils on low-lying streamside terraces. Also included are small areas of well drained Berkshire soils on small knolls and hills, steeper sloping areas of excessively drained sandy Adams soils and gravelly Colton soils, and some small areas of shallow soils or exposed bedrock. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Dawson soil—

Permeability: Moderate or moderately rapid in the surface layer, moderately slow to moderately rapid in the underlying organic material, and rapid in the sandy substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic material

and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from September to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Frequent

Important properties of Fluvaquents—

Permeability: Slow to rapid throughout
Available water capacity (average for a 40-inch soil profile): Low to high
Soil reaction: Very strongly acid to neutral in the surface layer and very strongly acid to moderately alkaline in the substratum
Erosion hazard: Severe hazard of streambank erosion
Depth to water table: From ponded on the surface to a depth of 1.5 feet below the surface from October to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Frequent

Important properties of the Loxley soil—

Permeability: Moderate or moderately rapid in the surface layer and moderately slow to moderately rapid below
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Frequent

Most areas of this soil are brushland.

This soil is unsuitable for crops and pasture because of wetness and frequent flooding.

Potential productivity for trees on these soils is low or moderate. The high water table and frequent flooding are severe problems in forest management. Regeneration is difficult because wetness causes excessive seedling mortality. Planting during optimum moisture conditions helps to prevent excessive seedling mortality. The windthrow hazard is severe because the water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. The soil is soft and unstable when wet and will not support heavy planting or logging equipment. Logging in winter when the ground is frozen reduces the problems from heavy equipment use.

This soil is poorly suited to use as a site for building development. It is soft and unstable when wet and is subject to considerable subsidence when the water table is lowered. Flooding and the seasonal high water table are severe limitations. An alternative is to use nearby or included soils, such as Berkshire soils, that are better suited to building site development.

The capability subclass is 5w for the Dawson soil, Fluvaquents, and the Loxley soil. The forestland ordination symbol is 2W for the Dawson and Loxley soils. Fluvaquents are not classified.

023—Loxley-Dawson complex

This map unit consists of very deep, nearly level soils in low-lying basins. Slopes are simple and range from 0 to 2 percent. Areas are 100 to 300 acres, but the range is 60 to 600 acres. Most areas are broad. The unit is about 45 percent very poorly drained Loxley soil, 35 percent very poorly drained Dawson soil, and 20 percent other soils. The Loxley and Dawson soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Loxley soil—

Surface layer:
0 to 3 inches, very dark grayish brown hemic material (muck peat)

Subsurface layer:
3 to 72 inches, black sapric material (muck)

Typical sequence, depth, and composition of the layers of the Dawson soil—

Surface layer:
0 to 5 inches, yellowish brown peat

Subsurface layer:
5 to 30 inches, black muck

Substratum:
30 to 72 inches, gray loamy sand

Included with these soils in mapping are small areas of moderately well drained Croghan and Nicholville soils on low-lying hummocks. Also included are small areas of shallow Lyman soils on exposed bedrock; steeper sloping areas of excessively drained, sandy Adams soils and gravelly Colton soils; and areas of very bouldery, poorly drained Lyme soils and somewhat poorly drained Adirondack soils in some slightly higher places near footslopes of surrounding landscapes. Also included are small areas of well drained Berkshire soils on small knolls and hills. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Loxley soil—

Permeability: Moderate or moderately rapid in the surface layer and moderately slow to moderately rapid below
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Dawson soil—

Permeabilty: Moderate or moderately rapid in the surface layer, moderately slow to moderately rapid in the underlying organic material, and rapid in the sandy substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic material and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from September to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are brushland.

This soil is unsuitable for crops and pasture because wetness is difficult to overcome.

Potential productivity for black spruce on this soil is low or moderate. The high water table and ponding on these soils are severe problems in forest management. Regeneration is difficult because wetness causes excessive seedling mortality. Planting during optimum moisture conditions helps to prevent excessive seedling mortality. The windthrow hazard is severe because the water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. The soil is soft and unstable when wet, and will not support heavy planting or logging equipment. Logging in winter when the ground is frozen reduces the problems from heavy equipment use.

These soils are poorly suited to use as a site for building site development. The soils are soft and unstable when wet, and are subject to considerable subsidence when the water table is lowered. Ponding and the seasonal high water table are also severe limitations to building site development. An alternative is to use nearby or included soils, such as Berkshire soils, that are better suited to building site development.

The capability subclass is 5w for the Loxley and Dawson soils. The forestland ordination symbol is 2W for the Loxley and Dawson soils.

363A—Adams sand, 0 to 3 percent slopes

This is a very deep, nearly level, excessively drained soil on sand plains and on tops of broad deltas. Most areas are irregular in shape. Areas are 60 to 100 acres, but the range is 40 to 200 acres.

Typical sequence, depth, and composition of the layers of the Adams soil—

Surface layer:
0 to 7 inches, dark brown sand

Subsurface layer:
7 to 8 inches, pinkish gray sand

Subsoil:
8 to 13 inches, dark brown and yellowish red loamy sand
13 to 20 inches, strong brown sand

Substratum:
20 to 72 inches, light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are areas of loamy Berkshire and Potsdam soils on small hills and knolls, some small areas of Dune land, and some small areas of Adams soils where the surface layer and the subsoil have been eroded. Included areas range to 40 acres and make up about 20 percent of the unit.

Important properties of the Adams soil—

Permeabilty: Rapid in the surface layer and the subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in

the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Low
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are forested. Some cleared areas are reverting to brush or woodland or are barren.

This soil is poorly suited to cultivated crops because of low fertility and low water holding capacity. It is also subject to wind erosion. Planting long-term sod crops and establishing and maintaining windbreaks help to control wind erosion. Applying manure and adding lime and fertilizer according to soil tests help to improve fertility. Irrigating to overcome droughtiness generally is cost effective only for certain high value crops, such as strawberries. Applying manure also helps to improve water holding capacity and to reduce droughtiness.

This soil is poorly suited to hay and pasture because it is droughty and infertile. Adding fertilizer, lime, and organic matter to improve fertility helps to sustain beneficial plants. Adding crop residue and other organic matter to the soil helps to increase available water capacity. Proper stocking rates and pasture rotation help to protect desirable plant species especially vulnerable to overgrazing during dry periods.

Potential productivity for sugar maple on this soil is moderate. The rate of seedling mortality can be excessive because of droughtiness. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to reduce the seedling mortality rate.

This soil is suited to use as a site for dwellings with basements. Cutbanks caving in is a hazard. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

This soil is well suited to use as a site for local roads and streets.

Rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. Extensive site alterations are required to ensure uniform distribution of effluent throughout the absorption field and to prevent ground-water contamination. An alternative is to place the absorption field on included Berkshire soils, which are better suited than the Adams soil to septic tank absorption fields.

Most areas of this soil are an excellent source of sand.

The capability subclass is 4s. The forestland ordination symbol is 3S.

363B—Adams sand, 3 to 15 percent slopes

This is a very deep, gently sloping to strongly sloping, excessively drained soil on knolls and broad hilltops and in other elevated areas on sand plains, deltas, and natural levees. Most areas are irregular in shape. Areas are 60 to 100 acres, but the range is 40 to 200 acres.

Typical sequence, depth, and composition of the layers of the Adams soil:

Surface layer:
0 to 7 inches, dark brown sand

Subsurface layer:
7 to 8 inches, pinkish gray sand

Subsoil:
8 to 13 inches, dark brown and yellowish red loamy sand
13 to 20 inches, strong brown sand

Substratum:
20 to 72 inches, light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are areas of loamy Berkshire and Potsdam soils on small hills and knolls, some small areas of Dune land, and some small areas of Adams soils where the surface layer and the subsoil have been eroded. Included areas range to 40 acres and make up about 20 percent of the unit.

Important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches

Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are forested. Some cleared areas are reverting to brush or woodland or are barren.

This soil is poorly suited to cultivated crops. It is subject to both wind and water erosion, is droughty, and has low natural fertility. Conservation tillage and crop rotations that emphasize sod crops help to control erosion, particularly in steeper areas. Applying manure and adding lime and fertilizer according to soil tests help to improve fertility. Irrigating to overcome droughtiness generally is cost effective only for certain high value crops, such as strawberries. Applying manure also helps to improve water holding capacity and to make the soil less droughty.

This soil is poorly suited to hay and pasture. The soil is droughty and infertile. If pasture is overgrazed, erosion is a severe hazard, especially in steeper areas. Maintaining a vegetative cover and restricting grazing help to control erosion. Adding fertilizer, lime, and organic matter to improve fertility helps to sustain beneficial plants. Adding crop residue and other organic matter to the soil helps to increase available water capacity. Proper stocking rates and pasture rotation help to protect desirable plant varieties especially vulnerable to overgrazing during dry periods.

Potential productivity for sugar maple on this soil is moderate. The soil is droughty, and seedling mortality is a management concern. Planting in spring or fall during optimum moisture conditions helps to reduce the seedling mortality rate.

Slope is the main limitation to use of this soil as a site for dwellings with basements. Dwellings can be designed to conform to the natural slope. Shaping the land provides a more level building site. Cutbanks caving in a hazard in excavations. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins. If vegetation is removed, erosion is a hazard. Controlling runoff, maintaining a ground cover during construction, and restoring vegetative cover as soon as possible after construction help to control water and wind erosion.

Slope is a moderate limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour and land shaping and grading help to provide a more level site.

Rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is poor filter of effluent, and ground-water contamination is a hazard. Extensive site alterations are needed to ensure uniform distribution of effluent throughout the absorption field and to prevent ground-water contamination. An alternative is to select included soils, such as Berkshire soils on knolls, that are better suited to septic tank absorption fields than the Adams soil.

Most areas of this soil are excellent sources of sand.

The capability subclass is 6e. The forestland ordination symbol is 3S.

363D—Adams sand, 15 to 35 percent slopes

This is a very deep, moderately steep and steep, excessively drained soil on hills and dissected valley sides and in other elevated areas on sand plains, deltas, and natural levees. Most areas are irregular in shape. Areas are 60 to 100 acres, but the range is 40 to 200 acres.

Typical sequence, depth, and composition of the layers of the Adams soil—

Surface layer:
0 to 7 inches, dark brown sand

Subsurface layer:
7 to 8 inches, pinkish gray sand

Subsoil:
8 to 13 inches, dark brown and yellowish red loamy sand
13 to 20 inches, strong brown sand

Substratum:
20 to 72 inches, light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are loamy Berkshire and Potsdam soils on broad hillsides, areas of very gravelly Colton and Duxbury soils, and some small areas of Dune land. Also included are small areas of Adams soils where the surface layer and the subsoil have been eroded. Included areas range to 40 acres and make up about 20 percent of the unit.

Important properties the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in

the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Very severe
Depth to water table: Below 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are forested. Some cleared areas are reverting to brush or woodland or are barren.

This soil is unsuited to cultivated crops. It is too steep for efficient tillage and is subject to both wind and water erosion. Also, it is droughty and has little natural fertility.

This soil is poorly suited to hay and pasture because it is droughty and infertile. If pasture is overgrazed, erosion is a severe hazard, especially in steeper areas. Maintaining a vegetative cover and restricting grazing help to control erosion. Adding fertilizer, lime, and organic matter to improve fertility helps to sustain beneficial plants. Adding crop residue and other organic matter to the soil helps to increase available water capacity. Proper stocking rates and pasture rotation help to protect desirable plant varieties especially vulnerable to overgrazing during dry periods.

Potential productivity for sugar maple on this soil is high. The seedling mortality rate is excessive because of droughtiness. Timely planting when the soil is moist, but not wet, and selecting adaptable varieties help to reduce the seedling mortality rate. Excessive slope can interfere with some mechanized planting and harvesting operations. Erosion is a hazard on longer, steeper slopes. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion.

Moderately steep and steep slopes are a severe limitation to use of this soil as a site for dwellings with basements. Designing the structure to conform to slope and cutting and filling to shape the land help to overcome this limitation. Cutbanks caving in is a hazard for excavations. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins. An alternative is to build dwellings on included soils that are less sloping than the Adams soil.

This soil is poorly suited to use as a site for local roads and streets because of moderately steep and steep slopes. Grade and alignment standards for roads are difficult to maintain without cutting and filling extensive areas. In some areas roads could be built as much as possible in nearby or included, less sloping soils.

Very rapid permeability in the substratum and moderately steep and steep slopes are severe limitations to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. An alternative is to place the absorption field on nearby or included soils, such as less sloping, less permeable Berkshire soils, that are better suited to septic tank absorption fields than the Adams soil.

Most areas of this soil are excellent sources of sand.

The capability subclass is 7e. The forestland ordination symbol is 3S.

365—Naumburg-Croghan complex

This map unit consists of very deep, somewhat poorly drained, poorly drained, and moderately well drained, nearly level soils on glacial stream terraces, deltas, and beaches. It is in low positions near streams along valley floors and on broad sand plains. Slopes are mostly simple and range from 0 to 3 percent. Areas of this unit are in various shapes and are 100 to 500 acres, but the range is 80 to 1,500 acres. The unit is about 50 percent somewhat poorly drained and poorly drained Naumburg soil, 25 percent moderately well drained Croghan soil, and 25 percent other soils. The Naumburg and Croghan soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Naumburg soil—

Surface layer:
0 to 5 inches, black moderately decomposed organic material

Subsurface layer:
5 to 17 inches, pinkish gray loamy fine sand
17 to 19 inches, reddish gray fine sand

Subsoil:
19 to 21 inches, dark reddish brown loamy fine sand
21 to 31 inches, brown sand
31 to 41 inches, yellowish brown sand

Substratum:
41 to 72 inches, light brownish gray sand

Typical sequence, depth, and composition of the layers of the Croghan soil—

Surface layer:
0 to 7 inches, dark loamy brown fine sand

Subsurface layer:
7 to 10 inches, pinkish gray sand

Subsoil:
10 to 12 inches, dark reddish brown sand
12 to 20 inches, red sand
20 to 33 inches, strong brown fine sand
33 to 44 inches, brown fine sand

Substratum:
44 to 72 inches, brown fine sand

Included with this soil in mapping are small areas of very poorly drained Searsport, Dawson, and Loxley soils in pockets where organic material has accumulated. Also included are small areas of well drained Berkshire soils on pronounced hummocks, some small included areas of finer textured Roundabout and Nicholville soils generally on low terraces, and some small areas of loamy and bouldery Lyme, Adirondack, and Tughill soils on lesser knolls. Also included are areas of well drained and excessively drained, gravelly Duxbury and Colton soils on narrow, sinuous ridges or on networks of small, short hills. Inclusions range to 40 acres and make up about 25 percent of this map unit.

Important properties of the Naumburg soil—

Permeability: Moderately rapid in the organic surface layer and the mineral subsurface layer and rapid in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Low
Depth to water table: From 0.5 to 1.5 feet from December to May
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Croghan soil—

Permeability: Rapid or very rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Very strongly acid to moderately acid in the surface layer and very strongly acid to moderately acid below
Erosion hazard: Slight
Depth to water table: At a depth of 1.5 to 2.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are in woodland that is dominantly balsam fir, spruce, or tamarack.

These soils are poorly suited to cultivated crops. Soil wetness, low fertility, and low available water capacity are the main limitations. The high water table delays planting and interferes with harvesting. Drainage is important for crop production on these soils. On the Naumburg soil drainage is especially needed because the growing season is short. The coarse-textured Naumburg and Croghan soils do not store nutrients and water well. Adding lime and fertilizer in multiple increments according to soil tests is needed for vigorous growth of crops. Tillage methods that leave plant residue on the surface help to conserve moisture.

These soils are poorly suited to pasture and hayland. Productivity is low because of wetness and lack of fertility. The seasonal high water table on the Naumburg soil restricts the rooting depth of some plants, especially legumes. Grazing when the soil is wet causes surface compaction and loss of tilth. Artificial drainage and the selection of shallow-rooted, water-tolerant species help to improve productivity. Applying lime and fertilizer according to soil tests, restricting grazing during wet periods, and yearly mowing help to prevent surface compaction, to preserve tilth, and to enhance quality and quantity of feed and forage.

Potential productivity for trees on these soils is low or moderate. In some years wetness on the Naumburg soil interferes with machine planting. On the Naumburg soil the seasonal high water table also limits use of logging equipment during wet seasons and increases the cost of road building. Logging in winter when the ground is frozen helps to avoid problems from the water table, such as equipment rutting the soil or having delays. On the Naumburg soil the seedling mortality rate is severe because of the high water table. Timely planting when the soil is moist, but not wet, and selecting adaptable varieties help to reduce the seedling mortality rate. The water table limits root development and windthrow is a moderate hazard. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

These soils are poorly suited to use as a site for dwellings with basements because of wetness. On the Croghan soil installing footing drains and sealing basement walls help to reduce wetness. An alternative is to build dwellings on nearby or included soils, such as Berkshire soils, that are better suited than the Naumburg and Croghan soils to this use.

The seasonal high water table, particularly on the Naumburg soil, is a severe limitation to use of these soils for local roads and streets. Potential for frost action is also a limitation. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

These soils are poorly suited to septic tank absorption fields because of wetness and rapid or very rapid permeability. They are a poor filter of sewage effluent, and ground-water contamination is a hazard. An alternative is to select nearby or included soils, such as Berkshire soils, that are better suited than the Naumburg and Croghan soils to septic tank absorption fields.

The capability subclass is 4w for the Naumburg soil and 2w for the Croghan soil. The forestland ordination symbol is 2W for the Naumburg soil and 10S for the Croghan soil.

376A—Colton-Duxbury-Adams complex, 0 to 3 percent slopes

This map unit consists of very deep, gently sloping soils on outwash plains and on tops of low hills and ridges. Slopes are generally smooth, but a few areas are undulating. Areas of this unit are 100 to 300 acres, but the range is 40 to 1,000 acres. The unit is about 45 percent excessively drained Colton soil, 20 percent well drained Duxbury soil, 15 percent excessively drained Adams soils, and 20 percent other soils.

Typical sequence, depth, and composition of the layers of the Colton soil—

Surface layer:
0 to 6 inches, dark reddish brown gravelly loamy sand

Subsoil:
6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum:
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the layers of the Duxbury soil—

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 14 inches, strong brown silt loam
14 to 24 inches, dark yellowish brown gravelly loam

Substratum:
24 to 72 inches, dark yellowish brown very gravelly coarse sand

Typical sequence, depth, and composition of the layers of the Adams soil—

Surface layer:
0 to 7 inches, dark brown sand

Subsurface layer:
7 to 8 inches, pinkish gray sand

Subsoil:
8 to 13 inches, dark brown and yellowish red loamy sand
13 to 20 inches, strong brown sand

Substratum:
20 to 72 inches, light yellowish brown sand

Included with these soils in mapping are small areas of moderately well drained Croghan soils in low-lying or concave positions. Also included are areas of mucky Loxley and Dawson soils in small depressions, small areas of loamy Berkshire soils on valley sides and on tops of knolls and ridges, and small areas of shallow soils or exposed bedrock. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Colton soil—

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer, extremely acid to strongly acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Duxbury soil—

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and the substratum
Erosion hazard: Slight

Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Moderate
Depth to water table: Below 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are fairly suited or poorly suited to cultivated crops. Low soil reaction, low natural fertility, and droughtiness on the Colton and Adams soils are the main limitations. Irrigation and dryland farming practices, such as mulching and adding organic matter, help to overcome droughtiness. Irrigation may not be practical for most crops grown in the area. Adding lime and fertilizer according to soil tests helps to increase fertility and to raise soil reaction. In some areas of the Colton soil gravel and cobbles in the surface cause excessive wear on machinery.

These soils are fairly suited to hay and pasture. Maintaining proper stocking rates is important because in summer plants grow slow on the droughty Colton and Adams soils and are susceptible to overgrazing. Low natural fertility and low soil reaction are also limitations. Adding lime and fertilizer according to soil tests helps to improve low natural fertility, low soil reaction, and low yields.

Potential productivity for eastern white pine on these soils is moderate or high. On the droughty Colton and Adams soils the seedling mortality rate is excessive. Planting during optimum moisture conditions helps to reduce the seedling mortality rate for planted stock. Some areas need to be mulched with straw or excelsior.

These soils are well suited to use as a site for dwellings with basements. Cutbanks caving in is a hazard during construction of basements. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

These soils are well suited to local roads and streets.

Rapid permeability in the substratum is a severe limitation to use of these soils as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. Extensive site alterations may be needed to ensure uniform distribution of effluent throughout the absorption field and to prevent ground-water contamination. An alternative is to place the absorption field on included areas of Berkshire soils, which are more suitable than Colton, Duxbury, and Adams soils to this use.

Most areas of these soils are an important source of sand and gravel; however, numerous large stones and boulders are common in the substratum.

The capability subclass is 3s for the Colton soil, 1 for the Duxbury soil, and 4s for the Adams soil. The forestland ordination symbol is 3S for the Colton and Adams soils and 8A for the Duxbury soil.

376C—Colton-Duxbury-Adams complex, 3 to 15 percent slopes

This map unit consists of very deep, strongly sloping, moderately steep soils on dissected outwash plains and on sides of hills and ridges. Slopes are generally smooth, but a few areas are rolling or hilly. Areas of this unit are 100 to 300 acres, but the range is 40 to 1,000 acres. The unit is about 45 percent excessively drained Colton soil, 20 percent well drained Duxbury soil, 15 percent Adams soil, and 20 percent other soils. The Colton, Duxbury, and Adams soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Colton soil—

Surface layer:
0 to 6 inches, dark reddish brown gravelly loamy sand

Subsoil:
6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum:
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the layers of the Duxbury soil—

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 14 inches, strong brown silt loam
14 to 24 inches, dark yellowish brown gravelly loam

Substratum:
24 to 72 inches, dark yellowish brown very gravelly coarse sand

Typical sequence, depth, and composition of the layers of the Adams soil—

Surface layer:
0 to 7 inches, dark brown sand

Subsurface layer:
7 to 8 inches, pinkish gray sand

Subsoil:
8 to 13 inches, dark brown and yellowish red loamy sand
13 to 20 inches, strong brown sand

Substratum:
20 to 72 inches, light yellowish brown sand

Included with these soils in mapping are small areas of moderately well drained Croghan soils in low-lying or concave positions. Also included are areas of mucky Loxley and Dawson soils in small depressions, small areas of loamy Berkshire soils on valley sides and on tops of knolls and ridges, and small areas of shallow soils or exposed bedrock. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Colton soil—

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer, extremely acid to strongly acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Duxbury soil—

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Moderate
Depth to water table: Below 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland or pasture.

These soils are fairly suited or poorly suited to cultivated crops. Low soil reaction, low natural fertility, and doughtiness on the Colton and Adams soils are the main limitations. Erosion is a severe hazard on longer, steeper slopes. Irrigation and dryland farming techniques, such as mulching and adding organic matter, help to overcome droughtiness on the Colton soil, but may not be practical for most crops grown in the area. Adding lime and fertilizer according to soil tests helps to increase fertility and soil reaction. Conservation practices, such as conservation tillage, contour plowing, and stripcropping, and using crop rotations that emphasize sod crops help to control erosion.

These soils are fairly suited to hay and pasture. Maintaining proper stocking rates is important because in summer plants grow slow on the droughty Colton and Adams soils and are particularly susceptible to overgrazing. Low natural fertility and low soil reaction are also limitations. Adding lime and fertilizer according to soil tests helps to improve low natural fertility, low soil reaction, and low yields.

Potential productivity for eastern white pine on these soils is moderate or high. On the droughty Colton and Adams soils, the seedling mortality rate is excessive. Planting during optimum moisture conditions helps to reduce the seedling mortality rate for planted stock. In some areas mulching with straw or excelsior is needed.

These soils are suited to use as a site for dwellings with basements and local roads and streets. Excessive slope is a moderate limitation. Designing the structure to conform to slope or shaping the land helps to overcome this limitation. Cutbanks caving in is a hazard during construction of basements. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Rapid permeability in the substratum is a severe limitation to use of these soils as a site for septic tank absorption fields. The soils are a poor filter of effluent, and ground-water contamination is a hazard. Extensive site alterations may be needed to improve performance of the absorption field and to prevent ground-water contamination. An alternative is to place the absorption field on included soils, such as Berkshire soils, that are more suitable for this use.

Most areas of these soils are important sources of sand and gravel; however, numerous large stones and boulders are common in the substratum.

The capability subclass is 4s for the Colton soil, 3e for the Duxbury soil, and 4e for the Adams soil. The forestland ordination symbol is 3S for the Colton and Adams soils and 8A for the Duxbury soil.

376D—Colton-Duxbury-Adams complex, 15 to 35 percent slopes

This map unit consists of very deep, hilly and steep soils on dissected deltas and on dissected kames and kame terraces along river valleys. Slopes are generally complex. Areas of this unit are 100 to 300 acres, but the range is 40 to 600 acres. The unit is about 40 percent excessively drained Colton soil, 25 percent well drained Duxbury soil, 15 percent Adams soil, and 20 percent other soils. The Colton, Duxbury, and Adams soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Colton soil—

Surface layer:
0 to 6 inches, dark reddish brown gravelly loamy sand

Subsoil:
6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum:
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the layers of the Duxbury soil—

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 14 inches, strong brown silt loam
14 to 24 inches, dark yellowish brown gravelly loam

Substratum:
24 to 72 inches, dark yellowish brown very gravelly coarse sand

Typical sequence, depth, and composition of the layers of the Adams soil—

Surface layer:
0 to 7 inches, dark brown sand

Subsurface layer:
7 to 8 inches, pinkish gray sand

Subsoil:
8 to 13 inches, dark brown and yellowish red loamy sand
13 to 20 inches, strong brown sand

Substratum:
20 to 72 inches, light yellowish brown sand

Included with these soils in mapping are small areas of moderately well drained Croghan soils in low-lying or concave positions. Also included are some areas of mucky Loxley and Dawson soils in small depressions, small areas of loamy Berkshire soils on valley sides and on tops of knolls and ridges, and small areas of shallow soils or exposed bedrock. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Colton soil—

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer, extremely acid to strongly acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low

Flooding hazard: None

Important properties of the Duxbury soil—

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Moderate
Depth to water table: Below 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland.

These soils are unsuited to cultivated crops. Steepness of slope, low soil reaction, low natural fertility, and droughtiness on the Colton and Adams soils are the main limitations. Erosion is a severe hazard.

These soils are poorly suited to hay and pasture because of steepness of slope and the severe hazard of erosion. On pasture overgrazing can destroy pasture seedlings and can cause an erosion hazard. Proper stocking rates are important because in summer plants grow slow on the droughty Colton and Adams soils and are susceptible to overgrazing. Low natural fertility and low soil reaction are also limitations. Adding lime and fertilizer according to soil tests helps to improve low natural fertility, low soil reaction, and low yields.

Potential productivity for eastern white pine on these soils is moderate or high. On the droughty Colton and Adams soils the seedling mortality rate is excessive. Planting during optimum moisture conditions helps to reduce the seedling mortality rate for planted stock. Some areas need to be mulched with straw or excelsior. Excessive slope may limit machine planting of seedlings and other mechanized operations.

These soils are poorly suited to use as a site for dwellings with basements because of slope. Also, cutbanks caving in is a hazard during construction. Designing the structure to conform to slope or shaping the land helps to overcome this limitation. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins. An alternative is to build dwellings on included or nearby soils that are less sloping than the Colton, Duxbury, and Adams soils.

Excessive slope is a severe limitation to use of these soils as a site for local roads and streets. Maintaining grade alignment standards during road construction is difficult without extensive cutting and filling. Designing the structure to conform to slope or shaping the land helps to overcome this limitation. An alternative is to lay out roads on included or nearby soils that are less sloping.

Rapid permeability in the substratum and excessive slope are severe limitations to use of these soils as a site for septic tank absorption fields. The soils are a poor filter of effluent, and ground-water contamination is a hazard. If the leach field is on steep slopes, effluent flows downhill and partially filtered effluent seeps out on the surface of hillsides. On gentler slopes, using serial distribution or laying out tile lines on the contour helps to ensure uniform distribution of effluent throughout the absorption field and to prevent ground-water contamination. An alternative is to place the absorption field on included soils, such as less sloping Berkshire soils, that are better suited than the Colton, Duxbury, and Adams soils to septic tank absorption fields.

Most areas of these soils are an important source of sand and gravel; however, numerous large stone and boulders are common in the substratum.

The capability subclass is 7s for the Colton soil, 6e for the Duxbury soil, and 7e for the Adams soil. The forestland ordination symbol is 3S for the Colton and Adams soils and 8R for the Duxbury soil.

380B—Colton-Duxbury-Dawson complex, 0 to 15 percent slopes

This map unit consists of very deep, nearly level to strongly sloping soils on outwash plains and on networks of kettles and kames. Slopes are mostly simple or complex. In most areas the Colton and

Duxbury soils are on 3 to 15 percent slopes. The Dawson soils range from 0 to 2 percent. Areas of this unit are 100 to 300 acres, but the range is 40 to 700 acres. The unit is about 35 percent excessively drained Colton soil, 30 percent well drained Duxbury soil, 25 percent Dawson soil, and 10 percent other soils. The Colton, Duxbury, and Dawson soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Colton soil—

Surface layer:
0 to 6 inches, dark reddish brown gravelly loamy sand

Subsoil: 6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum:
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the layers of the Duxbury soil—

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 14 inches, strong brown silt loam
14 to 24 inches, dark yellowish brown gravelly loam

Substratum:
24 to 72 inches, dark yellowish brown very gravelly coarse sand

Typical sequence, depth, and composition of the layers of the Dawson soil—

Surface layer:
0 to 5 inches, yellowish brown peat

Subsoil layer:
5 to 30 inches, black muck

Substratum:
30 to 72 inches, gray loamy sand

Included with these soils in mapping are small areas of moderately well drained Croghan soils in low-lying or concave positions. Also included are small areas of loamy Berkshire soils on valley sides and on tops of knolls and ridges and small areas of moderately well drained Crary soils and somewhat poorly drained Adirondack soils, which both have a dense and impermeable substratum, on lower backslopes. Also included are small included areas of shallow Lyman soils or exposed bedrock. Included areas range to 40 acres and make up about 10 percent of this unit.

Important properties of the Colton soil—

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer, extremely acid to strongly acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Duxbury soil—

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Dawson soil—

Permeability: Moderate or moderately rapid in the surface layer, moderately slow to moderately rapid in the underlying organic material, and rapid in the sandy substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic layers and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from September to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuitable for cultivated crops. Wetness on the very poorly drained Dawson soil and droughtiness and low fertility on the Colton soil are difficult to overcome.

These soils are poorly suited to hay and pasture. Maintaining proper stocking rates is important because in summer plant growth is slow on the droughty Colton soil and overgrazing is a hazard. Overgrazing can destroy pasture seeding and can cause an erosion hazard. Restricting livestock from pasture when the Dawson soil is saturated helps to prevent surface compaction, loss of soil tilth, and loss of productivity.

Potential productivity for eastern white pine on these soils is low to high. The seasonal high water table on the Dawson soil limits use of heavy equipment in spring and during other wet periods. Logging when the surface is dry or in winter when it is frozen reduces the problems from heavy equipment use. Droughtiness, or lack of adequate water holding capacity, on the Colton soil and the seasonal high water table on the Dawson soil cause an excessive seedling mortality rate. Timely planting when the soil is moist, but not wet, and selecting adaptable varieties help to reduce the seedling mortality rate. On the Dawson soil the windthrow hazard is moderate because the water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The Dawson soil is poorly suited to use as a site for dwellings with basements because of wetness. On the Colton and Duxbury soils excessive slope is a moderate limitation. Designing buildings to conform to slope or shaping the land helps to overcome this limitation. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

These soils are suited to local roads and streets if the wet Dawson soil can be avoided. In some map units avoiding the Dawson soil or wet inclusions could disrupt alignment. On the Colton and Duxbury soils excessive slope is a moderate limitation. Adapting road design to slope or landscaping and grading help to overcome slope. On the Dawson soil installing a drainage system helps to reduce wetness.

Rapid permeability in the substratum on both the Colton and Duxbury soils and wetness on the Dawson soil are severe limitations to use of these soils as a site for septic tank absorption fields. The Colton and Duxbury soils are a poor filter of effluent, and ground-water contamination is a hazard. On these soils extensive site alterations may be required to improve performance of the absorption field and to prevent ground-water contamination. The Dawson soil is unsuitable for absorption fields because of wetness. An alternative is to place the absorption field on included soils, such as Berkshire soils, that are more suitable than the Colton, Duxbury, and Dawson soils for septic tank absorption fields.

Most areas of these soils are an important source of sand and gravel; however, numerous large stones and boulders are in the substratum.

The capability subclass is 4s for the Colton soil, 3e for the Duxbury soil, and 5w for the Dawson soil. The forestland ordination symbol is 3S for the Colton soil, 8A for the Duxbury soil, and 2W for the Dawson soil.

380D—Colton-Duxbury-Dawson complex, 15 to 35 percent slopes

This map unit consists of very deep, moderately steep and steep soils on outwash plains and on networks of kettles and kames. Slopes are simple and complex. The Colton and Duxbury soils range from 15 to 35 percent. The Dawson soil is in depressions and range from 0 to 2 percent. Areas of this unit are 100 to 300 acres, but the range is 40 to 500 acres. The unit is about 35 percent excessively drained Colton soil, 35 percent well drained Duxbury soil, 20 percent Dawson soil, and 10 percent other soils. The Colton, Duxbury, and Dawson soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Colton soil—

Surface layer:
0 to 6 inches, dark reddish brown gravelly loamy sand

Subsoil:
6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum:
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the layers of the Duxbury soil—

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 14 inches, strong brown silt loam
14 to 24 inches, dark yellowish brown gravelly loam

Substratum:
24 to 72 inches, dark yellowish brown very gravelly coarse sand

Typical sequence, depth, and composition of the layers of the Dawson soil—

Surface layer:
0 to 5 inches, yellowish brown peat

Subsoil:
5 to 30 inches, black muck

Substratum:
30 to 72 inches, gray loamy sand

Included with these soils in mapping are small areas of moderately well drained Croghan soils in low-lying or concave positions. Also included are small areas of loamy Berkshire soils on valley sides and on tops of knolls and ridges. Also included, on lower backslopes, are small areas of moderately well drained Crary soils and somewhat poorly drained and poorly drained Adirondack soils, which both have a dense and impermeable substratum. Also included are small areas of shallow Lyman soils or exposed bedrock. Included areas range to 40 acres and make up about 10 percent of this unit.

Important properties of the Colton soil—

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer, extremely acid to strongly acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Duxbury soil—

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Dawson soil—

Permeability: Moderate or moderately rapid in the surface layer, moderately slow to moderately rapid in the organic subsoil, and rapid in the sandy substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic material and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from September to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuitable for cultivated crops because of steepness of slope, wetness on the Dawson soil, and droughtiness and low fertility on the Colton soil.

These soils are poorly suited to hay and pasture. Erosion is a severe hazard. Maintaining proper stocking rates is important because in summer plant growth is slow on the droughty Colton soil and overgrazing is a hazard. Overgrazing can destroy pasture seeding and can cause an erosion hazard. Restricting livestock from pasture when the Dawson soil is saturated helps to prevent surface compaction, loss of soil tilth, and loss of productivity.

Potential productivity for eastern white pine on these soils is low to high. The seasonal high water table on the Dawson soil limits heavy equipment use in spring and during other wet periods. Logging when the surface is dry or in winter when it is frozen reduces the problems from heavy equipment use. Droughtiness, or lack of adequate water holding capacity, on the Colton soil and the seasonal high water table on the Dawson soil increase the seedling mortality rate. Timely planting when the soil is moist, but not wet, and selecting adaptable species help to reduce the seedling mortality rate. On the Dawson soil the windthrow hazard is moderate because the water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

These soils are severely limited to use as a site for dwellings with basements because of excessive slope and, on the Dawson soil, the seasonal high water table. Cutbanks caving in is a hazard on the Colton and Duxbury soils during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins. An alternative is to build dwellings on included or nearby soils that are lesser sloping or drier than the Colton, Duxbury, and Dawson soils.

These soils are poorly suited to local roads and streets because of steepness of slope on the Colton and Duxbury soils and wetness on the Dawson soil. Without expensive cutting and filling steepness of slope disrupts grade and alignment standards. On the Dawson soil wetness also disrupts grade and alignment of roads. Local roads and streets could be constructed on other soils nearby.

Excessive slope and rapid permeability in the substratum on both the Colton and Duxbury soils and wetness on the Dawson soil are severe limitations to use of these soils as a site for septic tank absorption fields. The Colton and Duxbury soils are a poor filter of effluent, and ground-water contamination is a hazard. On the Colton and Duxbury soils, if the leach field is on steep slopes, effluent flows uncontrolled downhill and partially filtered effluent seeps out on the surface of hillsides; on gentler slopes, using serial distribution or laying out tile lines on the contour helps to ensure uniform distribution of effluent throughout the absorption field; extensive site alterations may be needed. The Dawson soil is unsuitable for septic tank absorption fields because of wetness. An alternative is to place the absorption field on included or nearby soils, such as Berkshire soils, that are more suitable than the Colton, Duxbury, and Dawson soils to septic tank absorption fields.

Most areas of these soils are an important source of sand and gravel; however, numerous large stones and boulders are common in the substratum.

The capability subclass is 7s for the Colton soil, 6e for the Duxbury soil, and 5w for the Dawson soil. The forestland ordination symbol is 3S for the Colton soil, 8R for the Duxbury soil, and 2W for the Dawson soil.

643C—Berkshire loam, 3 to 15 percent slopes, very bouldery

This is a strongly sloping, very deep, well drained soil on rounded tops and sides of ridges and hills. Boulders about 10 to 70 feet apart are scattered on the landscape. Boulders and stones cover 0.1 to 3 percent of the surface. Most areas are oval shaped and range from 40 to 100 acres.

Typical sequence, depth, and composition of the Berkshire soil—

Surface layer:
0 to 7 inches, dark brown loam

Subsoil:
7 to 11 inches, brown loam
11 to 30 inches, brown gravelly loam

Substratum:
30 to 72 inches, dark yellowish brown sandy loam

Included with this soil in mapping are small areas of Potsdam soils and moderately well drained Crary soils, both of which have very a firm, dense, and brittle substratum. Also included are some areas of poorly drained Lyme soils and very poorly drained Tughill soils in drainageways and depressions and on lower hillsides, moderately well drained Sunapee soils on hillsides, and small areas of very gravelly, excessively drained Colton soils. Included soils range to 40 acres and make up about 15 percent of this unit.

Important properties of the Berkshire soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland.

This soil is poorly suited to crops. Erosion is a hazard, especially on longer, steeper slopes. Stones and boulders on and immediately below the surface limit tillage.

This soil is poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for white pine on this soil is high. There are no limitations to woodland use and management, except that machine planting of seedlings is generally not feasible because stones and boulders are on or near the surface.

Slope is a moderate limitation to use of this soil as a site for dwellings with basements. Dwellings could be designed to conform to slope or built on less sloping, included soils. Large boulders on the surface impede excavation.

Slope and potential for frost action are moderate limitations to use of this soil as a site for local roads and streets. Routing roads to less sloping areas of the soil or cutting and filling help to overcome slope. Providing coarser subgrade or base material to frost depth helps to prevent frost action from heaving and buckling pavement.

Slope is a moderate limitation to use of this soil as a site for septic tank absorption fields. Slope causes unequal distribution of effluent to tile lines. Using serial distribution or laying out tile lines on the contour helps to ensure uniform distribution of effluent throughout the absorption field. An alternative is to place the septic system in less sloping areas.

The capability subclass is 6s. The forestland ordination symbol is 9A.

643D—Berkshire loam, 15 to 35 percent slopes, very bouldery

This is a moderately steep and steep, very deep, well drained soil on sides of ridges and hills and in networks of smaller ridges and hills. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas are oval shaped and range from 40 to 150 acres.

Typical sequence, depth, and composition of the Berkshire soil—

Surface layer:
0 to 7 inches, dark brown loam

Subsoil:
7 to 11 inches, dark brown loam
11 to 30 inches, brown gravelly loam

Substratum:
30 to 72 inches, dark yellowish brown sandy loam

Included with this soil in mapping are small areas of Potsdam soils and moderately well drained Crary soils, which have a very firm, dense, brittle substratum. Also included are some areas of poorly drained Lyme soils and very poorly drained Tughill soils in drainageways and depressions and on lower hillsides; areas of moderately well drained Sunapee soils on hillsides; and some small areas of very gravelly, excessively drained Colton soils. Included soils range to 40 acres and make up about 15 percent of this unit.

Important properties of the Berkshire soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland. A small acreage is pasture.

This soil is unsuited to crops because of steepness of slope, the erosion hazard, and boulders. Use of equipment is hazardous on these slopes; if equipment is used, erosion is a severe hazard. Stones and boulders on and immediately below the surface impede tillage.

This soil is not suited to hay because of stones and boulders. It is suited to pasture. Low soil reaction and low natural fertility are the main limitations. Overgrazing can destroy vegetative cover and can cause an erosion hazard. Adding lime and fertilizer according to soil tests helps to improve soil reaction and low natural fertility. Rotational grazing and annual mowing are important management practices. Proper stocking rates help to prolong pasture seedlings and to control erosion.

Potential productivity for trees on this soil is moderate or high. Sugar maple, American beech, and eastern white pine are common in woodlots. Eastern white pine, red pine, white spruce, and balsam fir are suitable for planting. In most areas machine planting of seedlings is not feasible because stones and boulders are on or near the surface.

Slope is a severe limitation to use of this soil as a site for dwellings with basements. Dwellings could be designed to conform to slope or built on included, less sloping soils. Large boulders in the soil impede excavation.

Slope is a severe limitation to use of this soil as a site for local roads and streets. Roads could be routed to included, less sloping areas of soils or rerouted around this soil. Frost action can cause cutbanks to slough and road surfaces to buckle. Vegetating cutbanks before fall helps to prevent sloughing in spring. Protecting roads with upslope ditches and adequate culverts helps to prevent frost action from buckling road pavements. Roads need an adequate subgrade.

This soil is unsuitable for septic tank absorption fields because of slope. The septic system could be placed on included or nearby areas of less sloping soils.

The capability subclass is 7s. The forestland ordination symbol is 9R.

644C—Berkshire-Lyme complex, rolling, very bouldery

This map unit consists of very deep, rolling soils on networks of small, rounded hills and swales. The well drained Berkshire soil is in higher, steeper, more convex positions, and the poorly drained Lyme soil is in concave positions. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Local relief is generally low, and slopes are complex, ranging from 5 to 15 percent. Areas are 80 to 300 acres, but the range is 40 to 500 acres. The unit is about 40 percent well drained Berkshire soil, about 25 percent poorly drained Lyme soil, and 35 percent other soils. The Berkshire and Lyme soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the Berkshire soil—

Surface layer:
0 to 7 inches, dark brown loam

Subsoil:
7 to 11 inches, brown loam
11 to 30 inches, brown gravelly loam

Substratum:
30 to 72 inches, dark yellowish brown sandy loam

Typical sequence, depth, and composition of the layers of the Lyme soil—

Surface layer:
0 to 3 inches, very dark gray sandy loam

Subsoil:
3 to 6 inches, grayish brown sandy loam
6 to 11 inches, dark grayish brown sandy loam
11 to 16 inches, brown cobbly sandy loam

Substratum:
16 to 24 inches, dark grayish brown and grayish brown gravelly sandy loam
24 to 72 inches, brown gravelly sandy loam

Included with these soils in mapping are small areas of very poorly drained Dawson and Tughill soils in deeper depressions. Also included are areas of moderately deep Tunbridge soils on bedrock-controlled benches and knolls, small areas of rock outcrops near Tunbridge soils, and small areas of soils that are more or less sloping than the Berkshire and Lyme soils. Also included are areas of sandy Adams soils and gravelly, sandy Colton soils on sides of valleys and in other areas subject to glaciofluvial influence. Included areas range to 40 acres and make up about 35 percent of this unit.

Important properties of the Berkshire soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Important properties of the Lyme soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid or strongly acid throughout
Erosion hazard: Severe
Depth to water table: From the surface to 1.5 feet below the surface from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are poorly suited to cultivated crops because of numerous boulders and stones on the surface. Removing stones and boulders would be too costly for crops normally grown in the area. This soil is especially hard to manage for cultivated crops because of complex topography and, on the Lyme soil, wetness.

This soil is poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are important management practices. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes. Restricting livestock from pasture is important when the Lyme soil is saturated. Animal traffic when these soils are wet causes surface compaction, loss of tilth, and loss of productivity.

Potential productivity for eastern white pine on these soils is high. Plant competition, the windthrow hazard, and the equipment limitation are management concerns on the Lyme soil. Replanting immediately after harvest, controlling forest openings after harvest, and eradicating undesirable species help to overcome plant competition. Windthrow is a problem on the Lyme soil because the water table limits root development. Minimizing stand openings created during harvesting and thereby shielding trees or, during reforestation, planting adaptable species that do not have tap roots helps to reduce windthrow. On the Lyme soil wetness limits equipment use. Logging in winter, when the ground is frozen, reduces the problems from heavy equipment use.

The seasonal high water table on the Lyme soil is a severe limitation to use of these soils as a site for dwellings with basements. On the Lyme soil installing foundation drains and sealing foundations help to prevent wet basements. Dwellings could be built on included areas of better drained Berkshire soils. On Berkshire and Lyme soils slope is a limitation for dwellings with basements. Land shaping and grading help to overcome slope. Erosion is a hazard in areas cleared for construction, but designing dwellings to conform to the natural slope and setting helps to minimize land shaping and to control erosion. Revegetating the soils during or soon after construction also helps to control erosion. Large boulders scattered on the soils impede excavation.

Slope, potential for frost action, and, on the Lyme soil, the seasonal high water table are the main limitations to use of these soils as a site for local roads and streets. Building streets and roads on the contour helps to overcome slope. Providing coarser grained subgrade or base material to frost depth and constructing ditches and road culverts to improve soil drainage near roads help to prevent wetness and frost action from buckling and heaving pavement.

The seasonal high water table on the Lyme soil is a severe limitation to use of these soils as a site for septic tank absorption fields. Installing a drainage system around the filter field and a diversion to intercept runoff from higher areas helps to reduce wetness. The absorption field could be placed on included areas of well drained Berkshire soils. Slope is also a limitation for septic tank absorption fields. Laying out distribution lines on the contour or using serial distribution helps to ensure uniform distribution of effluent throughout the absorption field.

The capability subclass is 6s for both Berkshire and Lyme soils. The forestland ordination symbol is 9A for the Berkshire soil and 8W for the Lyme soil.

644D—Berkshire-Lyme complex, hilly, very bouldery

This map unit consists of very deep, hilly soils on networks of rounded hills and swales. The well drained Berkshire soil is on the higher, steeper, more convex parts of the topography, and the poorly drained Lyme soil is in the concave part. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Local relief is generally low; slopes are complex. The Berkshire soil is on the convex parts of the landscape, and have a slope range of 15 to 35 percent. The Lyme soil is on flatter areas of the landscape, and have a slope range of 0 to 15 percent. Areas of this unit are 80 to 200 acres, but the range is 40 to 400 acres. The unit is about 45 percent well drained Berkshire soil, 25 percent poorly drained Lyme soil, and 30 percent other soils. The Berkshire and Lyme soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the Berkshire soil—

Surface layer:
0 to 7 inches, dark brown loam

Subsoil:
7 to 11 inches, brown loam
11 to 30 inches, brown gravelly loam

Substratum:
30 to 72 inches, dark yellowish brown sandy loam

Typical sequence, depth, and composition of the layers of the Lyme soil—

Surface layer:
0 to 3 inches, very dark gray sandy loam

Subsoil:
3 to 6 inches, grayish brown sandy loam
6 to 11 inches, dark grayish brown sandy loam
11 to 16 inches, brown cobbly sandy loam

Substratum:
16 to 24 inches, dark grayish brown and grayish brown gravelly sandy loam
24 to 72 inches, brown gravelly sandy loam

Included with this soil in mapping are small areas of very poorly drained Dawson and Tughill soils in deeper depressions. Also included are moderately deep

Tunbridge soils on bedrock-controlled benches and knolls, some small areas of rock outcrops near Tunbridge soils, and small areas of soils on greater slopes than those of the Berkshire and Lyme soils. Also included are some areas of sandy Adams soils and gravelly, sandy Colton soils on sides of valleys and adjacent to watercourses. Included areas range to 40 acres and make up about 30 percent of this unit.

Important properties of the Berkshire soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Important properties of the Lyme soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid or strongly acid throughout
Erosion hazard: Severe
Depth to water table: From the surface to 1.5 feet below the surface from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are poorly suited to cultivated crops because of steepness, numerous boulders and stones on the surface, complex topography, and, on the Lyme soil, wetness. Erosion is a severe hazard, and stone and boulder removal costs too much for crops normally grown in this area.

These soils are poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Managing stocking rates and brush control are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish the quantity and quality of forage plants and can cause an erosion hazard on steep slopes. Restricting animals from pasture when the Lyme soil is saturated helps to prevent surface compaction and loss of soil tilth and productivity.

Potential productivity for eastern white pine on these soils is high. On the Lyme soil plant competition, windthrow hazard, and the equipment limitation are management concerns. Replanting immediately after harvest, controlling forest openings after harvest, and eradicating undesirable species help to control plant competition. Windthrow is a problem on the Lyme soil because the high water table causes shallow rootedness and instability in high winds. Minimizing stand openings created during harvesting and thereby shielding the trees and planting adaptable species without taproots during reforestation help to reduce windthrow. Stoniness, slope on the Berkshire soil, and wetness on the Lyme soil limit use of equipment. Logging in winter, when the ground is frozen, reduces the problems from heavy equipment use.

Slope and the seasonal high water table on the Lyme soil are severe limitations to use of these soils as a site for dwellings with basements. Designing dwellings to conform to slope helps to overcome this limitation. On the Lyme soil installing foundation drains and sealing foundations help to prevent wet basements. Dwellings could be built on the better drained Berkshire soil where less sloping. Erosion is a hazard in areas cleared for construction, but designing dwellings to conform to slope and setting helps to minimize land shaping and to control erosion. Revegetating the soils during or soon after construction is completed also helps to control erosion. Occasional large boulders on the soils impede excavation.

Slope, frost action, and the seasonal high water table on the Lyme soil are the main limitations to use of these soils as a site for local roads and streets. Laying out roads and streets on the contour helps to overcome slope. In some areas cutting and filling is needed to maintain grade and alignment standards. Providing coarser grained subgrade or base material to frost depth and constructing ditches and road culverts to improve soil drainage help to prevent wetness and frost action from buckling and heaving pavement.

The seasonal high water table on the Lyme soil is a severe limitation to use of these soils as a site for septic tank absorption fields. Installing a drainage system around the filter field and a diversion to intercept runoff from higher areas helps to reduce wetness. On the well drained Berkshire soil, slope is a severe limitation. Laying out distribution lines on the contour or using serial distribution helps to ensure uniform distribution of effluent throughout the absorption field. Where slope is excessive, an alternative is to place the septic system on less sloping, included soils.

The capability subclass is 7s for the Berkshire soil and 7s for the Lyme soil. The forestland ordination symbol is 9R for the Berkshire soil and 8W for the Lyme soil.

709B—Adirondack-Tughill-Lyme complex, 0 to 8 percent slopes, very bouldery

This map unit consists of very deep, somewhat poorly drained and very poorly drained, nearly level and gently sloping soils formed in glacial till deposits in low positions between hills and ridges or in broad, beveled areas on gentle backslopes of large hills, on uplands. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of this unit have various shapes and are 100 to 500 acres, but the range is 40 to 1,000 acres. The unit is about 35 percent somewhat poorly drained Adirondack soil, 25 percent very poorly drained Tughill soil, about 20 percent poorly drained Lyme soil, and about 20 percent other soils. The Adirondack, Tughill, and Lyme soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Adirondack soil—

Surface layer:
0 to 2 inches, dark reddish brown slightly decomposed forest litter
2 to 3 inches, black highly decomposed organic material
3 to 8 inches, black fine sandy loam

Subsurface layer:
8 to 10 inches, gray stony fine sandy loam

Subsoil:
10 to 13 inches, dark reddish brown stony fine sandy loam
13 to 17 inches, dark reddish brown stony loam
17 to 22 inches, reddish brown stony sandy loam

Substratum:
22 to 72 inches, dark grayish brown stony sandy loam

Typical sequence, depth, and composition of the layers of the Tughill soil—

Surface layer:
0 to 4 inches, black muck
4 to 8 inches, black gravelly mucky sandy loam

Subsoil:
8 to 40 inches, grayish brown very gravelly sandy loam

Substratum:
40 to 72 inches, gray very gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Lyme soil—

Surface layer:
0 to 3 inches, very dark gray sandy loam

Subsoil:
3 to 6 inches, grayish brown sandy loam
6 to 11 inches, dark grayish brown sandy loam
11 to 16 inches, brown cobbly sandy loam

Substratum:
16 to 24 inches, dark grayish brown gravelly sandy loam
24 to 72 inches, brown gravelly sandy loam

Included with these soils in mapping are small areas of mucky Dawson and Loxley soils in pockets of accumulated organic material. Also included are small areas of well drained Berkshire soils on pronounced hummocks; areas of sandy Searsport and Naumburg soils in broad basins or on low terraces where flowing water deposited sands; and some areas, particularly at higher elevations, of well drained, moderately deep Tunbridge soils on small hillocks. Included areas range to 40 acres and make up about 20 percent of the map unit.

Important properties of the Adirondack soil—

Permeability: Moderate in the mineral part of the surface layer and in subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid or very strongly acid in the organic part of the surface layer, extremely acid to strongly acid in the upper part of the subsoil, very strongly acid or strongly acid in the lower part, and strongly acid or moderately acid in the substratum
Erosion hazard: Moderate
Depth to water table: At a depth of 0.5 to 1.5 feet from September to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Important properties of the Tughill soil—

Permeability: Moderate or moderately rapid in the organic part of the surface layer, moderate in the mineral part of the surface layer and in the subsurface layer, moderately slow in the subsoil, and slow in the substratum

Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to strongly acid in the surface and subsurface layers, extremely acid to moderately acid in the subsoil, and strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: From 1.0 foot above to 0.5 foot below the surface from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyme soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid or strongly acid throughout
Erosion hazard: Slight
Depth to water table: From the surface to 1.5 feet below the surface from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are in low-quality woodland.

These soils are poorly suited to cultivated crops. Stoniness and wetness are the main limitations.

These soils are poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing diminishes quantity and quality of forage plants.

Potential productivity for trees on these soils is low or moderate. In most years the soil is too wet and bouldery for machine planting of seedlings. Operating planting and harvesting equipment on saturated soils causes surface compaction. Logging when the ground is frozen or in late summer when the soil is relatively dry reduces problems from equipment use. The seedling mortality rate is excessive because the water table limits root development. Timely planting when the soils are moist, but not wet, helps to reduce the seedling mortality rate. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

These soils are unsuitable as a site for dwellings with basements because of severe wetness. Dwellings could be built on nearby or included soils, such as Berkshire soils, that are better suited than the Adirondack, Tughill, and Lyme soils to this use.

The seasonal high water table and potential for frost action are severe limitations to use of these soils as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

These soils are unsuitable to use as a site for septic tank absorption fields because of the seasonal high water table and slow permeability in the substratum. The septic system could be placed in small areas of somewhat poorly drained Adirondack soils. An alternative is to select nearby or included soils, such as Berkshire soils, that are well suited to septic tank absorption fields.

The capability subclass is 6s for the Adirondack, Tughill, and Lyme soils. The forestland ordination symbol is 3W for the Adirondack soil, 2W for the Tughill soil, and 8W for the Lyme soil.

741C—Potsdam-Tunbridge-Crary complex, 3 to 15 percent slopes, very bouldery

This map unit consists of well drained, very gently sloping to strongly sloping soils formed in glacial till on uplands. Typically, the very deep, well drained Potsdam soil is on smooth backslopes of hills and mountains; the moderately deep, well drained Tunbridge soil is on ridges, bedrock-controlled terraces, and upper backslopes; and the very deep, moderately well drained Crary soil is on smooth, upper footslopes and lower backslopes. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas of this unit are irregular in shape. Areas are 200 to 1,000 acres, but the range is 60 to 2,000 acres. The Potsdam, Tunbridge, and Crary soils are intermingled so closely that they could not be separated at the scale selected for mapping. The unit is about 30 percent Potsdam soil, 30 percent Tunbridge soil, 20 percent Crary soil, and 20 percent other soils and rock outcrops.

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:

9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong brown silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Crary soil—

Surface layer:
0 to 8 inches, dark brown coarse silt loam

Subsoil:
8 to 14 inches, dark brown coarse silt loam
14 to 20 inches, yellowish brown very fine sandy loam
20 to 24 inches, grayish brown very fine sandy loam

Substratum:
24 to 72 inches, brown stony fine sandy loam

Included with these soils in mapping are small areas of somewhat poorly drained and poorly drained Adirondack soils, poorly drained Lyme soils, and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of Lyman soils where bedrock is less than 20 inches deep, some small areas of rock outcrops near Lyman soils, and areas of very deep Berkshire soils where the substratum is less firm and dense than that in the Potsdam soil. Also included are areas of sandy Adams soils and sandy and gravelly Colton soils where flowing water deposited small pockets of stratified sand and gravel, some areas of more sloping soils, and small areas where the surface is clear of boulders and stones. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Crary soil—

Permeability: Moderate in the surface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 1.5 to 2 feet from February to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. A few areas are old meadows or clearings.

These soils are poorly suited to cultivated crops because of numerous boulders and stones on the surface and included areas of rock outcrops and shallow Lyman soils.

These soils are poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing on these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on these soils is moderate or high. Erosion is a hazard where logging operations or road and trail construction exposes the soil to runoff. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. Boulders on the surface hinder machine planting of trees.

Depth to bedrock on the Tunbridge soil, the seasonal high water table on the Crary and Potsdam soils, and excessive slope are the main limitations to use of these soils for dwellings with basements. Onsite investigation is needed to avoid blasting or excessive filling on the moderately deep Tunbridge soils and to find alternative, less sloping sites. On excessive slopes architectural choices are limited and erosion is a hazard on construction sites. Limiting areas disturbed during construction and stabilizing sites soon after construction is completed help to control erosion. On the Crary and Potsdam soils installing drains by footings and shaping the land to divert subsurface water and runoff from dwellings help to reduce wetness. Adequately sealing foundations helps to prevent wet basements. In some areas the surface needs to be cleared of boulders to establish a lawn on these soils.

Slope, potential for frost action, the seasonal high water table on the Crary and Potsdam soils, and moderate depth to bedrock on the Tunbridge soil all are moderate limitations to use of these soils as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and adapting road design to slope help to overcome slope. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Planning road grades and locations to avoid bedrock helps to facilitate road building and to minimize blasting and rock removal.

Wetness on the Crary soil, slow permeability in the substratum on the Crary and Potsdam soils, and moderate depth to bedrock on the Tunbridge soil are the main limitations to use of these soils as a site for septic tank absorption fields. Installing interceptor drains to divert ground water or using a specially designed or alternative system helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. An alternative is to place the septic system on included or nearby soils, such as Berkshire soils, that are deeper, more permeable, and more favorable than the Potsdam, Tunbridge, and Crary soils to septic tank absorption fields and that ensure uniform distribution of effluent throughout the absorption field.

The capability subclass is 6s for the Potsdam, Tunbridge, and Crary soils. The forestland ordination symbol is 3R for the Potsdam soil, 3A for the Tunbridge soil, and 3R for the Crary soil.

741D—Potsdam-Tunbridge complex, 15 to 35 percent slopes, very bouldery

This map unit consists of well drained, moderately steep and steep soils formed in glacial till on hilly uplands. Typically, the very deep Potsdam soil is on backslopes and side slopes of hills, valleys, and mountains and the moderately deep Tunbridge soil is on bedrock-controlled terraces, knolls, and ridges and on summits and upper backslopes of hills and mountains. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas of this unit are irregular in shape. Areas are 100 to 1,000 acres, but the range is 80 to 2,000 acres. The Potsdam and Tunbridge soils are intermingled so closely that they could not be separated at the scale selected for mapping. This unit is about 40 percent Potsdam soil, 35 percent Tunbridge soil, and about 25 percent other soils.

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:

0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Included with these soils in mapping are small areas of moderately well drained Crary soils, poorly drained Lyme soils, and very poorly drained Tughill soils on benches and footslopes, along drainageways, and in other concave areas. Also included are small areas of Lyman soils where bedrock is less than 20 inches deep, generally on crests and shoulders of ridges; areas of rock outcrops near Lyman soils; and areas of very deep Berkshire soils where the substratum is less firm and dense than that in the Potsdam soil. Also included are areas of sandy Adams soils and sandy and gravelly Colton soils on lower backslopes along stream valleys and some small areas where the surface is clear of boulders and stones. Included areas range to 40 acres and make up about 25 percent of this map unit.

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuited to cultivated crops because of excessive slope and many boulders and stones on the surface. Erosion is a severe hazard, and in places operating machinery across the slope is dangerous. Stone and boulder removal is too costly for crops normally grown in the area.

This soil is poorly suited to pasture. Boulders and stones and excessive slope severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on these moderately steep and steep slopes.

Potential productivity for trees on these soils is moderate. Erosion is a severe hazard where logging operations or road and trail construction exposes the soils to runoff. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. Boulders on the surface and steep slopes hinder machine planting of trees and other mechanized operations.

Excessive slope is a severe limitation to use of these soils as a site for dwellings with basements. Depth to bedrock on the Tunbridge soil and the seasonal high water table on the Potsdam soil are also limitations. An alternative is to build dwellings on included or nearby soils, such as Berkshire soils, that are less sloping and deeper to bedrock, are better drained, and have more favorable slopes than the Potsdam and Tunbridge soils.

Excessive slope is the main limitation to use of these soils as a site for local roads and streets. Potential for frost action, the seasonal high water table on the Potsdam soil, and moderate depth to bedrock on the Tunbridge soil are also limitations. Roads and streets could be routed around this unit or through it on more favorable, included soils, such as less sloping Berkshire soils.

Excessive slope, slow permeability in the substratum on the Potsdam soil, and moderate depth to bedrock on the Tunbridge soil are the main limitations to use of these soils as a site for septic tank absorption fields. The septic system could be placed on included or nearby soils, such as very deep, more permeable Berkshire soils on favorable slopes, that are better suited to septic tank absorption fields than the Potsdam and Tunbridge soils.

The capability subclass is 7s for the Potsdam and Tunbridge soils. The forestland ordination symbol is 3R for the Potsdam and Tunbridge soils.

743C—Potsdam very fine sandy loam, 3 to 15 percent slopes, very bouldery

This is a very deep, gently sloping and strongly sloping, well drained soil on side slopes of hills and in small stream valleys. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas of this unit are long and narrow or are irregular in shape. Areas are 100 to 600 acres, but the range is 40 to 1,000 acres.

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong brown silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Included with this soil in mapping are small areas of moderately well drained Crary soils on broad backslopes and somewhat poorly drained and poorly drained Adirondack soils on benches and footslopes, along drainageways, and in other slightly concave areas. Also included are small areas of moderately deep Tunbridge soils and shallow Lyman soils where bedrock is close to the surface, some small areas of rock outcrops, and areas of Berkshire soils where the substratum is less firm and dense than that in the Potsdam soil. Also included are sandy Adams soils and sandy and gravelly Colton soils where flowing water deposited small pockets of stratified sand and gravel, generally on lower backslopes or footslopes along stream valleys and some small areas where the surface is free of boulders and stones. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland.

This soil is poorly suited to cultivated crops because many boulders and stones are on the surface. Stone and boulder removal costs too much for the crops normally grown in the area.

This soil is poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on this soil is moderate. Erosion is a hazard where logging operations or road and trail construction exposes the soil to runoff or where roads are built on grades too steep. Laying out logging roads and skid trails on the contour, building water bars to protect roads and trails when not in use, and minimizing clearcutting help to control erosion. Boulders on the surface hinder machine planting.

Wetness is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings and shaping the land to move surface water away from dwellings help to reduce wetness. Adequately sealing foundations help to prevent wet basements. Excessive slope is a moderate limitation. Designing dwellings to conform to the natural slope or shaping the land and filling help to overcome this limitation. Erosion is a hazard in areas cleared during construction. Controlling runoff during construction and establishing a vegetative cover as soon as possible after construction help to control erosion. The surface needs to be cleared of boulders to establish a lawn on this soil.

Potential for frost action and seasonal wetness are severe limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Excessive slope is a moderate limitation. Constructing roads on the contour, land shaping and grading, and adapting road design to slope help to overcome this limitation.

Wetness and slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Providing interceptor or curtain drains to divert wetness, enlarging the absorption field, and placing a wide, deep trench below the distribution lines help to reduce wetness and to compensate for the slow permeability. Excessive slope is a moderate limitation. Placing tile lines on the contour and using serial distribution help to ensure uniform distribution of effluent throughout the absorption field. An alternative is to place the absorption field on included or nearby soils, such as less sloping Berkshire soils, that are better suited to septic tank absorption fields.

The capability subclass is 6s. The forestland ordination symbol is 3R.

743D—Potsdam very fine loam, 15 to 35 percent slopes, very bouldery

This is a well drained, moderately steep and steep soil formed in glacial till on long, smooth backslopes and on side slopes of hills, valleys, and mountains, on hilly uplands. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas of this soil are irregular in shape. Areas are 100 to 300 acres, and the range is 60 to 500 acres.

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Included with this soil in mapping are small areas of moderately well drained Crary soils, somewhat poorly drained and poorly drained Adirondack soils, and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are some small areas of moderately deep Tunbridge soils; small areas of Lyman soils where bedrock is less than 20 inches deep, generally on crests and shoulders of ridges; and some areas of rock outcrops near Lyman soils. Also included are areas of very deep Berkshire soils where the substratum is less firm and dense than that in the Potsdam soil, some small areas of soils that are on steeper slopes than those of the Potsdam soil, areas of sandy Adams soils and sandy and gravelly Colton soils on lower backslopes along stream valleys, and some small areas where the surface is free of boulders and stones. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland.

This soil is poorly suited to cultivated crops because of excessive slope and numerous boulders and stones on the surface. Erosion is a severe hazard and in places cross-slope operation of machinery is dangerous on these slopes. Stone and boulder removal is too costly for crops normally grown in the area.

This soil is poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on these moderately steep and steep slopes.

Potential productivity for sugar maple on this soil is moderate. Erosion is a severe hazard where logging operations or road and trail construction exposes the soil to runoff or where roads are built on grades too steep. Laying out logging roads and skid trails on the contour, building water bars to protect roads and trails when not in use, and minimizing clearcutting help to control erosion. Boulders on the surface hinder machine planting.

Excessive slope is a severe limitation to use of this soil as a site for dwellings with basements. The seasonal high water table is also a limitation. Dwellings could be built on included or nearby soils, such as Berkshire soils on more favorable slopes, that are less sloping and not as wet as the Potsdam soil.

Excessive slope is the main limitation to use of this soil as a site for local roads and streets. Potential for frost action and the seasonal high water table are also limitations. Changing the grade or alignment of roads or cutting and filling help to overcome slope. Extremely long cut and fill slopes that are difficult to stabilize need to be revegetated with timely applications of seed, fertilizer, and mulch. An alternative is to route roads and streets around this map unit or through it but on more favorable, included soils, such as less sloping Berkshire soils.

Excessive slope and the slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. An alternative is to place the absorption field on included or nearby soils, such as more permeable Berkshire soils on favorable slopes, that are better suited to septic tank absorption fields than the Potsdam soil.

The capability subclass is 7s. The forestland ordination symbol is 3R.

745C—Crary-Potsdam complex, 3 to 15 percent slopes, very bouldery

This map unit consists of very deep, gently sloping to strongly sloping soils on glacial till plains. Typically, the moderately well drained Crary soil is on footslopes, on lower side slopes, and in slightly concave areas. The well drained Potsdam soil is on upper side slopes and on convex knolls and hilltops. Boulders about 10 to 70 apart and stones cover 0.1 to 3 percent of the surface. Most areas of this unit are irregular in shape. Areas are 80 to 500 acres, but the range is 40 to 1,000 acres. The unit is about 35 percent Crary soil, 30 percent Potsdam soil, and 35 percent other soils. The Crary and Potsdam soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Crary soil—

Surface layer:
0 to 8 inches, dark brown coarse silt loam

Subsoil:
8 to 14 inches, dark brown coarse silt loam
14 to 20 inches, yellowish brown very fine sandy loam
20 to 24 inches, grayish brown very fine sandy loam

Substratum:
24 to 72 inches, brown stony fine sandy loam

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong brown silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Included with these soils in mapping are small areas of poorly drained Lyme soils and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are some small areas of mucky Loxley and Dawson soils in the lowest parts on the landscape, some small areas of Tunbridge soils where bedrock is less than 40 inches below the surface, and areas of Berkshire soils where the substratum is less firm and dense than that in the Crary and Potsdam soils. Also included are areas of sandy Adams soils and sandy and gravelly Colton soils on sides of small valleys where flowing water deposited small pockets of stratified sand and gravel and some small areas where the surface is free of boulders and stones. Included areas range to 40 acres and make up about 35 percent of this unit.

Important properties of the Crary soil—

Permeability: Moderate in the mineral surface soil and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 1.5 to 2 feet from February to May
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 1.5 to 2 feet from February to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland. A few areas are old meadows or clearings.

These soils are poorly suited to cultivated crops because of numerous boulders and stones on the surface and the erosion hazard.

This soil is poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on these soils is moderate or high. Erosion is a hazard where logging operations or road and trail construction exposes the soil to runoff. Laying out logging roads and skid trails on the contour, building water bars to protect roads and trails when not in use, and limiting clearcutting help to control erosion. Boulders on the surface hinder machine planting and some other mechanized operations.

Seasonal wetness is the main limitation to use of these soils as a site for dwellings with basements. Installing drains by footings and shaping the land to move surface water away from dwellings help to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Erosion is a hazard in more sloping areas cleared during construction. Establishing a vegetative cover as soon as possible after construction and controlling runoff during construction help to control erosion. In some areas boulders need to be cleared from the surface to establish a lawn.

Potential for frost action and seasonal wetness are limitations to use of these soils as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Erosion is a hazard during construction on the steeper sections of roads or in large cut and fill sections. Stabilizing disturbed areas with vegetation during or as soon as possible after construction helps to control erosion.

Slow permeability and seasonal wetness are the main limitations to use of these soils as a site for septic tank absorption fields. Providing interceptor drains to divert some wetness, enlarging the absorption field, and placing a wide, deep trench below the distribution lines help to reduce wetness and to compensate for the slow permeability. An alternative is to place the absorption field on nearby or included soils, such as Berkshire soils, that are better drained and more permeable than the Crary and Potsdam soils.

The capability subclass is 6s for the Crary and Potsdam soils. The forestland ordination symbol is 3R for the Crary and Potsdam soils.

747B—Crary-Adirondack complex, 0 to 8 percent slopes, very bouldery

This map unit consists of very deep, gently sloping to strongly sloping soils on glacial till plains. Typically, the moderately well drained Crary soil is on footslopes and lower side slopes and in slightly concave areas and the somewhat poorly drained Adirondack soil is on upper side slopes and on convex knolls and hilltops. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas of this unit are irregular in shape. Areas are 80 to 500 acres, but the range is 40 to 1,000 acres. The unit is about 35 percent Crary soil, 30 percent Adirondack soil, and 35 percent other soils. The Crary and Adirondack soils are intermingled so closely that they could not be separated at the scale used for mapping.

Typical sequence, depth, and composition of the layers of the Crary soil—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 14 inches, dark brown silt loam
14 to 20 inches, yellowish brown very fine sandy loam
20 to 24 inches, grayish brown very fine sandy loam

Substratum:
24 to 72 inches, brown stony fine sandy loam

Typical sequence, depth, and composition of the layers of the Adirondack soil—

Surface layer:
0 to 2 inches, slightly decomposed forest litter
2 to 3 inches, black highly decomposed organic material
3 to 8 inches, black fine sandy loam

Subsurface layer:
8 to 10 inches, gray stony fine sandy loam

Subsoil:
10 to 13 inches, dark reddish brown stony fine sandy loam
13 to 17 inches, dark reddish brown stony loam
17 to 22 inches, reddish brown stony sandy loam

Substratum:
22 to 72 inches, dark grayish brown stony sandy loam

Included with these soils in mapping are small areas of very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are some small areas of mucky Loxley and Dawson soils in the lowest parts of the landscape, some small areas of Tunbridge soils where bedrock is less than 40 inches below the soil surface, and some small areas of rock outcrops. Also included are some areas of Sunapee and Lyme soils where the substratum is less firm and dense than that in the Crary and Adirondack soils and some small areas where the surface is free of boulders and stones. Included areas range to 40 acres and make up about 35 percent of this unit.

Important properties of the Crary soil—

Permeability: Moderate in the surface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: At a depth of 1.5 to 2 feet from February to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Adirondack soil—

Permeability: Moderate in the mineral part of the surface layer and subsurface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid or very strongly acid in the organic surface layer, strongly acid in the subsurface layer, extremely acid to strongly acid in the upper part of the subsoil, very strongly acid or strongly acid in the lower part of the subsoil, and strongly acid or moderately acid in the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 0.5 to 1.5 feet from September to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. A few areas are old meadows or clearings.

These soils are poorly suited to cultivated crops because of many boulders and stones on the surface and wetness on the Adirondack soil. Erosion is a hazard on longer, steeper slopes.

These soils are poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for trees on these soils is moderate or low. Boulders on the surface hinder machine planting. In wetter months wetness on the Adirondack soil and some included soils limits trafficability and obstructs efficient skidding patterns. On the Adirondack soil plant competition on plantations is a management concern. Mechanical or chemical site preparation helps to reduce plant competition.

Wetness is the main limitation to use of these soils as a site for dwellings with basements. Installing drains by footings and shaping the land to divert subsurface water and runoff from dwellings help to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Dwellings could be built on included or nearby soils, such as Berkshire soils, that are better drained than the Crary and Adirondack soils. In some areas the surface needs to be cleared of boulders to establish lawns.

Potential for frost action and the seasonal high water table are limitations to use of these soils as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Erosion is a hazard during construction. Stabilizing disturbed or cut and fill areas with vegetation during or as soon as possible after construction helps to control erosion.

Wetness and slow permeability in the substratum are the main limitations to use of these soils as a site for septic tank absorption fields. Installing interceptor drains to divert ground water, enlarging the absorption field, and placing a wide, deep trench below the distribution lines help to reduce wetness and to compensate for the slow permeability. An alternative is to place the absorption field on nearby or included soils, such as Berkshire soils, that are better drained and more permeable than the Crary and Adirondack soils.

The capability subclass is 6s for the Crary and Adirondack soils. The forestland ordination symbol is 3W for the Crary and Adirondack soils.

807—Udorthents, mine waste

This map unit is dominantly very deep, nearly level to steep, very poorly drained to excessively well drained soils in piles of acidic tailings, shot rock, and rubble from iron mines and from excavated and quarried areas. One area of this unit is at Benson Mines, east of Star Lake, the largest open pit east of the Mesabi Range in Minnesota. The topography of this unit is irregular, and consists mainly of smoothed and unsmoothed piles and dumps. Slopes range from 0 to 25 percent. Some areas at the perimeter of open pits are subject to collapse and are dangerous. Areas of the unit are irregular in shape and range from 40 to 1,000 acres. The soils in this map unit have variable characteristics and properties and are classified above the series level.

These soils are highly variable; they do not have a typical sequence, depth, or composition of layers. In most areas, however, the soils are sandy loam, loamy sand, or loam and highly variable amounts of rock fragments ranging from gravel to stones.

Included with these soils in mapping are shallow, somewhat excessively drained Lyman soils on undisturbed knobs and crests of small hills. Also included are areas of sandy, somewhat poorly drained and poorly drained, very deep Naumburg soils in undisturbed depressions; areas of very deep, well drained, loamy Potsdam soils in undisturbed, convex areas; and some small areas that consist entirely of cobbles, stones, or boulders and that do not support vegetation. Also included, at the perimeters of open pits, are areas where slopes are nearly vertical. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of Udorthents, mine waste—

Permeability: Very slow to rapid throughout
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Extremely acid to strongly acid throughout
Erosion hazard: Moderate or severe
Depth to water table: Perched on the surface in places, but ranges from 2 feet to more than 6 feet below the surface between November and May
Depth to bedrock: Dominantly more than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: Variable

Areas of this soil are nearly barren, are sparse brush, or are in low-quality woodland.

These soils are poorly suited to agriculture. They are infertile, often droughty, and in most areas untraversable.

These soils have a highly variable suitability for forest management. In some areas trees grow well and logging equipment is usable; in other areas trees grow slowly, and open pits and open mine shafts prevent use of equipment.

In places these soils are suitable for urban uses. In most areas, however, they are unsuitable because of hazardous, broken topography, open pits and shafts, wetness, and depth to bedrock. Onsite investigation is needed in evaluating areas of these soils for any urban use.

The capability subclass is 7s. A forestland ordination symbol was not assigned.

831C—Tunbridge-Lyman complex, 3 to 15 percent slopes, very rocky

This map unit consists of moderately deep, shallow soils on rough, broken landscapes on bedrock-controlled uplands. Typically, the Tunbridge soil is on side slopes and the Lyman soil is on tops and shoulders of knolls and ridges. Scattered rock outcrops cover about 2 to 10 percent of the surface. Slopes are simple or complex. Most areas of this unit are broad and lobate. Areas are 300 to 1,000 acres, but the range is 80 to 2,000 acres. The unit is about 55 percent moderately deep, well drained Tunbridge soil; 20 percent shallow, somewhat excessively drained Lyman soil; and 25 percent other soils and rock outcrops. The Tunbridge and Lyman soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Included with these soils in mapping are small areas of very shallow, organic Ricker soils and very shallow mineral soils. Also included are some small areas of very deep Potsdam soils on smooth sloping backslopes, some small areas of very poorly drained Tughill soils and somewhat poorly drained and poorly drained Adirondack soils in low-lying positions, and some areas of sandy Adams soils and sandy and gravelly Colton soils along streams. Also included are small areas of steeper soils and rock outcrops and some areas where numerous boulders are on the surface. Included areas range to 40 acres and make up about 25 percent of this unit.

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuited to cultivated crops because rock outcrops and included areas of very shallow soils and boulders obstruct use of tillage and harvesting equipment. Also, droughtiness on the Lyman soil during much of the growing season impairs growth of most crops.

These soils are poorly suited to hay and pasture. Rock outcrops and included bouldery areas hinder use of most farm equipment. When the soils are droughty in summer, pasture is subject to overgrazing. Also, when the soils are wet and weak, animal traffic tends to shear easily and to destabilize the soils and erosion is a hazard. If unmanaged, grazing causes loss of desirable plants and excessive erosion is a hazard. On pasture, rotational grazing, proper stocking rates, and brush control are management concerns.

Potential productivity for trees on these soils is low or moderate. Rock outcrops impede use of planting and logging equipment. The Lyman soil tends to be droughty, and the seedling mortality rate is severe.

Planting seedlings in spring when the soil is still moist helps to increase the rate of seedling survival. On the Lyman soil shallow depth to bedrock restricts rooting depth of trees and windthrow is a severe hazard. Minimizing clearcutting and selecting naturally shallow-rooted trees help to reduce windthrow.

Depth to bedrock on the Tunbridge and Lyman soils is the main limitation to use of these soils as a site for dwellings with basements. Building above bedrock and landscaping with additional fill help to provide a suitable building site. Slope is also a limitation. Designing dwellings to conform to slope or shaping the land helps to overcome this limitation. An alternative is to build dwellings on included or nearby soils that are better suited to septic tank absorption fields.

Depth to bedrock on the Lyman soil is a severe limitation to use of these soils as a site for local roads and streets. Excessive slope, moderate depth to bedrock on the Tunbridge soil, and potential for frost action are also limitations. Changing grade and alignment helps to avoid rock removal and to minimize cutting and filling from excessive slope. In some areas blasting is needed. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Depth to bedrock on the Tunbridge and Lyman soils is a severe limitation to use of these soils as a site for septic tank absorption fields. The Tunbridge and Lyman soils both are a poor filter of effluent, and ground-water contamination and effluent seeping out at the surface are hazards. In some areas such special designs as mound systems, where the building code permits them, are needed. An alternative is to place the absorption field on included or nearby soils that are better suited to septic tank absorption fields.

The capability subclass is 6s for the Tunbridge and Lyman soils. The forestland ordination symbol is 3A for the Tunbridge soil and 2D for the Lyman soil.

831D—Tunbridge-Lyman complex, 15 to 35 percent slopes, very rocky

This map unit consists of moderately deep and shallow, strongly sloping to steep soils on networks of hills and ridges and on mountains on granitic bedrock-controlled uplands. Typically, the Tunbridge soil is on side slopes and shoulders of hills and ridges and the Lyman soil is on summits of hills and ridges. Scattered rock outcrops take in about 2 to 10 percent of the surface area. Slopes are simple or complex. Most areas of this unit are irregular in shape. Areas are 200 to 1,000 acres, but the range is 40 to more than 2,000 acres. The unit is about 50 percent moderately deep, well drained Tunbridge soil, 30 percent shallow, somewhat excessively drained Lyman soil, and 20 percent other soils and rock outcrops. The Tunbridge and Lyman soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Included with these soils in mapping, generally near rock outcrops, are small areas of very shallow mineral soils that are less than 10 inches deep over bedrock. Also included are areas of very shallow to moderately deep, organic Ricker soils; some small areas of excessive boulders and stones; and some areas of very poorly drained Tughill soils and somewhat poorly drained and poorly drained Adirondack soils in low-lying positions. Also included are areas of highly variable, mucky Borosaprists and mineral Fluvaquents in narrow troughs along floodplains; some areas of sandy Adams soils and sandy and gravelly Colton soils along streams; and areas of very deep Potsdam and Berkshire soils on footslopes where bedrock is deeper than 60 inches. Also included are areas of soils and rock outcrops that are both steeper than the Tunbridge and Lyman soils. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are forested.

These soils are unsuited to row crops because of steep slopes, rock outcrops, low available moisture capacity on the Lyman soil, and low soil fertility. Erosion is a severe hazard.

These soils are poorly suited to pasture because of steepness of slope, rock outcrops, low available water capacity, and low fertility. Excessive erosion is hazard. These soils need to be protected against overgrazing. Plants could stabilize these soils, but available moisture, natural fertility, and plant vigor are low and intense cropping is not practical. If plants die and the surface is bare, erosion is a severe hazard. Brush control is also a management concern.

Potential productivity for trees on these soils is low or moderate. Erosion is a hazard on bare soil. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. In some areas rock outcrops impede use of planting and logging equipment. On the droughty Lyman soil seedling mortality is a severe hazard. Planting seedlings in spring when the soil is still moist helps to increase seedling survival. On the shallow Lyman soil depth to bedrock restricts rooting depth of trees and windthrow is a severe hazard. Minimizing clearcutting and selecting naturally shallow-rooted trees help to reduce windthrow.

Depth to bedrock on both the Tunbridge and Lyman soils and excessive slope are the main limitations to use of these soils as a site for dwellings with basements. Building above bedrock and landscaping with additional fill help to overcome depth to bedrock. Structures could be designed to conform to slope. An alternative is to build on included or nearby soils deeper than the Tunbridge and Lyman soils.

Depth to bedrock on the Lyman soil and excessive slope are severe limitations to use of these soils as a site for local roads and streets. Moderate depth to bedrock on the Tunbridge soil and potential for frost action are also limitations. Changing grade and alignment is needed to avoid rock removal and to minimize cutting and filling. In some areas blasting is needed. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

These soils are unsuitable to use as a site for septic tank absorption fields because of slope and depth to bedrock. The absorption field could be placed on included or nearby soils that are better suited to this use.

The capability subclass is 7s for the Tunbridge and Lyman soils. The forestland ordination symbol is 3R for the Tunbridge soil and 2D for the Lyman soil.

831F—Tunbridge-Lyman complex, 35 to 60 percent slopes, very rocky

This map unit consists of very steep soils on backslopes and tops of large hills and mountains and on networks of small hills and ridges. Typically, the Tunbridge soil is on side slopes and footslopes of hills and ridges, and the Lyman soil is on tops and shoulders of hills and ridges. Scattered rock outcrops take in about 2 to 10 percent of the surface area. Most areas of this unit are long and narrow and are along hillsides. Areas are 100 to 500 acres, but the range is 40 to 700 acres. The unit is about 45 percent moderately deep, well drained Tunbridge soil, 30 percent shallow, somewhat excessively drained Lyman soil, and 25 percent other soils and rock outcrops. The Tunbridge and Lyman soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Included with these soils in mapping, generally near rock outcrops, are small areas of very shallow mineral soils less than 10 inches deep over bedrock. Also included are areas of very shallow to moderately deep, organic Ricker soils; some small areas of excessive boulders and stones; and areas of very poorly drained Tughill soils and somewhat poorly drained and poorly drained Adirondack soils in some low-lying positions. Also included are areas of highly variable, mucky Borosaprists and mineral Fluvaquents in narrow troughs along floodplains; areas of sandy Adams soils and sandy and gravelly Colton soils along streams; areas of very deep Potsdam and Berkshire soils on footslopes where bedrock is deeper than 60 inches; and small areas of bedrock scarps. Included areas range to 40 acres and make up about 25 percent of this unit.

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

These soils are forested.

These soils are unsuited to agriculture because of excessive steepness. Numerous rock outcrops are also a limitation. Very steep slopes and rock outcrops limit use of farm equipment. These soils are too steep for pasture. If they are wet and very weak, animal traffic can easily shear and dislodge them and erosion is a hazard. These soils have little natural fertility and available water holding capacity.

Potential productivity for trees on these soils is low or moderate. Erosion is a severe hazard on bare soil. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. Avoiding clearcutting also helps to prevent excessive erosion. Rock outcrops and very steep slopes are hazardous to use of planting and logging equipment. On the droughty Lyman soil, the seedling mortality rate is severe. Planting seedlings in spring when the soil is still moist helps to increase the rate of seedling survival. On the shallow Lyman soil depth to bedrock restricts the rooting depth of trees, and windthrow is a severe hazard. Minimizing clearcutting and thinning and selecting naturally shallow-rooted trees help to reduce windthrow.

These soils are unsuited to urban development because of slope, rock outcrops, and shallow depth to bedrock. However, included or nearby soils that are less sloping and more favorable than the Tunbridge and Lyman soils, such as Potsdam soils, could be used for most urban development.

The capability subclass is 7s for the Tunbridge and Lyman soils. The forestland ordination symbol is 3R for the Tunbridge soil and 2R for the Lyman soil.

833C—Tunbridge-Adirondack-Lyman complex, rolling, very bouldery

This map unit consists of nearly level to steep, shallow to very deep soils formed in glacial till on tops and intervening basins within networks of low hills. Typically, the moderately deep, well drained Tunbridge soil and the shallow, somewhat excessively drained Lyman soil are on tops and sides of hummocks or small knolls. The very deep, somewhat poorly drained Adirondack soil is in depressions between knolls. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. The unit is about 55 percent Tunbridge soil, 25 percent Adirondack soil, 10 percent Lyman soil, and 10 percent other soils and rock outcrops. Most areas of this unit are irregular in shape. Areas are 200 to 1,000 acres, but the range is 100 to 1,500 acres. Slopes generally are complex and range from 0 to 25 percent, but do not exceed 15 percent on the Adirondack soil. The Tunbridge, Adirondack, and Lyman soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Adirondack soil—

Surface layer:
0 to 2 inches, slightly decomposed forest litter
2 to 3 inches, black highly decomposed organic matter
3 to 8 inches, black fine sandy loam

Subsurface layer:
8 to 10 inches, gray stony fine sandy loam

Subsoil:
10 to 13 inches, dark reddish brown stony fine sandy loam
13 to 17 inches, dark reddish brown stony loam
17 to 22 inches, reddish brown stony sandy loam

Substratum:
22 to 72 inches, dark grayish brown stony sandy loam

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Included with this soil in mapping are small areas of moderately well drained Crary and Sunapee soils on strongly sloping knolls. Also included are areas of mucky, very poorly drained Loxley and Dawson soils in low depressions, areas of sandy Adams soils on narrow terraces along streams, and some small areas of exposed bedrock. Also included are small areas of steeper soils and bedrock scarps. Included areas range to 40 acres and make up about 10 percent of this unit.

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Adirondack soil—

Permeability: Moderate in the mineral part of the surface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid or very strongly acid in the organic surface layer, extremely acid to strongly acid in the upper part of the subsoil, very strongly acid or strongly acid in the lower part of the subsoil, and strongly acid or moderately acid in the substratum
Erosion hazard: Moderate
Depth to water table: Perched at a depth of 0.5 to 1.5 feet below the surface from September to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are in low-quality woodland.

These soils are poorly suited to cultivated crops because of numerous boulders on the surface, wetness on the Adirondack soil, rolling slopes on the Tunbridge and Lyman soils, shallow depth to bedrock on the Lyman soil, and rock outcrops.

These soils are poorly suited to pasture and hay because of numerous boulders on the surface, wetness on the Adirondack soil, and droughtiness on the Lyman soil. Wetness on the Adirondack soil limits the season the soil can be used as pasture. Animal traffic on the Tunbridge, Adirondack, and Lyman soils when wet destabilizes them. If the Lyman and Tunbridge soils are grazed when wet or are overgrazed, erosion is a hazard. Restricting animals from pasture in spring and fall, maintaining proper stocking rates, and using rotational grazing between pastures help to prolong pasture seedlings and to control erosion.

Potential productivity for trees on these soils is low or moderate. On the Adirondack soil, deep rutting is a hazard if the soil is used for skidder traffic during wetter times of the year. On the Tunbridge and Lyman soils, erosion is a hazard, especially in steeper areas. If log skidders erode and rut the soil, runoff collects in and erodes the ruts into gullies. On the shallow Adirondack soil, erosion is a severe hazard and logging in winter when the ground is frozen helps to control erosion and to prevent rutting and tearing up the surface. Constructing logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. Shallow depth to bedrock on the Lyman soil and the high water table on the Adirondack soil limit root development, and windthrow is a hazard on these soils. Minimizing clearcutting helps to reduce windthrow and to control erosion.

These soils are poorly suited to use as a site for dwellings with basements. They are excessively wet and steep or are too shallow to bedrock for dwellings with basements. Dwellings could be built on nearby or included, more favorable soils, such as Sunapee soils, which have a seasonal high water table but are better suited to this use than the Tunbridge, Adirondack, and Lyman soils.

These soils are poorly suited to use as a site for local roads and streets because of excessive slope, potential for frost action, excessive wetness, shallowness to bedrock, and rock outcrops. Building on raised fill material and installing adequate drainage help to reduce wetness, or wet sites could be avoided. Changing grade and alignment or blasting helps to overcome problems from depth to bedrock, or sites with shallow depth to bedrock could be avoided. Constructing roads on the contour, cutting and filling to control grade, and changing road alignment help to overcome slope. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

These soils are unsuitable to use as a site for septic tank absorption fields because of excessive wetness, shallow depth to bedrock, and excessive slope. The absorption field could be placed on more favorable, deeper, drier, and less sloping included or nearby soils, such as Sunapee soils, that have a seasonal high water but are better suited to septic tank absorption fields than the Tunbridge, Adirondack, and Lyman soils.

The capability subclass is 6s for the Tunbridge, Adirondack, and Lyman soils. The forestland ordination symbol is 3A for the Tunbridge soil, 3W for the Adirondack soil, and 2D for the Lyman soil.

835C—Tunbridge-Borosaprists-Ricker complex, rolling, very rocky

This map unit consists of nearly level to steep, very shallow to very deep soils formed in glacial till and in organic deposits on broad valley floors. Typically, the moderately deep, well drained Tunbridge soil is on strongly sloping to steep bedrock-controlled knolls, small hills, and ridges, which protrude through nearly level, wet organic deposits, generally on valley floors mapped predominantly as very poorly drained Borosaprists. The Ricker soil is very shallow to moderately deep, well drained, and organic. It is on side slopes of small, bedrock-controlled hills and ridges, generally near the Tunbridge soil. Scattered rock outcrops cover about 2 to 10 percent of the surface. The unit is about 45 percent Tunbridge soil, 20 percent Borosaprists, 15 percent Ricker soil, and 20 percent other soils and rock outcrops. Most areas of this unit are irregular in shape. Areas are 200 to 1,000 acres, but the range is 100 to 1,500 acres. Slopes are generally complex and range from 0 to 25 percent. Borosaprists range from 0 to 1 percent slope. The

Tunbridge soil, Borosaprists, and the Ricker soil are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Borosaprists are highly variable and therefore do not have a typical sequence of layers. However, in most areas more than 16 inches of black organic material overlies sandy loam. Bedrock is generally at a depth of more than 60 inches.

Typical sequence, depth, and composition of the layers of the Ricker soil—

Surface layer:
0 to 1 inch, dark yellowish brown slightly decomposed organic material (peat)

Subsoil:
1 to 3 inches, dark yellowish brown moderately decomposed organic material (mucky peat)

Substratum:
3 to 4 inches, very dark grayish brown loamy sand

Bedrock:
4 inches, granitic gneiss

Included with these soils in mapping are small areas of moderately well drained Crary and Sunapee soils on slight benches, areas of poorly drained Lyme soils and somewhat poorly drained and poorly drained Adirondack soils, and areas of very poorly drained Tughill soils on footslopes and toeslopes of surrounding uplands and on slight hummocks on broad valley floors. Also included are small areas of shallow Lyman soils where bedrock is less than 20 inches below the surface, commonly near rock outcrops; areas of sandy Adams soils on narrow terraces along streams; and some areas of bedrock scarps. Included areas range to 40 acres and make up about 20 percent of this unit.

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of Borosaprists—

Permeability: Moderately slow to moderately rapid in the organic material and moderately slow to rapid in the mineral substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic material and very strongly acid to slightly acid in the mineral substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from October to July
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Ricker soil—

Permeability: Moderately rapid in the organic layers and moderate or moderately rapid in the mineral substratum
Available water capacity (average for a 40-inch soil profile): Very low to high
Soil reaction: Extremely acid in the organic layers and extremely acid to very strongly acid in the mineral substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 2 to 26 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are in low-quality woodland or in brushland.

These soils are unsuited to cultivated crops because of excessive wetness on Borosaprists, the rolling topography on the Tunbridge and Ricker soils, shallow depth to bedrock on the Ricker soil, and rock outcrops.

These soils are poorly suited to pasture or hay because of excessive wetness on Borosaprists and fragility on Borosaprists and the Ricker soil. Wetness on Borosaprists limits the season they can be used as pasture; animal traffic destabilizes these organic soils when wet and very weak. If the Tunbridge and Ricker soils are grazed when wet or overgrazed at other times, erosion is a hazard.

Potential productivity for trees on this soil is low or moderate. On the shallow and very shallow Ricker soil, little moisture is available for much of the year and the seedling mortality rate is excessive. The seedling mortality rate is also excessive on wet Borosaprists. Timely planting when the soils are moist, but not wet, and selecting adaptable varieties help to reduce the seedling mortality rate. Shallow depth to bedrock on the Ricker soil and the seasonal high water table on Borosaprists limit root development, and the windthrow hazard is severe on these soils. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. On Borosaprists the seasonal high water table limits use of heavy equipment in spring and during other wet periods. Logging when the surface is dry or in winter when it is frozen reduces the problems from heavy equipment use.

These soils are unsuitable to use as a site for dwellings with basements. They are excessively wet, excessively steep, or too shallow to bedrock for this use. Dwellings could be built on more favorable, nearby or included soils, such as Sunapee soils, which have a seasonal high water table but are better suited to this use than the Tunbridge soil, Borosaprists, and the Ricker soil.

These soils are poorly suited to local roads and streets because of excessive slope, potential for frost action, excessive wetness, shallowness to bedrock, and rock outcrops. Changing grade and alignment or blasting helps to overcome problems from bedrock, or sites with shallow depth to bedrock can be avoided. Constructing roads on the contour, cutting and filling to control grade, and changing alignment help to overcome slope. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

These soils are unsuitable to use as a site for septic tank absorption fields because of excessive wetness, shallow depth to bedrock, and excessive slope. The absorption field could be placed on more favorable, deeper, drier, and less sloping included or nearby soils, such as Sunapee soils, which have a seasonal high water table but are better suited to septic tank absorption fields.

The capability subclass is 6s for the Tunbridge soil, 5w for Borosaprists, and 7s for the Ricker soil. The forestland ordination symbol is 3A for the Tunbridge soil and 2D for the Ricker soil. Borosaprists were not assigned an ordination symbol.

861C—Lyman-Ricker-Rock outcrop complex, 3 to 15 percent slopes, very bouldery

This map unit consists of gently sloping and strongly sloping, very shallow and shallow soils and Rock outcrop on ridges and on the upper backslopes and tops of hills and mountains. Boulders and stones occupy 0.1 to 3 percent of the surface. Areas of this unit are 100 to 300 acres, but the range is 40 to 700 acres. The unit is about 45 percent somewhat excessively drained, shallow Lyman soil; 20 percent well drained, very shallow and shallow Ricker soil; 20 percent Rock outcrop; and 15 percent other soils. The Lyman and Ricker soils and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Ricker soil—

Surface layer:
0 to 1 inch, dark yellowish brown slightly decomposed organic material (peat)

Subsoil:
1 to 3 inches, dark yellowish brown moderately decomposed organic material (mucky peat)

Substratum:
3 to 4 inches, very dark grayish brown loamy sand

Bedrock:
4 inches, granitic gneiss

Included with these soils and Rock outcrop in mapping are small areas of very deep Potsdam soils and moderately deep Tunbridge soils. Also included are small areas of very deep Berkshire and Colton soils on side slopes of well defined stream channels; some small areas of very poorly drained, moderately deep organic soils; and some small areas of poorly drained and very deep Lyme soils, somewhat poorly drained and poorly drained Adirondack soils, and very poorly drained Tughill soils. Included areas range to 40 acres and make up about 15 percent of this unit.

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Ricker soil—

Permeability: Moderately rapid in the organic layers and moderate or moderately rapid in the mineral substratum
Available water capacity (average for a 40-inch soil profile): Very low to high
Soil reaction: Extremely acid in the organic layers and extremely acid to very strongly acid in the mineral substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 2 to 20 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuitable for cultivation because of shallowness to bedrock on both the Ricker and Lyman soils and numerous boulders on the surface. Equipment use is not practical on these soils.

These soils are unsuitable to hay and pasture because of shallow depth to bedrock on the Lyman and Ricker soils, rock outcrops, numerous boulders on the surface, and the erosion hazard. The Ricker soil is very fragile and is subject to mechanical abrasion and, on pasture, to shearing from animal traffic. If the Ricker soil is disturbed, erosion down to bedrock is a hazard. These soils, which have numerous boulders and included scarps, are untraversable.

Potential productivity for trees on these soils is low. These very shallow and shallow soils have little available moisture for much of the year. The seedling mortality rate can be excessive because of droughtiness. Timely planting when the soil is moist, but not wet, and selecting adaptable species help to reduce the seedling mortality rate. The windthrow hazard is severe because shallow depth to bedrock limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

These soils are unsuited to use as a site for dwellings with basements. Shallow depth to bedrock and rock outcrops impede excavations. Dwellings could be built on nearby or included, more favorable soils, such as Potsdam soils, that have few limitations to this use.

These soils are poorly suited to use as a site for local roads and streets because of shallow depth to bedrock, rock outcrops, and scattered escarpments. In many areas blasting is needed in cutting and filling to control grade and alignment. However, some included soils are better suited to local roads and streets.

These soils are too shallow to bedrock for use as a site for septic tank absorption fields. These very shallow and shallow soils are a poor filter of sewage effluent. Partially filtered sewage effluent can either flow through a crack or fissure in bedrock and contaminate ground water or it can seep out at the surface and contaminate surface water. The absorption field could be placed on included or nearby soils that are more favorable to septic tank absorption fields.

The capability subclass is 6s for the Lyman soil, 7s for the Ricker soil, and 8 for Rock outcrop. The forestland ordination symbol is 2D for the Lyman and Ricker soils. Rock outcrop was not assigned an ordination symbol.

861D—Lyman-Ricker-Rock outcrop complex, 15 to 35 percent slopes, very bouldery

This map unit consists of moderately steep and steep, very shallow and shallow soils and Rock outcrop on ridges and on upper backslopes and tops of hills and mountains. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of this unit are 100 to 400 acres, but the range is 40 to 1,000 acres. The unit is about 45 percent somewhat excessively drained, shallow Lyman soil; 20 percent well drained, very shallow and shallow Ricker soil; 20 percent Rock outcrop; and 15 percent other soils. The Lyman and Ricker soils and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Ricker soil—

Surface layer:
0 to 1 inch, dark yellowish brown slightly decomposed organic material (peat)

Subsoil:
1 to 3 inches, dark yellowish brown moderately decomposed organic material (mucky peat)

Substratum
3 to 4 inches, very dark grayish brown loamy sand

Bedrock:
4 inches, granitic gneiss

Included with these soils in mapping are small areas of very deep Potsdam soils and moderately deep Tunbridge soils. Also included are small areas of very deep Berkshire and Colton soils on side slopes along well defined stream channels, some small areas of bedrock escarpments, and some areas that are less sloping than the Lyman and Ricker soils. Also included are some small areas of very poorly drained, moderately deep organic soils in depressions and some small areas of poorly drained, very deep Tughill soils. Included areas range to 40 acres and make up about 15 percent of this unit.

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Ricker soil—

Permeability: Moderately rapid in the organic layers and moderate or moderately rapid in the mineral substratum
Available water capacity (average for a 40-inch soil profile): Very low to high
Soil reaction: Extremely acid in the organic layers and extremely acid to very strongly acid in the mineral substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 2 to 20 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuitable for cultivation because of the erosion hazard, steepness, shallowness to bedrock on the Ricker and Lyman soils, and numerous boulders on the surface. Use of equipment is not practical on these soils.

These soils are unsuitable for hay and pasture because of the hazard of erosion, many boulders on the surface, shallow depth to bedrock on the Lyman and Ricker soils, and rock outcrops. The Ricker soil is very fragile and is subject to mechanical abrasion and on pasture is easily sheared from animal traffic. If the Ricker soil is disturbed, erosion down to bedrock is a hazard. These soils have numerous boulders and escarpments, and are untraversable.

Potential productivity for trees on these soils is low. These shallow and very shallow soils have little available moisture much of the year. Erosion is a hazard. Laying out roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. The seedling mortality rate is excessive because of droughtiness. Timely planting when the soil is moist, but not wet, and selecting adaptable species help to reduce the seedling mortality rate. The windthrow hazard is severe because depth to bedrock limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

These soils are unsuited to use as a site for dwellings with basements. Excavation is difficult because of shallow depth to bedrock and rock outcrops. Excessive slope is also a limitation. Dwellings could be built on nearby or included, more favorable soils, such as moderately sloping Potsdam soils, that have few limitations to this use.

These soils are poorly suited to local roads and streets because of very shallow and shallow depth to bedrock, rock outcrops, and scattered escarpments. Excessive slope is also a limitation. In some areas blasting is needed in cutting and filling to control grade and alignment. An alternative is to lay out local roads and streets on included soils that are better suited to this use.

These soils are too shallow to bedrock for use as a site for septic tank absorption fields. The soils are a poor filter of sewage effluent. Partially filtered effluent can either flow through a crack or fissure in bedrock and contaminate ground water or it can seep out at the surface and contaminate surface water. Excessive slope is also a limitation. The absorption field could be placed on included or nearby soils that are more favorable to this use.

The capability subclass is 7s for the Lyman and Ricker soils and 8 for Rock outcrop. The forestland ordination symbol is 2D for the Lyman and Ricker soils. Rock outcrop was not assigned an ordination symbol.

861F—Lyman-Ricker-Rock outcrop complex, 35 to 60 percent slopes, very bouldery

This map unit consists of steep and very steep, very shallow and shallow soils and Rock outcrop on ridges and on the steepest parts of upper backslopes of hills and mountains. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of this unit are 100 to 200 acres, but the range is 40 to 400 acres. The unit is about 40 percent somewhat excessively drained, shallow Lyman soil; 25 percent well drained, very shallow and shallow Ricker soil; 20 percent Rock outcrop; and 15 percent other soils. The Lyman and Ricker soils and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Ricker soil—

Surface layer:
0 to 1 inch, dark yellowish brown slightly decomposed organic material (peat)

Subsoil:
1 to 3 inches, dark yellowish brown moderately decomposed organic material (mucky peat)

Substratum:
3 to 4 inches, very dark grayish brown loamy sandy

Bedrock:
4 inches, granitic gneiss

Included with these soils in mapping are small areas of very deep Potsdam soils and moderately deep Tunbridge soils. Also included are some less sloping areas; some small areas of very poorly drained, moderately deep organic soils in depressions; and small areas of poorly drained, very deep Lyme soils, somewhat poorly drained and poorly drained, very deep Adirondack soils, and very poorly drained, very deep Tughill soils in concave areas. Included areas range to 40 acres and make up about 15 percent of this unit.

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Ricker soil—

Permeability: Moderately rapid in the organic layers and moderate or moderately rapid in the mineral substratum
Available water capacity (average for a 40-inch soil profile): Very low to high
Soil reaction: Extremely acid in the organic layers and extremely acid to very strongly acid in the mineral substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 2 to 20 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuitable for agriculture because of the severe erosion hazard, extreme slope, excessive rock outcrops, droughtiness, and numerous boulders on the surface.

Potential productivity for trees on these soils is low. Erosion is a severe hazard. Laying out roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. In some areas equipment use is impractical or hazardous because of excessive slope. The seedling mortality rate can be excessive because of droughtiness. Timely planting when the soil is moist, but not wet, and selecting adaptable species help to reduce the seedling mortality rate. The windthrow hazard is moderate because depth to bedrock limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

These soils are unsuited to use as a site for urban development because of excessive slope, rock outcrops, and shallowness to bedrock. Included or nearby, less sloping, more favorable soils could be used for urban development. For example, less sloping Potsdam soils have fewer limitations than the Lyman and Ricker soils for most urban development.

The capability subclass is 7s for the Lyman soil and 8 for the Ricker soil and Rock outcrop. The forestland ordination symbol is 2R for the Lyman and Ricker soils. Rock outcrop was not assigned an ordination symbol.

891F—Rock outcrop-Ricker-Lyman complex, 35 to 60 percent slopes, very bouldery

This map unit consists of steep and very steep, very shallow and shallow soils and rock outcrops on ridges and the steepest parts of upper backslopes of hills and mountains. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of this unit are 100 to 200 acres, but the range is 40 to 400 acres. The unit is about 45 percent Rock outcrop; 20 percent well drained, very shallow and shallow Ricker soil; 20 percent somewhat excessively drained, shallow Lyman soil; and 15 percent other soils. Areas of Rock outcrop and the Lyman and Ricker soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Ricker soil—

Surface layer:
0 to 1 inch, dark yellowish brown slightly decomposed organic material (peat)

Subsoil:
1 to 3 inches, dark yellowish brown moderately decomposed organic material (mucky peat)

Substratum:
3 to 4 inches, very dark grayish brown loamy sand

Bedrock:
4 inches, granitic gneiss

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Included with Rock outcrop and these soils in mapping are small areas of very deep Potsdam and Crary soils and moderately deep Tunbridge soils. Also included are some less sloping areas. Included areas range to 40 acres and make up about 15 percent of this unit.

Important properties of the Ricker soil—

Permeability: Moderately rapid in the organic layers and moderate or moderately rapid in the mineral substratum
Available water capacity (average for a 40-inch soil profile): Very low to high
Soil reaction: Extremely acid in the organic layers and extremely acid to very strongly acid in the mineral substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 2 to 20 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches

Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are sparse woodland.

These soils are unsuitable for agriculture because of excessive rock outcrops, the severe erosion hazard, extreme slope, droughtiness, and numerous boulders on the surface.

Potential productivity for trees on these soils is low because of rock outcrops and very shallow and shallow soils. Erosion is a severe hazard. Laying out roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. In some areas equipment use is impractical or hazardous because of excessive slope. The seedling mortality rate is excessive because of droughtiness. Timely planting when the soil is moist, but not wet, and selecting adaptable varieties help to reduce the seedling mortality rate. Windthrow is a moderate hazard because depth to bedrock limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

These soils are unsuited to urban development because of rock outcrops, shallowness to bedrock, and excessive slope. Included or nearby, less sloping, more favorable soils could be used for urban development. For example, less sloping Potsdam soils have fewer limitations than the Ricker and Lyman soils for most urban development.

The capability subclass is 8 for Rock outcrop and the Ricker soil and 7s for the Lyman soil. The forestland ordination symbol is 2R for the Ricker and Lyman soils. Rock outcrop was not assigned an ordination symbol.

AaB—Adams sand, 2 to 8 percent slopes

This is a very deep, gently sloping, somewhat excessively drained soil on rises, on broad hilltops, and in other elevated areas on sand plains and other sandy deposits. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers in the Adams soil—

Surface layer:
0 to 7 inches—dark brown sand

Subsurface layer:
7 to 8 inches—pinkish gray sand

Subsoil:
8 to 13 inches—dark brown and yellowish red loamy sand
13 to 20 inches—strong brown sand

Substratum:
20 to 72 inches—light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are small areas of Flackville soils near margins of lake plains and marine plains, where underlying clay deposits are within 20 to 40 inches of the surface; areas of loamy Berkshire, Potsdam, and Pyrities soils on knolls commonly of stony glacial till; and some areas of gravelly Colton and Waddington soils. A few small areas of sandy Udipsamments or Dune land are also included. Included areas range to 6 acres and make up about 20 percent of the map unit.

The important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Moderate
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are forested. Some cleared areas are reverting to brush or woodland or are barren. A few areas are used for agriculture.

This soil is poorly suited to cultivated crops. Droughtiness is a major problem because the sandy textures of this soil hold little water available for plants. The soil is also subject to wind erosion and has little natural fertility. Planting long-term sod crops and planting and maintaining windbreaks help to control wind erosion. Adding manure, lime, and fertilizer according to soil tests helps to improve fertility. Irrigation generally is cost effective only for such high-value crops as strawberries.

This soil is poorly suited to hay and pasture because it is droughty and has little natural fertility. If the soil has been cleared for seeding or the pasture overgrazed, erosion is a severe hazard. Maintaining a vegetative cover and restricting grazing help to control erosion. Adding fertilizer, lime, and organic matter help to improve fertility and to sustain beneficial plants. Adding crop residue and other organic matter to the soil helps to increase available water capacity. Proper stocking rates and pasture rotation help to protect the desirable plant species subject to overgrazing during dry periods.

Potential productivity for sugar maple on this soil is moderate. The seedling mortality rate is severe because of droughtiness. Timely planting when the soil is moist but not wet and selecting adaptable species help to reduce the seedling mortality rate.

This soil is suited to use as a site for dwellings with basements. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

This soil is well suited to local roads and streets.

Very rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of sewage effluent, and ground-water contamination is a hazard. Included or nearby areas of Pyrities and Berkshire soils are better suited to this use.

This soil is a good source of sand.

The capability subclass is 4s. The forestland ordination symbol is 3S.

AaC—Adams sand, rolling

This is a very deep, rolling, somewhat excessively drained soil in hummocky areas and on side slopes of sand plains and other sandy deposits. Areas of this soil are mostly irregular in shape. Most areas are 6 to 20 acres, but the range is 6 to 100 acres. Typically, slopes are complex and range from 5 to 15 percent.

Typical sequence, depth, and composition of the layers in the Adams soil—

Surface layer:
0 to 7 inches—dark brown sand

Subsurface layer:
7 to 8 inches—pinkish gray sand

Subsoil:
8 to 13 inches—dark brown and yellowish red loamy sand
13 to 20 inches—strong brown sand

Substratum:
20 to 72 inches—light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are areas of Flackville soils near margins of lake plains and marine plains, where underlying clay deposits are within 20 to 40 inches of the surface; areas of loamy Berkshire, Potsdam, and Pyrities soils where knolls of glacial till protrude above the sand; and areas of Colton and Waddington soils, which are more gravelly than the Adams soil. Also included are some small areas of sandy Udipsamments or Dune land. Included areas range to 6 acres, and make up about 20 percent of the map unit.

The important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are forested. Some cleared areas are reverting to brushland or woodland or are barren.

This soil is poorly suited to cultivated crops. It is subject to both wind and water erosion, is droughty, and has low natural fertility. Conservation tillage and crop rotations that include sod crops help to control erosion, particularly in the steeper areas. Adding manure, lime, and fertilizer according to soil tests helps to improve fertility. Irrigation generally is cost effective only for such high-value crops as strawberries. Adding manure helps to improve water-holding capacity and to overcome droughtiness.

This soil is poorly suited to hayland and pasture because it is droughty and has low fertility. If pasture is overgrazed, the soil is subject to severe erosion, especially in steeper areas. Maintaining a vegetative cover and restricting grazing help to control erosion. Adding fertilizer, lime, and organic matter improves fertility and helps to sustain beneficial plants. Adding crop residue and other organic matter to the soil helps to increase available water capacity. Proper stocking rates and pasture rotation help to protect desirable plant varieties subject to overgrazing during dry periods.

Potential productivity for sugar maple on this soil is moderate. The seedling mortality rate is severe because the soil is droughty. Planting in spring or fall during optimum moisture conditions helps to reduce the seedling mortality rate.

Slope is the main limitation to use of this soil as a site for dwellings with basements. Designing buildings to conform to the natural slope helps to overcome this limitation. Also, in some areas land shaping could form a level building site. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered, cutbanks need to be shored up and buttressed to prevent cave-ins. Erosion is a hazard if this soil is cleared of vegetation. Controlling runoff, maintaining a ground cover during construction, and restoring a vegetative cover soon after construction help to control water and wind erosion.

Slope is the main limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping, and grading help to overcome slope.

Rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The porous soil does not filter out contaminants, which cause a hazard of ground-water pollution. Included or nearby soils, such as Pyrities and Berkshire soils, are better suited to this use.

This soil is a probable source of sand.

The capability subclass is 6e. The forestland ordination symbol is 3S.

AaD—Adams sand, 15 to 35 percent slopes

This is a very deep, moderately steep to very steep, somewhat excessively drained soil along deeply incised rivers or on the tops and sides of hills and ridges. Most areas of this soil are long and narrow in shape. Areas are 6 to 20 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers in the Adams soil—

Surface layer:
0 to 7 inches—dark brown sand

Subsurface layer:
7 to 8 inches—pinkish gray sand

Subsoil:
8 to 13 inches—dark brown and yellowish red loamy sand
13 to 20 inches—strong brown sand

Substratum:
20 to 72 inches, light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are areas of Salmon soils at the margins of lake plains where deposits are dominantly very fine sand and silt; areas of loamy Berkshire, Potsdam, and Pyrities soils where sandy sediments have been eroded away, exposing soils that formed in loamy glacial till; and some areas of Colton and Waddington soils, which are more gravelly than the Adams soil. Some small areas of sandy Udipsamments or Dune land and small areas of steeper soils are also included. Included areas range to 6 acres and make up about 20 percent of the map unit.

The important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Very severe
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are forested. Some cleared areas are reverting to brushland or woodland, or are barren.

This soil is poorly suited to cultivated crops. It is too steep for efficient tillage and is subject to both wind and water erosion. It is droughty and has low natural fertility.

This soil is poorly suited to hayland and pasture. It is droughty and has low fertility. If pasture is overgrazed, the soil is subject to severe erosion, especially in steeper areas. Maintaining a vegetative cover and restricting grazing help to control erosion. Adding fertilizer, lime, and organic matter improves fertility and helps to sustain beneficial plants. Adding crop residue and other organic matter to the soil helps to increase available water capacity. Proper stocking rates and pasture rotation help to protect desirable plants subject to overgrazing during dry periods.

Potential productivity for sugar maple on this soil is high. The seedling mortality rate is severe because of droughtiness. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to reduce the seedling mortality rate. In some areas slope interferes with some mechanized planting and harvesting operations. Erosion is a hazard on some longer, steeper slopes. Building logging roads and skid trails on the contour and installing water bars help to control erosion.

Moderately steep to very steep slopes are a severe limitation to use of this soil as a site for dwellings with basements. Designing the structure to conform to slope and cutting and filling help to overcome slope. Cutbanks caving in is a hazard in excavations. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Moderately steep to very steep slopes are a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour and aligning and designing roads to conform to slope help to overcome this limitation.

Very rapid permeability in the substratum and moderately steep to very steep slopes are severe limitations to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of sewage effluent, and ground-water contamination is a hazard. Pyrities and Berkshire soils, which are included or nearby, are better suited to septic tank absorption fields.

This soil is commonly a good source of sand.

The capability subclass is 7e. The forestland ordination symbol is 3S.

AdB—Adams loamy fine sand, 2 to 8 percent slopes

This is a very deep, gently sloping, somewhat excessively drained soil on rises and broad hilltops on sand plains and other sandy deposits. Most areas of this soil are irregular in shape. Most areas are 6 to 20 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers in the Adams soil—

Surface layer
0 to 7 inches—dark brown loamy fine sand

Subsurface layer
7 to 8 inches—pinkish gray sand

Subsoil
8 to 13 inches—dark brown and yellowish red loamy sand
13 to 20 inches—strong brown sand

Substratum
20 to 72 inches—light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are areas of Flackville soils near the margins of lake plains and marine plains where underlying clay deposits are within 20 to 40 inches of the surface; areas of loamy Grenville and Pyrities soils on knolls of stony glacial till; and some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included soils range to 6 acres, and make up about 20 percent of the map unit.

The important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Many areas of this soil are in woodland or brushland. Some areas are used for agriculture.

This soil is fairly suited to cultivated crops. Low natural fertility and droughtiness in summer are the main limitations. Adding organic matter, lime, and fertilizer help to improve fertility. Applying fertilizer and lime in frequent, small increments rather than all at once helps to prevent leaching and to reduce nutrient loss. Adding crop residue and other organic matter to the soil helps to improve the water-holding capacity. Irrigation generally is not cost effective except in combination with some specialty crops. Cover cropping, conservation tillage, and sod crops included in crop rotations help to conserve soil moisture and to control wind and water erosion.

This soil is fairly suited to hay and pasture. Adding lime and fertilizer according to soil tests helps to improve fertility and to sustain beneficial plants. In summer, low available water capacity weakens plants. Adding crop residue and other organic matter to the soil helps to increase water-holding capacity. Proper stocking rates and pasture rotation help to protect desirable plant varieties subject to overgrazing during dry periods.

Potential productivity for sugar maple on this unit is moderate. Tree seedlings can be machine planted. The soil is droughty, and the severe seedling mortality rate is a management concern. Planting in spring or fall during optimum moisture conditions reduces droughtiness and the seedling mortality rate.

This soil is well suited to dwellings with basements. Cutbanks caving in is a hazard in excavations. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

This soil is well suited to local roads and streets.

Rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter, and ground-water contamination is a hazard. An alternative is to place the absorption field on included or nearby soils, such as Grenville and Pyrities soils, that are better suited to this use.

This soil is commonly a good source of sand.

The capability subclass is 3s. The forestland ordination symbol is 3S.

AdC—Adams loamy fine sand, 8 to 15 percent slopes

This is a very deep, strongly sloping, somewhat excessively drained soil on side slopes of hills and on knolls on sand plains. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers in the Adams soil—

Surface layer:
0 to 7 inches—dark brown loamy fine sand

Subsurface layer:
7 to 8 inches—pinkish gray sand

Subsoil:
8 to 13 inches—dark brown and yellowish red loamy sand
13 to 20 inches—strong brown sand

Substratum:
20 to 72 inches—light yellowish brown sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low areas and along drainageways. Also included are areas of Flackville soils near the margins of lake plains and marine plains where underlying clay deposits are within 20 to 40 inches of the surface; areas of loamy Grenville and Pyrities soils on small knolls and hills; and some areas, notably along the border of Jefferson County, where soils are warmer than normal, usually by less than 2 degrees. Included soils range to 6 acres, and make up about 20 percent of the map unit.

The important properties of the Adams soil—

Permeability: Rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Low
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland or brushland. Some areas are used for hay or pasture.

This soil is poorly suited to most cultivated crops. Severe erosion hazard, low natural fertility, and droughtiness in summer are the main limitations. Conservation tillage, cross slope tillage, and crop rotations favoring sod crops help to control erosion. Adding organic matter, lime, and fertilizer help to improve fertility. Applying fertilizer and lime in frequent, small increments rather than all at once helps to prevent leaching and to reduce nutrient loss. Adding crop residue and other organic matter to the soil helps to improve water holding capacity. Irrigation generally is not cost effective except for a combination of crops including specialty crops.

This soil is poorly suited or fairly suited to hay and pasture because of the severe erosion hazard, low available water capacity, and low natural fertility. Overgrazing and loss of plant cover increase the hazard of erosion. Proper stocking rates and pasture rotation help to control erosion and to protect desirable plant varieties, which are subject to overgrazing during dry periods. Adding fertilizer, lime, and organic matter help to improve fertility and to sustain beneficial plants. In summer, this soil has little water available for plants. Returning crop residue and other organic matter to the soil helps to retain soil moisture.

Potential productivity for sugar maple on this soil is moderate. This soil is droughty and seedling mortality is a management concern. Planting in spring or fall, during optimum moisture conditions, helps to overcome droughtiness. Constructing logging roads and skid trails on the contour helps to control erosion.

Slope is the main limitation to use of this soil as a site for dwellings with basements. Dwellings could be designed to conform to the natural slope. In some areas filling and shaping could level a building site. Erosion is a hazard if the soil is cleared of vegetation. Controlling runoff during construction and restoring a vegetative cover as soon as possible help to control erosion. Cutbanks caving in is a hazard in excavations. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Slope is the main limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping, and grading help to overcome this limitation.

Rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter, and ground-water contamination is a hazard. Included or nearby soils, such as Grenville and Pyrities soils, are better suited to this use.

This soil is commonly a good source of sand.

The capability subclass is 4e. The forestland ordination symbol is 3S.

Ak—Adjidaumo silty clay

This is a very deep, nearly level, poorly drained soil that formed in clayey sediments in low-lying areas on marine plains and upland basins and along streams. Most areas of this soil are irregular in shape. Areas are 6 to 30 acres, but the range is 6 to more than 100 acres. Slopes are smooth, and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers in the Adjidaumo soil—

Surface layer:
0 to 8 inches—very dark gray, mottled silty clay

Subsoil:
8 to 18 inches—gray, mottled silty clay
18 to 27 inches—gray, mottled clay

Substratum:
27 to 72 inches—gray, mottled clay

Included with this soil in mapping are small areas of Dorval soils in wetter depressions where organic matter accumulates on the surface. Also included are areas of moderately well drained Heuvelton soils on convex knolls and in other, higher areas; areas of somewhat poorly drained Swanton soils in areas of slightly higher relief, where loamy materials overlie clay; and small areas of loamy, well drained Grenville soils, moderately well drained Hogansburg soils, and somewhat poorly drained Malone soils on small hills and knolls. Also included are small areas of moderately deep Matoon soils and rock outcrops on benches and slight rises in the midst of bedrock-controlled areas and areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included soils range to 6 acres, and make up about 20 percent of the map unit.

The important properties of the Adjidaumo soil—

Permeability: Moderately slow in the mineral surface layer, slow in the subsoil, and slow or very slow in the substratum
Available water capacity (average for a 40-foot soil profile): High
Soil reaction: Slightly acid to neutral in the surface soil, neutral to slightly alkaline in the subsoil, and slightly alkaline to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are used for hay and pasture, but some areas are used for cultivated crops. Many other areas are wooded. Some cleared areas are now idle and are reverting to brush.

This soil is poorly suited to many cultivated crops because of seasonal wetness. Artificial drainage is difficult to establish in places because of a lack of suitable outlets. Conservation tillage, crop residue on and in the soil, and cover crops help to improve tilth.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts rooting depth of some plants, especially legumes. Grazing when the soil is wet causes surface compaction and degrades tilth. Installing artificial drainage and selecting shallow-rooted, water-tolerant species help to improve productivity. Applying lime and fertilizer based on soil tests, restricting grazing during wet periods, and yearly mowing help to prevent surface compaction, to preserve tilth, and to enhance quality and quantity of feed and forage.

Potential productivity for red maple on this soil is low. In some years wetness hinders heavy equipment use in spring and during other wet periods. Logging during drier periods or in winter when the ground is frozen allows use of heavy equipment. Planting seedlings during optimum moisture conditions increases the rate of seedling survival. The water table limits root development, and windthrow is a severe hazard. Minimizing thinning and planting shallow-rooted varieties help to minimize the windthrow hazard.

The seasonal high water table in this soil is a severe limitation both for dwellings with basements and for buildings without basements. Grenville soils, which are included or nearby, are better drained and have fewer limitations than the Adjidaumo soil for dwellings with basements.

Low strength, the seasonal high water table, and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Providing a suitable subgrade or base material and using special construction methods for adequate support help to increase the strength and stability of this soil. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent damage to pavement from frost action.

The seasonal high water table and the very slow or slow permeability are severe limitations to use of this soil as a site for septic tank absorption fields. Pyrities soils, which are included or nearby, are better drained and have fewer limitations for septic tank absorption fields.

The capability subclass is 4w. The forestland ordination symbol is 2W.

Am—Adjidaumo mucky silty clay

This is a very deep, nearly level, very poorly drained soil that formed in clayey sediments in low-lying areas of ancient marine beds or upland basins where water stands at or on the surface during the wetter parts of the year. Areas of this soil are mostly irregular in shape, except along drainageways, where they are long and narrow. Areas are 6 to 20 acres, but the range is 6 to more than 100 acres. Slopes are smooth and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers in the Adjidaumo soil—

Surface layer:
0 to 8 inches—very dark gray, mottled, mucky silty clay

Subsoil:
8 to 18 inches—gray, mottled silty clay
18 to 27 inches—gray, mottled clay

Substratum:
27 to 72 inches—gray, mottled clay

Included with this soil in mapping are small areas of Dorval soils in wetter depressions where a layer of organic matter deeper than 16 inches has accumulated on the surface. Also included are areas of somewhat poorly drained Muskellunge soils in high areas, some small areas of rock outcrops, and areas of sandy Deford soils adjacent to outwash plains. Also included, notably along the border of Jefferson County, are areas of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres, and make up about 20 percent of this map unit.

The important properties of the Adjidaumo soil—

Permeability: Moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid to neutral in the surface layer, neutral to slightly alkaline in the subsoil, and slightly alkaline to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Ranges from 1 foot above the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Areas of this soil are swampland, woodland, or brushland.

This soil is not suited to most agricultural uses. From late fall to early summer the seasonal high water table severely impedes planting and harvesting. Because of the clayey texture and wetness, worthwhile yields are difficult to produce on this soil. This soil could be used as pasture during the driest part of summer. Restricting stock when the surface is wet prevents surface compaction. This soil is suited to use as habitat for wildlife and to some recreation uses.

Potential productivity for red maple on this soil is low. The soil is soft when wet, and use of heavy equipment is restricted for much of the year. Logging in winter when the soil is frozen reduces the problems from heavy equipment use. Standing water in spring limits planting. Wetness severely limits seedling survival. Planting water-tolerant species helps to improve survival. The seasonal high water table restricts root development and windthrow is a hazard. Minimizing thinning and selecting naturally shallow-rooted trees help to reduce windthrow.

This soil is not suitable as a site for dwellings with basements because of ponding. Grenville or Pyrities soils, which are included with this soil in mapping or are nearby, are better drained and have fewer limitations for dwellings.

Low strength, ponding, and potential for frost action are severe limitations for local roads and streets. Providing suitable subgrade or base material and using special construction methods for adequate support help to compensate for low strength. Constructing roads on raised fill material and installing a drainage system help to overcome ponding. Providing coarser grained subgrade or base material to frost depth helps to prevent damage to pavement from frost action. Heuvelton or Swanton soils, which are near the Adjidaumo soil, are better suited to local roads and streets than the Adjidaumo soil.

This soil is poorly suited to use as a site for septic tank absorption fields. Ponding and very slow or slow permeability in the substratum are severe limitations and require extensive alterations. Heuvelton and Swanton soils, which are near the Adjidaumo soil, are better suited to this use than the Adjidaumo soil.

The capability subclass is 5w. The forestland ordination symbol is 2W.

Ao—Adjidaumo silty clay, flooded

This is a very deep, nearly level, poorly drained and very poorly drained soil that formed in clayey sediments in low areas of marine plains and lake plains adjacent to slow moving streams and rivers. The soil is subject to frequent flooding. Areas of this soil are elongated and parallel to streams. They range from 6 to 150 acres. Slopes are smooth and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers in the Adjidaumo soil—

Surface layer:
0 to 8 inches—mottled, very dark gray silty clay

Subsoil:
8 to 18 inches—mottled, gray silty clay
18 to 27 inches—mottled, gray clay

Substratum:
27 to 72 inches— mottled, gray clay

Included with this soil in mapping are small areas of Borosaprists in the lowest parts of the unit where floodwater is stagnated for long periods. Also included are narrow bands of Fluvaquents and Udifluvents in coarser textured materials where floodwater tends to move more rapidly and small areas of somewhat poorly drained Muskellunge soils on higher knolls and on small terraces that are not subject to flooding. Inclusions range to 6 acres, and make up about 20 percent of the map unit.

Important properties of the Adjidaumo soil—

Permeability: Moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid to neutral in the surface layer, neutral to slightly alkaline in the subsoil, and slightly alkaline to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: Subject to frequent flooding for long duration

Most areas of this soil are in pasture. Some areas are in meadow. A few areas are wooded.

This soil is poorly suited to cultivated crops because of wetness and frequent flooding. In some years wetness and flooding delay planting in spring and harvesting in fall. Depending on the site and the crop, surface and subsurface drainage helps to reduce wetness.

This soil is poorly suited to hay and pasture because of wetness and frequent flooding. Under good management, the soil is productive. If surface and subsurface drainage is installed to lower the water table, more productive grasses and some shallow-rooted legumes can be grown. Removing cattle from this soil during wet periods helps to protect soil tilth.

Potential productivity for red maple on this soil is low. The soil, which is soft when wet, restricts use of heavy equipment for much of the year. Logging in winter reduces the problems of equipment use. Standing water in spring hinders planting operations. Wetness severely limits seedling survival. Planting water-tolerant species helps to improve productivity. The seasonal high water table restricts root development and the windthrow hazard is severe. Selecting naturally shallow-rooted trees and minimizing thinning help to reduce the windthrow hazard.

This soil is poorly suited to dwellings with basements because of frequent flooding and wetness. Included Muskellunge soils and nearby Pyrities soils are better suited to this use. Muskellunge soils are in high areas, are wet, but are not subject to flooding. Pyrities soils are deep and well drained.

Low strength, flooding, and ponding are severe limitations to use of this soil as a site for local roads and streets. Providing suitable subgrade or base material and using special construction methods for adequate support help to increase strength and stability on this soil. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness and to overcome flooding. An alternative is to route roads around this soil or on included soils that are better suited to this use.

This soil is poorly suited to use as a site for septic tank absorption fields. Flooding and very slow or slow permeability in the substratum are severe limitations and require extensive alterations. Included Muskellunge soils have limitations to this use but are better suited than the Adjidaumo soil. An alternative is to place the absorption field on nearby, deep, well drained Pyrities soils.

The capability subclass is 5w. The forestland ordination symbol is 2W.

Ap—Adjidaumo silty clay, rocky

This is a very deep, nearly level, poorly drained and very poorly drained soil in low-lying marine basins. It formed in clayey sediments overlying bedrock at a depth of more than 60 inches. Rock outcrops of folded marble and, less commonly, gneiss are scattered on these soils. They cover 0.1 to 2 percent of the surface. Most areas of this soil are irregular in shape. Areas are 6 to 100 acres. Slopes are smooth and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers of the Adjidaumo soil—

Surface layer:
0 to 8 inches—mottled very dark gray silty clay

Subsoil:
8 to 18 inches—mottled gray silty clay
18 to 27 inches—mottled gray clay

Substratum:
27 to 72 inches—mottled gray clay

Included with this soil in mapping are small areas of mucky Dorval soils in wetter depressions where organic matter more than 16 inches thick has accumulated on the surface. Also included are areas of somewhat poorly drained Matoon soils; areas of loamy, somewhat poorly drained Ogdensburg soils on slight rises where bedrock is within 40 inches of the surface; and areas of shallow Insula soils and moderately deep Nehasne soils on bedrock-controlled benches and knolls. Also included are areas of Insula, Matoon, and Ogdensburg soils near most rock outcrops. Included areas range to 6 acres, and make up about 20 percent of this unit.

The important properties of the Adjidaumo soil—

Permeability: Moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid to neutral in the surface layer, neutral to slightly alkaline in the subsoil, and slightly alkaline to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Many areas of this soil are in native pasture. Other areas are wooded or are reverting to brushland.

This soil is poorly suited to cultivated crops because of prolonged periods of wetness, water ponded on the surface, and rock outcrops.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the rooting depth of some plants, especially legumes. Selecting shallow-rooted, water-tolerant grasses and legumes improves productivity. In some areas grazing when the soil is wet damages soil tilth. Restricted grazing during wet periods and rotational grazing prevent surface compaction and damage to soil tilth. In some areas rock outcrops impede use of some farm equipment.

Potential productivity for red maple on this soil is low. In some areas wetness hinders heavy equipment use in spring and during other wet periods. Logging during drier periods or in winter when the ground is frozen allows use of heavy equipment. Planting seedlings during optimum moisture conditions increases the rate of seedling survival. The seasonal high water table restricts root development of some trees and windthrow is a severe hazard. Minimizing thinning and selecting naturally shallow-rooted trees help to reduce windthrow. In some areas rock outcrops impede equipment use.

Ponding, the seasonal high water table, and rock outcrops are severe limitations to use of this soil as a site for dwellings with basements. Nearby or included, well drained Pyrities soils have fewer limitations to this use.

Low strength, the seasonal high water table, and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Providing suitable subgrade or base material and using special construction methods for adequate support help to increase strength and stability of this soil. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness.

Providing coarser grained subgrade or base material to frost depth helps to prevent damage to pavement from frost action. Rock outcrops and included, moderately deep and shallow soils are also limitations to this use.

The seasonal high water table, ponding, and very slow or slow permeability are severe limitations to use of this soil as a site for septic tank absorption fields. Rock outcrops and moderately deep and shallow depth to bedrock on included Matoon, Ogdensburg, and Insula soils are also limitations to septic tank absorption fields. Nearby, well drained Pyrities soils have fewer limitations to this use than the Adjidaumo soil.

The capability subclass is 5w. The forestland ordination symbol is 2W.

ArC—Adjidaumo-Summerville-Rock outcrop complex, rolling

This map unit consists of Adjidaumo and Summerville soils and Rock outcrop on small, discontinuous ridges and in intervening valleys. The Adjidaumo soil is very deep, poorly drained and very poorly drained. It formed in clayey marine deposits in the intervening valleys. The Summerville soil is shallow and well drained. It formed in thin deposits of glacial till on bedrock-controlled ridges. Topography is irregular. Slopes are short and generally complex, ranging from 5 to 15 percent on the Rock outcrop and the Summerville soil and from 0 to 2 percent on the Adjidaumo soil. Most areas of these soils and rock outcrops are elliptical in shape, are oriented northeast-southwest, and range from 10 to 200 acres. This unit is about 35 percent Adjidaumo soil, 35 percent Summerville soil, 10 percent Rock outcrop, and 20 percent other soils. The Adjidaumo and Summerville soils and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Adjidaumo soil—

Surface layer:
0 to 8 inches—very dark gray silty clay

Subsoil:
8 to 18 inches—gray silty clay
18 to 27 inches—gray clay

Substratum:
27 to 72 inches—gray clay

Typical sequence, depth, and composition of the layers of the Summerville soil—

Surface layer:
0 to 6 inches—dark brown fine sandy loam

Subsoil:
6 to 12 inches—strong brown and dark brown fine sandy loam
12 inches—limestone bedrock

Included with these Adjidaumo and Summerville soils and Rock outcrop in mapping are areas of Dorval, Matoon, Muskellunge, Gouverneur, Pyrities, and Insula soils. Small areas of Dorval soils are in wetter depressions where a layer of organic matter more than 16 inches thick has accumulated on the surface. Level areas of Matoon soils are on benches where bedrock is within a depth of 40 inches, near bedrock-controlled ridges. Areas of somewhat poorly drained Muskellunge soils are where the intervening basins are broader and slightly sloping. Very shallow Gouverneur soils are where the glacial till mantle on ridges is less than 10 inches thick. Small areas of very deep, well drained Pyrities soils are on backslopes of ridges where the till mantle is deeper. Areas of low-lime Insula soils are on some ridges where bedrock is predominantly granite and gneiss instead of marble. Also included are some areas of steeper soils and bedrock scarps and areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres, and make up about 20 percent of this unit.

The important properties of the Adjidaumo soil—

Permeability: Moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid to neutral in the surface layer, neutral to slightly alkaline in the subsoil, and slightly alkaline to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate

Flooding hazard: None

The important properties of the Summerville soil—

Permeability: Moderately rapid in the surface layer and moderate in the subsoil
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Slightly acid to slightly alkaline in the surface layer and slightly acid to moderately alkaline in the subsoil
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of these soils are in native pasture. Other areas are woodland or are reverting to brush.

The Adjidaumo and Summerville soils are very poorly suited to crops, including hay. On the Adjidaumo soil the seasonal high water table restricts plant growth and can impede planting and harvesting. On the Summerville soil depth to bedrock and droughtiness are also limitations. Included, steeper soils and bedrock scarps on bedrock-controlled ridges impede trafficability.

The Adjidaumo and Summerville soils are suitable to unimproved pasture. Careful management sustains soil quality and forage yields. On the Adjidaumo soil, grazing during wet periods causes surface compaction and loss of soil tilth and pasture seeding. On the Summerville soil, erosion is a hazard because of slope, shallow depth to bedrock, and delicate native plant communities. These soils should not be overgrazed, especially during dry periods.

Potential productivity for red maple is low on the Adjidaumo soil. Potential productivity for sugar maple is low on the Summerville soil. Bedrock ridges hinder machine planting and harvesting on a large scale. The Adjidaumo soil is soft when wet, and equipment use is restricted; logging in winter when the ground is frozen avoids the problem of soft, wet soil. Seedling mortality is severe on the Adjidaumo and Summerville soils. Planting the Adjidaumo soil with water-tolerant species and the Summerville soil with drought-tolerant species helps to improve productivity. Because of the seasonal high water table on the Adjidaumo soil and the shallow depth to bedrock on the Summerville soil, trees have a shallow root zone and windthrow is a hazard. Minimizing thinning and selecting naturally shallow-rooted species help to reduce windthrow.

The seasonal high water table on the Adjidaumo soil and shallow depth to bedrock on the Summerville soil are the main limitations to use of these soils as a site for dwellings with basements. The Summerville soil is suited to dwellings without basements. The Adjidaumo soil should be avoided as a site for dwellings.

The seasonal high water table on the Adjidaumo soil and shallow depth to bedrock on the Summerville soil are severe limitations to use of these soils as a site for septic tank absorption fields. On the Summerville soil adding fill helps to overcome this limitation. An alternative is to place the absorption field on included soils, such as Pyrities soils, that are deeper than the Summerville soil and well drained.

Low strength, wetness, and potential for frost action on the Adjidaumo soil and shallow depth to bedrock on the Summerville soil are the main limitations to use of these soils as a site for local roads and streets. Providing suitable subgrade or base material and using special construction methods for adequate support help to increase strength and stability of these soils. Constructing roads on raised fill material and installing a drainage system help to overcome ponding. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. On many ridges finding usable road grades on steep side slopes is difficult. In some places roads could be built on nearby, more favorable soils.

Wetness and very slow and slow permeability on the Adjidaumo soil and shallow depth to bedrock and seepage on the Summerville soil are severe limitations to use of these soils as a site for septic tank absorption fields. The absorption field could be placed on nearby soils, such as Heuvelton and Hogansburg soils, that are better suited to this use.

The capability subclass is 4w for the Adjidaumo soil and 7s for the Summerville soil. The forestland ordination symbol is 2W for the Adjidaumo soil and 2D for the Summerville soil.

BeB—Berkshire loam, 3 to 8 percent slopes

This is a very deep, gently sloping, well drained soil on rounded tops of ridges and hills. Most areas of this soil are oval in shape. Areas range from 7 to 30 acres.

Typical sequence, depth, and composition of the layers in the Berkshire soil—

Surface layer:
0 to 7 inches—dark brown loam

Subsoil:
7 to 11 inches—brown loam

11 to 30 inches—brown gravelly loam

Substratum:
30 to 72 inches—dark yellowish brown sandy loam

Included with this soil in mapping are small areas of poorly drained Lyme soils and very poorly drained Tughill soils in drainageways and depressions. Also included are areas of moderately deep Tunbridge soils on bedrock-controlled benches and knolls; areas of sandy Adams soils and gravelly, sandy Colton soils on valley sides and in other areas subject to a glaciofluvial influence; and some small areas of soils on steeper slopes. Included areas range to 6 acres and make up about 20 percent of this map unit.

The important properties of the Berkshire soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Moderate
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are cleared and are used for pasture or crops. Some areas are reverting to brush. This is a prime farmland soil.

This soil is well suited to cultivated crops. Low soil reaction is the main limitation to productivity. Adding lime and fertilizer help to improve soil reaction and fertility. Erosion is a hazard on some longer slopes. Conservation tillage, stripcropping, and contour plowing help to control erosion.

This soil is well suited to hay and pasture. Low soil reaction is the main limitation. Adding lime and fertilizer can improve soil reaction and fertility. Overgrazing can destroy the vegetative cover and can cause an erosion hazard. Rotational grazing and proper stocking rates help to protect pasture seeding and to control erosion.

Potential productivity for eastern white pine on this soil is high. There are no significant limitations to woodland use and management on this soil.

This soil is well suited to dwellings with basements. However, scattered, large boulders in the soil impede excavation.

Frost action is a moderate limitation to use of this soil as a site for local roads and streets; it causes cutbanks to slough and road surfaces to buckle. Vegetating cut slopes before fall helps to prevent sloughing in spring. Upslope ditches and adequate culverts help to prevent frost action from buckling pavement. Providing a coarser grained subgrade or base material helps to prevent frost action from damaging pavement.

This soil is well suited to septic tank absorption fields. However, areas of included soils that are wetter or are shallow or moderately deep are not suited to this use.

The capability subclass is 2e. The forestland ordination symbol is 9A.

BgC—Berkshire-Lyme complex, rolling, very bouldery

This map unit consists of very deep, rolling Berkshire and Lyme soils on networks of small, rounded hills and swales. The well drained Berkshire soil is on the higher, steeper, and more convex parts of the landscape, and the poorly drained Lyme soil is in the concave parts. Boulders 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface of these soils. Local relief generally is low, and slopes are complex, ranging from 5 to 15 percent. Areas of these soils range from 10 to 100 acres. The unit is about 40 percent Berkshire soil, 25 percent Lyme soil, and 35 percent other soils. The Berkshire and Lyme soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the Berkshire soil—

Surface layer:
0 to 7 inches—dark brown loam

Subsoil:
7 to 11 inches—brown loam
11 to 30 inches—brown gravelly loam

Substratum:
30 to 72 inches—dark yellowish brown sandy loam

Typical sequence, depth, and composition of the layers of the Lyme soil—

Surface layer:
0 to 3 inches—very dark gray sandy loam

Subsoil:
3 to 6 inches—grayish brown sandy loam
6 to 11 inches—dark grayish brown sandy loam
11 to 16 inches—brown cobbly sandy loam

Substratum:
16 to 24 inches—dark grayish brown and grayish brown gravelly sandy loam

24 to 72 inches—brown sandy loam

Included with the Berkshire and Lyme soils in mapping are small areas of very poorly drained Dawson and Tughill soils in deeper depressions. Also included are areas of moderately deep Tunbridge soils on bedrock-controlled benches and knolls, small areas of rock outcrops near Tunbridge soils, and small areas of soils that are more or less sloping than the Berkshire and Lyme soils. Sandy Adams soils and gravelly, sandy Colton soils are included on sides of valleys and adjacent to streams and in other areas subject to glaciofluvial influence. Included soils range to 6 acres, and make up about 35 percent of this unit.

Important properties of the Berkshire soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyme soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil Reaction: Very strongly acid or strongly acid throughout
Erosion hazard: Severe
Depth to water table: From the surface to a depth of 18 inches from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are poorly suited to cultivated crops because many stones and boulders are on the surface. Removing stones and boulders is too costly for crops normally grown in the area. These soils are difficult to manage for cultivated crops because of complex topography and wetness on the Lyme soil.

These soils are poorly suited to pasture. Stones and boulders severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes. Restricting livestock from pasture on the Lyme soil prevents surface compaction and loss of soil tilth and productivity.

Potential productivity for eastern white pine on these soils is high. Plant competition, the windthrow hazard, and the equipment limitation are problems on the Lyme soil. Replanting immediately after harvest, controlling forest openings after harvest, and eradicating undesirable species help to control plant competition. On the Lyme soil windthrow is a severe hazard because the high water table restricts root development. Minimizing stand openings from harvest or in reforestation shielding trees or planting adaptable species without taproots helps to reduce windthrow. On the Lyme soil wetness limits use of equipment. Logging in winter when the ground is frozen allows use of equipment.

The seasonal high water table on the Lyme soil is a severe limitation to use of these soils as a site for dwellings with basements. However, dwellings could be constructed on the Berkshire soil. Slope is a limitation on the Berkshire and Lyme soils for dwellings with basements. Land shaping and grading help to overcome slope. Erosion is a hazard in areas cleared for construction. Designing dwellings to conform to the natural slope and setting helps to minimize land shaping and erosion. Revegetating the soil during or soon after construction helps to control erosion. Scattered, large boulders in the soil impede excavation.

Frost action and the seasonal high water table on the Lyme soil are the main limitations to use of these soils as a site for local roads and streets. Building roads and streets on the contour helps to overcome slope, but is difficult in areas with broken topography. Providing a coarser grained subgrade or base material and constructing ditches and road culverts to improve soil drainage next to roads help to reduce wetness and to prevent frost action from buckling and heaving pavement. Revegetating the soil during or soon after construction helps to control erosion and to prevent frost action from sloughing in spring. An alternative is to build roads and streets on the Berkshire soil.

The seasonal high water table on the Lyme soil is a severe limitation to use of these soils as a site for septic tank absorption fields. The well drained Berkshire soil is suited to this use. Slope is also a limitation. Placing distribution lines on the contour and using serial distribution help to ensure uniform distribution of effluent throughout the absorption field.

The capability subclass is 6s for the Berkshire and Lyme soils. The forestland ordination symbol is 9A for the Berkshire soil and 8W for the Lyme soil.

BkC—Berkshire and Sunapee soils, 8 to 15 percent slopes, very bouldery

This map unit consists of very deep, strongly sloping Berkshire and Sunapee soils on the tops and sides of ridges and hills. The well drained Berkshire soils are on the higher, steeper, more convex parts of the topography. The moderately well drained Sunapee soils are generally slightly lower on the landscape than Berkshire soils, commonly on slight benches. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Slopes are generally simple, but small streams dissect a few areas. Areas of this unit range from 10 to 200 acres. The Berkshire and Sunapee soils were mapped together because they are similar in use and management. Areas consist partly of Sunapee or Berkshire soils or they are all Sunapee or all Berkshire soils. The unit is about 45 percent Berkshire soils, 35 percent Sunapee soils, and 20 percent other soils.

Typical sequence, depth, and composition of the layers of the Berkshire soils—

Surface layer:
0 to 7 inches—dark brown loam

Subsoil:
7 to 11 inches—brown loam
11 to 30 inches—brown gravelly loam

Substratum:
30 to 72 inches—dark yellowish brown sandy loam

Typical sequence, depth, and composition of the layers of the Sunapee soils—

Surface layer:
0 to 1 inch—black moderately decomposed forest litter
1 to 4 inches—black fine sandy loam

Subsoil:
4 to 13 inches—dark reddish brown fine sandy loam
13 to 17 inches—reddish brown fine sandy loam
17 to 23 inches—dark yellowish brown fine sandy loam

Substratum:
23 to 72 inches—light brownish gray fine sandy loam

Included with these Berkshire and Sunapee soils in mapping are Lyme, Tughill, Adams, and Colton soils. Also included are small areas of poorly drained Lyme soils and very poorly drained Tughill soils in drainageways and depressions; areas of moderately deep Tunbridge soils on bedrock-controlled benches and knolls; and areas of sandy Adams soils and gravelly, sandy Colton soils on sides of valleys and adjacent to watercourses. Included areas range to 6 acres and make up about 20 percent of the map unit.

Important properties the Berkshire soils—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: Below a depth of 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Important properties the Sunapee soils—

Permeability: Moderate in the mineral part of the surface layer and subsoil and moderate or moderately rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to strongly acid in the surface layer and the subsoil and extremely acid to moderately acid in the substratum
Erosion hazard: Severe
Depth to water table: From 1.5 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. Some areas are pasture.

These soils are poorly suited to cultivated crops because of many stones and boulders on the surface. Removing stones and boulders is too costly for crops normally grown in the area.

These soils are poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Managing stocking rates and controlling brush are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish the quantity and quality of forage plants and can cause an erosion hazard.

These soils are poorly suited to hay or improved pasture, but are suited to unimproved pasture. Overgrazing reduces the quantity and quality of the forage and increases the hazard of erosion.

Potential productivity for trees on these soils is high. Plant competition is a problem on Sunapee soils.

Mechanical or chemical site preparation reduces plant competition.

The seasonal high water table on Sunapee soils is a severe limitation to use of these soils as a site for dwellings with basements. On Sunapee soils installing foundation drains and sealing foundations help to prevent wet basements, or dwellings could be built on the better drained Berkshire soils. Slope on Sunapee and Berkshire soils is also a limitation for dwellings with basements. Land shaping and grading help to overcome slope. Erosion is a hazard in areas cleared for construction, but designing dwellings to conform to the natural slope and setting helps to keep earthwork in place and to control erosion. Revegetating the soil during or soon after construction also helps to control erosion. Large boulders scattered in the soil can impede excavation.

Wetness and frost action on the Sunapee soils and excessive slope on both Berkshire and Sunapee soils are the main limitations to use of these soils as a site for local roads and streets. Providing coarser grained subgrade or base material and constructing ditches and road culverts to improve soil drainage close to the road help to prevent wetness and frost action from buckling, slumping, and heaving pavement. Building streets and roads on the contour, adjusting grade and alignment, and including cut and fill sections help to overcome slope. Revegetating the soil during or soon after construction helps to control erosion.

The seasonal high water table on Sunapee soils is a severe limitation to use of these soils as a site for septic tank absorption fields. On Sunapee soils installing a drainage system around the filter field and a diversion to intercept runoff from higher areas helps to reduce wetness. The absorption field could be placed on well drained Berkshire soils. On both Berkshire and Sunapee soils slope is also a limitation. Laying out distribution lines on the contour or using serial distribution helps to ensure uniform distribution of effluent throughout the absorption field.

The capability subclass is 6s for the Berkshire and Sunapee soils. The forestland ordination symbol is 9A for Berkshire soils and 3A for Sunapee soils.

Bo—Borosaprists and Fluvaquents, frequently flooded

This map unit consists of very deep, nearly level, very poorly drained to somewhat poorly drained soils on flood plains near slow-moving streams. Slope ranges from 0 to 2 percent. Areas of these soils are generally elongated and are parallel to nearby streams and creeks subject to frequent flooding. Areas consist almost entirely of very poorly drained Borosaprists or somewhat poorly drained to very poorly drained Fluvaquents, but some areas consist of both soils. Borosaprists and Fluvaquents were mapped together because they are similar in use and management. Borosaprists make up about 50 percent of areas, Fluvaquents make up 30 percent, and other soils make up 20 percent. These soils have variable characteristics and properties and are classified above the series level.

Borosaprists are highly variable. Typically, black muck (sapric material), more than 16 inches thick, overlies a layer of sandy loam. Bedrock generally is at a depth of more than 60 inches.

Typical sequence, depth, and composition of highly variable Fluvaquents—

Surface layer:
0 to 10 inches, black or dark gray sand to silty clay loam

Substratum:
10 to 72 inches, mottled, stratified, gray to brown sand to silty clay loam

Included with these soils in mapping are small areas of clayey Adjidaumo soils at the margins of lake plains. Also included are Udifluvents in high areas and along faster moving parts of streams; some areas of somewhat poorly drained Redwater soils on bedrock-controlled stream gradients; and areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Borosaprists—

Permeability: Moderately slow to moderately rapid in the organic layer and moderately slow to rapid in the mineral layer
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic layer and very strongly acid to slightly acid in the mineral layer
Erosion hazard: Slight
Depth to water table: 1 foot above the surface to 1 foot below from October to July
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Frequent

Important properties of Fluvaquents—

Permeability: Slow to rapid throughout

Available water capacity (average for a 40-inch soil profile): Low to high
Soil reaction: Very strongly acid to neutral in the surface layer and very strongly acid to moderately alkaline below
Erosion hazard: Severe for streambanks
Depth to water table: Ponded to 1.5 feet below the surface from October to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Frequent

Borosaprists and Fluvaquents are subject to flooding from adjacent streams. In some areas activities of beavers or humans cause flooding. In some years these soils are inundated throughout the year. Borosaprists are very poorly drained, and Fluvaquents are somewhat poorly drained, poorly drained, or very poorly drained. Permeability, available water capacity, soil reaction, depth to bedrock, and other properties are variable.

Most areas of these soils are in cattails, rushes, canary grasses, speckled Alder, and other water-tolerant plants and shrubs (fig. 7).

On-site investigation of individual areas is needed to determine the feasibility for most uses. These soils generally are not suited to farming or to urban or recreation development because of wetness and frequent flooding. Many areas are used as habitat for wetland wildlife.

The capability subclass is 8 for Borosaprists and 5w for Fluvaquents. Borosaprists and Fluvaquents were not assigned an ordination symbol.

Ce—Carbondale muck

This is a very deep, nearly level, very poorly drained soil that formed in deep, organic deposits in low-lying basins and depressions. Small hummocks and microknolls are prevalent across the surface of an otherwise smooth terrain. Slopes range from 0 to 2 percent. Most areas are 10 to 100 acres, but the range is 6 to 1,000 acres.

Typical sequence, depth, and composition of the Carbondale soil—

Surface layer:
0 to 12 inches, dark reddish brown muck (sapric material)

Subsurface layer:
12 to 40 inches, dark reddish brown muck
40 to 74 inches, black mucky peat
74 to 99 inches, dark reddish brown mucky peat

Included with this soil in mapping are small areas of open water that are commonly intermittent but that disappear during dry periods or shift position as organic material builds up in some areas and subsides in others. Also included are areas of Dorval soils, Fluvaquents, and Carbondale, Insula, and Adjidaumo soils. Dorval soils are 17 to 51 inches deep over a mineral layer. Small areas of Fluvaquents, mineral soils that are subject to frequent flooding, are where streams flow into this soil. A few areas of Carbondale soils that have thick sphagnum layers on the surface are in the towns of Lisbon, Gouverneur, and Fowler. Trees grow around the perimeters of the units, but the centers are nearly treeless. Vegetation consists mainly of such low-lying bog species as bog rosemary, Labrador tea, and pitcher plants. Shallow Insula soils and rock outcrops are in some areas. Small areas of clayey Adjidaumo soils are near the edges of some units. Also included are areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included soils range to 6 acres and make up about 20 percent of this unit.

Important properties of Carbondale muck—

Permeability: Moderately slow to moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Moderately acid to slightly alkaline throughout
Erosion hazard: Slight
Depth to water table: 1 foot above the surface to 1 foot below from September to May
Depth to bedrock: More than 60 inches
Shrink-swell potential: Low
Potential for frost action: High
Flooding hazard: None

In almost all areas this soil is woodland or brushland. It is poorly suited to cultivated crops, hay, and pasture.

Potential productivity for balsam fir on this soil is poor. The seasonal high water table causes a severe seedling mortality rate. Planting water-tolerant species helps to improve production. The shallow root zone in this soil causes trees to blow over easily. Minimizing thinning helps to reduce windthrow. The soil is soft and unstable when wet and does not support heavy planting or logging equipment. Logging in winter when the ground is frozen allows use of heavy equipment.

This soil is poorly suited to dwellings with basements because of the hazard of subsidence, ponding, and low strength. Dwellings could be built on

Figure 7.—An area of Borosaprists and Fluvaquents, frequently flooded, in a freshwater marsh. These soils provide cover for wetland wildlife.

nearby, well drained, very deep Pyrities and Grenville soils that are better suited to this use.

Potential subsidence, ponding of surface water, and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. An alternative is to lay out roads, wherever possible, around these soils.

This soil is poorly suited to use as a site for septic tank absorption fields because of possible subsidence, ponding, and moderately slow permeability. The absorption field could be placed on nearby Grenville or Pyrities soils, which are better suited to this use than the Carbondale soil.

The capability subclass is 5w. The forestland ordination symbol is 5W.

CgB—Colton-Duxbury complex, 2 to 8 percent slopes

This map unit consists of very deep, gently sloping soils on outwash plains and on the tops of low hills and ridges. Slopes are generally smooth, but a few areas are undulating. Areas of these soils are 20 to 100 acres, but the range is 10 to 300 acres. The unit is about 40 percent excessively drained Colton soil, 30 percent well drained Duxbury soil, and 30 percent other soils. Colton and Duxbury soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the Colton soil—

Surface layer
0 to 6 inches, dark reddish brown gravelly loamy sand

Subsoil
6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the Duxbury soil—

Surface layer
0 to 7 inches, dark brown silt loam

Subsoil
7 to 14 inches, strong brown silt loam

14 to 24 inches, dark yellowish brown gravelly loam

Substratum

24 to 72 inches, dark yellowish brown very gravelly coarse sand

Included with these soils in mapping are small areas of moderately well drained Croghan soils in low-lying or concave positions. Also included are some areas of mucky Loxley and Dawson soils in small depressions and small areas of sandy Adams soils on the top of knolls. Also included are loamy Berkshire soils on valley sides and on the tops of knolls and ridges. Included areas range to 6 acres and make up about 30 percent of this unit.

Important properties of the Colton soil—

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Duxbury soil

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are used as woodland or pasture. Some areas are cultivated.

These soils are fairly suited or poorly suited to cultivated crops. Droughtiness on the Colton soil and low soil reaction and low natural fertility on both Colton and Duxbury soils are the main limitations. Adding lime and fertilizer according to soil tests helps to increase fertility and soil reaction. On the Colton soil irrigation and dryland farming practices, including adding organic matter and mulch, help to overcome droughtiness. Irrigation may not be practical for most crops. In some areas gravel and cobbles in the surface layer of Colton soil can cause excessive wear on machinery.

This soil is fairly suited to hay and pasture. Maintaining proper stocking rates is needed, especially in summer, when droughtiness slows plant growth on the Colton soil. Overgrazing depletes vegetation and accelerates erosion. Low natural fertility and low soil reaction are also limitations. Adding lime and fertilizer according to soil tests helps to increase natural fertility, soil reaction, and yields.

Potential productivity for eastern white pine is moderate or high on these soils. The Colton soil is droughty, and the seedling mortality rate is severe. Planting during optimum moisture conditions helps to reduce the seedling mortality rate for planted stock. In some areas mulching with straw or excelsior is needed.

These soils are well suited to dwellings with basements. However, cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

These soils are is well suited to local roads and streets.

Rapid or very rapid permeability in the substratum is a severe limitation to use of these soils as a site for septic tank absorption fields. The soil is a poor filter of sewage effluent, and ground-water contamination is a hazard. Extensive alterations are required to correct these limitations. Included Berkshire soils are better suited to this use.

These soils are a probable source of sand and gravel, but numerous large stones and boulders are in the substratum.

The capability subclass is 3s for the Colton soil and 2e for the Duxbury soil. The forestland ordination symbol is 3S for the Colton soil and 8A for the Duxbury soil.

CgC—Colton-Duxbury complex, rolling

This map unit consists of very deep, strongly sloping soils on hummocks on outwash plains and on low hills and ridges. Slopes are generally complex and range from 5 to 15 percent. Areas of this unit are 20 to 60 acres, but the range is 10 to 100 acres. The unit is about 40 percent excessively drained Colton soil, 30 percent well drained Duxbury soil, and 30 percent other soils. The Colton and Duxbury soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the Colton soil—

Surface layer
0 to 6 inches, dark reddish brown gravelly loamy sand

Subsoil
6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the Duxbury soil—

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 14 inches, strong brown silt loam
14 to 24 inches, dark yellowish brown gravelly loam

Substratum:
24 to 72 inches, dark yellowish brown very gravelly coarse sand

Included with these soils in mapping are small areas of moderately well drained Croghan soils in low-lying or concave positions. Also included are some areas of mucky Loxley and Dawson soils in small depressions and small areas of sandy Adams soils on tops of knolls and on undulating terraces. Also included are some areas of loamy Berkshire soils on valley sides and on the tops of knolls and ridges. Included areas range to 6 acres and make up about 30 percent of this map unit.

Important properties of the Colton soil

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Duxbury soil

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. Some areas are used for pasture or hay. Very few areas are cultivated.

This map unit is poorly suited to cultivated crops. Droughtiness on the Colton soil, low natural fertility, low soil reaction, included wetter areas, and complex slopes are limitations. Erosion is a hazard, especially on the Duxbury soil. Many conservation measures, such as stripcropping, contour plowing, and terracing, are impractical on these complex slopes. Conservation tillage and crop rotations that emphasize sod crops help to control erosion. Irrigation and dryland farming, including adding organic matter and mulch, help to overcome droughtiness on the Colton soil. However, irrigation may not be practical for most crops grown in the area. Adding lime and fertilizer according to soil tests helps to increase fertility, soil reaction, and crop yields. In most areas the complex slopes and the included steeper areas and wetter depressions impede working the land efficiently. The depressions are too deep to fill, and most do not have adequate outlets for drainage.

These soils are poorly suited to pasture and hay. Overgrazing causes a hazard of erosion. Maintaining proper stocking rates is needed, especially in summer when plant growth on the Colton soil is slow because of droughtiness. Low natural fertility and soil reaction are also limitations. Adding lime and fertilizer according to soil tests helps to increase yields. Rotational grazing and yearly mowing help to sustain pasture seedlings and to increase productivity. However, mowing is difficult on the complex slopes and the included steeper areas.

Potential productivity for white pine on this map unit is moderate or high. Droughtiness caused by lack of water-holding capacity on the Colton soil is a more likely limitation for hardwoods than for softwoods. On the droughty Colton soil the seedling mortality rate is severe. Planting early in spring or late in fall allows plants to become established in still-moist soil and helps to reduce the seedling mortality rate. Mulching with straw or excelsior prevents the soils from drying out. White pine, red pine, Norway spruce, and white spruce grow well on these soils.

In steeper areas excessive slope is a moderate limitation to use of these soils as a site for dwellings with basements. Some less sloping areas, however, are more accommodating to construction. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Strongly sloping areas and included wet soils are the main limitations to use of these soils as a site for local roads and streets. In most areas of these soils cutting and filling is needed in constructing roads to avoid frequent grade and alignment changes. Planning is needed to avoid included wet soils in depressions.

Rapid permeability and strongly sloping slopes are the main limitations to use of these soils as a site for septic tank absorption fields. On both soils permeability is rapid, the soils are a poor filter of sewage effluent, and ground-water contamination is a hazard. An alternative or unconventional septic system, where code permits, helps to prevent contamination of ground water. Steepness of slope limits distribution of effluent from the septic tank to the absorption field. Using serial distribution or placing the absorption field in gently sloping areas of the unit helps to ensure uniform distribution of effluent throughout the absorption field. An alternative is to place the septic system on nearby or included soils, such as Berkshire soils, that are suitable for this use.

Some areas of these soils are an important source of sand and gravel; however, numerous large stones and boulders are in the substratum.

The capability subclass is 4s for the Colton soil and 3e for the Duxbury soil. The forestland ordination symbol is 3S for the Colton soil and 8A for the Duxbury soil.

CgD—Colton-Duxbury complex, hilly

This unit consists of steep soils on tops, sides, and intervening areas of hills and valleys. Slopes generally are complex, and consist of valley sides broken by streams and networks of ridges and hills. The dominant slope range is 15 to 35 percent. Most areas are 20 to 40 acres, but the range is 10 to 80 acres. The unit is about 40 percent Colton soil, 40 percent Duxbury soil, and 20 percent other soils. The Duxbury and Colton soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the Colton soil—

Surface layer:
0 to 6 inches, dark reddish brown, gravelly loamy sand

Subsoil:
6 to 7 inches, dark reddish brown very gravelly sand
7 to 14 inches, reddish brown very gravelly sand
14 to 20 inches, mixed brown and pale brown very gravelly sand

Substratum:
20 to 72 inches, mixed brown and pale brown very gravelly sand

Typical sequence, depth, and composition of the Duxbury soil—

Surface layer:
0 to 7 inches, dark brown silt loam

Subsoil:
7 to 14 inches, strong brown silt loam
14 to 24 inches, dark yellowish brown gravelly loam

Substratum:
24 to 72 inches, dark yellowish brown very gravelly coarse sand

Included with this soil in mapping are small areas of moderately well drained Croghan soils and very poorly drained Loxley and Dawson soils in depressions between hills. Also included are small areas of Borosaprists and Fluvaquents along streams, small areas of Adams soils on tops of hills, and areas of Berkshire soils on hills and ridges. Adams and Berkshire soils are not as gravelly as Colton and Duxbury soils. Dawson and Loxley soils, Borosaprists, and Fluvaquents make up about 15 percent of this unit. Included soils range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Colton soil

Permeability: Rapid or very rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches

Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Duxbury soil

Permeability: Moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to slightly acid in the surface layer and in the upper part of the subsoil and very strongly acid to slightly acid in the lower part of the subsoil and in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. Some areas are pasture.

These soils are poorly suited to cultivated crops. Slopes are steep and erosion is a hazard. A continuous cover of sod helps to control erosion.

These soils are poorly suited to pasture. Erosion is a severe hazard. During pasture seeding, careful management of stocking rates, especially during dry periods in summer, helps to control erosion. Low soil reaction, droughtiness, and low natural fertility are also limitations. Adding lime and fertilizer according to soil tests helps to improve soil reaction and natural fertility. If droughtiness reduces plant growth in summer, these soils are susceptible to overgrazing.

Potential productivity for white pine on these soils is moderate or high. Erosion is a hazard where logging or road construction exposes the soil. Laying out skid trails and logging roads on the contour and building water bars to protect roads and trails when not in use help to control erosion. Also, planting a ground cover as soon as possible after construction helps to stabilize cut and fill slopes. Machine planting of seedlings is difficult because of steep, complex slopes. The Colton soil is droughty, and the seedling mortality rate is severe. Seedlings should be planted early in spring or late in fall, when soil moisture is adequate. Eastern white pine, red pine, white spruce, and balsam fir grow well on these soils.

These soils are poorly suited to use as a site for dwellings with basements because of slope. Steep slope increases the difficulty of excavating and grading for most dwelling designs. Erosion is a hazard on building sites where the soil is exposed. Using special house designs that conform to slope or building the house in less sloping areas that are nearby or included help to overcome slope. Limiting the area that construction activities disturb, planting a ground cover, and stabilizing the site during or soon after construction help to control erosion. Cutbanks caving in is a hazard on these soils. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

These soils are poorly suited to local roads and streets. Steep slopes are the main limitation. Altering the grade and cutting and filling help to overcome slope. Vegetating and stabilizing cut and fill slopes soon after construction help to control erosion. An alternative is to route roads to nearby or included, less sloping areas.

These soils are poorly suited to septic tank absorption fields because of permeability and slope. They are a poor filter of sewage effluent, and ground-water contamination is a hazard. Unconventional septic systems, where code permits, could work on these soils. Excessive slope is a severe limitation. Slope causes unequal distribution of effluent to the absorption field. Constructing absorption lines on the contour helps to ensure uniform distribution of effluent throughout the absorption field. An alternative is to place the absorption field on included or nearby soils, such as Berkshire soils, that have a more favorable permeability for this use.

The capability subclass is 7s for the Colton soil and 6e for the Duxbury soil. The forestland ordination symbol is 3S for the Colton soil and 8R for the Duxbury soil.

Ck—Cook loamy fine sand

This is a very deep, very poorly drained and poorly drained, nearly level soil on beach deposits within glacial till plains covered with a thin veneer of sand. It is also on toeslopes and in shallow troughs below low ridges. It is nearly level and generally on slightly concave landforms. Slopes range from 0 to 2 percent. Areas of this soil are mostly irregular in shape and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers in the Cook soil—

Surface layer:
0 to 7 inches, very dark gray loamy fine sand

Substratum:
7 to 39 inches, grayish brown loamy sand
39 to 72 inches, gray, stony sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Coveytown soils in slightly higher areas on the landscape. Also included are excessively drained Trout River soils and moderately well drained Fahey soils on ridges, some small areas of well drained Pyrities soils, and moderately well drained Kalurah soils on small hills and knolls. Also included are small areas of excessive stoniness. Included areas range to 6 acres and make up about 25 percent of this map unit.

Important properties of the Cook soil—

Permeability: Moderately rapid in the surface layer, rapid in the upper part of the substratum, and moderately slow in the lower part of the substratum
Available water capacity (average for a 40-inch soil profile): Low
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the upper part of the substratum, and neutral to moderately alkaline in the lower part of the substratum.
Erosion hazard: Low
Depth to water table: A high water table ranges from the soil surface to a depth of 6 inches from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland. A few areas are used for pasture. Some areas that were cleared for agriculture are reverting to brush.

This soil is poorly suited to cultivated crops. Wetness is the main limitation. Cultivation and planting are difficult because the surface layer is saturated in spring. The seasonal high water table also severely restricts the rooting depth of plants, and crop growth is poor. Artificial drainage helps to improve productivity and ease of cultivation; however, the soil is in a low position on the landscape, and finding suitable drainage outlets is difficult.

This soil is poorly suited to hay and pasture. In most years stands of hay are not productive because the surface layer is saturated much of the growing season. Drainage is needed for these soils to be productive. However, the soil is in a low position on the landscape, and establishing effective drainage outlets is difficult. Grazing when the soil is wet causes surface compaction and loss of productivity. Restricting stock when the soil is saturated helps to maintain good tilth. Fertilizing and mowing also help to improve the quality of forage.

Potential productivity for white pine on this soil is low. The soil is generally too wet for machine planting of seedlings. Operating planting and harvesting equipment on saturated soil causes surface compaction. Logging in late summer when the soil is relatively dry or in winter when the soil is frozen reduces problems from equipment use. The seedling mortality rate is severe because the soil is saturated much of the year. The seasonal high water table limits the rooting depth of trees and the windthrow hazard is severe, especially adjacent to open areas. Planting water-tolerant species helps to reduce windthrow. Plant competition interferes with regeneration on this soil. In some areas extensive site preparation is needed to overcome plant competition and stress on seedlings.

The seasonal high water table is a severe limitation to use of this soil as a site for dwellings with basements. Placing drains by footings and shaping the land so water flows away from dwellings help to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Installing adequate drainage and sealing basements are difficult on these soils. An alternative is to place dwellings on included or nearby soils, such as Pyrities soils, that are better suited to this use.

The seasonal high water table is a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to reduce wetness.

This soil is unsuitable for septic tank absorption fields. The seasonal high water table and moderately slow permeability in the substratum are severe limitations. However, the filter field could be placed on better suited, included soils, such as well drained Pyrities soils.

The capability subclass is 4w. The forestland ordination symbol is 6W.

Cn—Cornish silt loam

This is a very deep, somewhat poorly drained, nearly level soil formed in recent alluvium on flood plains along major streams, mainly the Oswegatchie River. Slopes range from 0 to 2 percent. Most areas of this soil are long and narrow. Areas are parallel to streams and range from 15 to 50 acres.

Typical sequence, depth, and composition of the layers in the Cornish soil—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:

8 to 11 inches, dark yellowish brown silt loam
11 to 21 inches, brown silt loam

Substratum:
21 to 46 inches, light brownish gray and gray silt loam
46 to 72 inches, very dark grayish brown and gray silt loam

Included with this soil in mapping are small areas of very poorly drained to somewhat poorly drained, highly variable Borosaprists and Fluvaquents in old slackwater areas or in partially filled oxbows. Also included are moderately well drained Lovewell soils on higher, better drained parts of the flood plain and some small areas, generally on knolls above flood plains, of moderately well drained Eelweir and Croghan soils. Also included, notably along the border of Jefferson County, are some areas of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Cornish soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Very strongly acid to slightly acid throughout
Erosion hazard: Slight
Depth to water table: At a depth of 1 to 2 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Subject to frequent flooding

Most areas of this soil are used for hayland or pasture. A few areas are in cultivated crops. Some areas are woodland or brushland.

This soil is poorly suited to cultivated crops. Planting is subject to frequent delays because of wetness. Drainage helps to alleviate wetness. Flooding is a hazard generally in March and April, and normally floodwater subsides before planting. The floods that occasionally occur after planting can destroy plants and pollute streams with herbicides and plant nutrients. Including cover or sod crops in the cropping system helps to protect the surface from scouring during flooding. Tree borders and green strips along streams help to stabilize streambanks.

This soil is fairly suited to hay and pasture. Grazing when the soil is wet causes surface compaction. Restricting stock from pasture in early spring and during other wet periods helps to prevent surface compaction and to maintain good soil tilth. The seasonal high water table limits root growth of some legumes. Installing subsurface drainage and selecting naturally shallow-rooted, water-tolerant grasses and legumes help to improve the productivity of pasture and hayland. Building fences and planting tree borders along streambanks help to control streambank erosion.

Potential productivity for eastern white pine on this soil is moderately high. In some years flooding and the seasonal high water table impede use of heavy equipment in spring and during other wet periods. Flooding causes a severe seedling mortality rate, which can be reduced if more adaptable tree species are planted.

This soil is poorly suited to dwellings because of frequent flooding and wetness. Dwellings could be built on adjacent uplands where soils are not subject to flooding and generally have fewer limitations to this use.

Wetness, flooding, and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness and flooding. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. An alternative is to lay out roads and streets around this soil.

This soil is poorly suited to use as a site for septic tank absorption fields because of frequent flooding and wetness. The absorption field could be placed on adjacent uplands where soils are on not subject to flooding and generally have fewer limitations to this use.

The capability subclass is 3w. The forestland ordination symbol is 8W.

Cp—Coveytown loamy fine sand

This is a very deep, nearly level, somewhat poorly drained soil on low glacial till plains covered with a thin veneer of sand and on footslopes and the upper toeslopes of low ridges. Most areas are broad and irregular in shape. Areas range from 6 to more than 200 acres. Typically, slopes are smooth and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers in the Coveytown soil—

Duff layer:
0 to 1 inch, slightly decomposed forest litter

Surface layer:
1 to 5 inches, very dark gray loamy fine sand

Subsoil:

5 to 20 inches, brown gravelly loamy fine sand
20 to 38 inches, brown gravelly loamy sand

Substratum:
38 to 72 inches, brown and yellowish brown gravelly sandy loam

Included with these soils in depressions and swales are small areas of very poorly drained Dorval and Munuscong soils. Also included are excessively drained Trout River soils and moderately well drained Fahey soils on small ridges and well drained, loamy Grenville soils on small, isolated hills. Also included are small areas of loamy Malone soils on some hummocks and slight knolls, some small areas of Stockholm soils that have a clayey substratum, and some small areas of sandy Naumburg soils. Included soils make up about 30 percent of this unit.

Important properties of the Coveytown soil—

Permeability: Moderately rapid or rapid in the surface layer and subsoil and moderate or moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Strongly acid to slightly acid in the surface layer, strongly acid to neutral in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Low
Depth to water table: At a depth of 0.5 to 1.5 feet from December to May
Potential for frost action: Moderate
Shrink-swell potential: Very low in the surface layer and the subsoil and low in the substratum
Flooding hazard: None

Most areas of this soil are woodland. Some areas are used as hayland or pasture. A few areas are cultivated.

This soil is moderately suited to cultivated crops. Wetness and low natural fertility are the main limitations. Installing subsurface drainage and, generally, open ditches help to reduce wetness, but in some places grade is insufficient for a natural outlet. Adding lime and fertilizer according to soil tests and in several small applications helps to reduce leaching on this soil and to improve fertility.

This soil is suited to pasture and hay. It is more productive and will support shallow-rooted legumes if it has artificial drainage and is top dressed with manure and fertilizer. Grazing in spring when the soil is wet causes surface compaction and loss of pasture seeding. Fencing drainage ditches prevents animal traffic from sloughing banks.

Potential productivity for red maple on this soil is moderate. The seasonal high water table limits use of heavy equipment in spring and during other wet periods. Logging when the surface is dry or in winter when it is frozen reduces the problems from heavy equipment use. Wetness limits seedling survival. Planting water-tolerant species helps to improve productivity. The seasonal high water table limits root development and excessive windthrow is a hazard. Planting adaptable, shallow-rooted species and limiting the size of stand openings created during logging and thinning operations help to reduce windthrow.

The seasonal high water table is a severe limitation to use of this soil as a site for dwellings. Drainage systems that carry subsurface water away from cellars, footers, and slab foundations help to reduce wetness. Adequately sealing the foundation helps to prevent wet basements. An alternative is to build dwellings on adjacent or included soils, such as Grenville soils, that are better drained than the Coveytown soil.

The seasonal high water table is a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to reduce wetness.

This soil is poorly suited to septic tank absorption fields. The seasonal high water table, moderately slow permeability in the substratum, and rapid permeability in the subsoil can cause effluent to seep out or to well up at the surface. In most areas a specially designed system is needed if this soil is used for waste disposal. An alternative is to place the absorption field on nearby or included soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 3w. The forestland ordination symbol is 2W.

Cr—Coveytown and Cook soils, very stony

This map unit consists of very deep, somewhat poorly drained to very poorly drained, nearly level and gently sloping soils on glacial till plains covered with a thin veneer of sand. It is in low positions between low ridges and hills. Slopes are mostly simple and range from 0 to 6 percent. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface of these soils. Areas of this unit have various shapes. Most areas are 40 to 80 acres, but the range is 6 to 80 acres. The soils in this unit are similar in use and interpretation, and were not separated in mapping. The unit is about 55 percent somewhat poorly drained Coveytown soils, 25 percent very poorly drained and poorly drained Cook soils, and 20 percent other soils. Generally, Coveytown and Cook soils are somewhat intermingled, but some map units are almost all either Coveytown or Cook soils.

Typical sequence, depth, and composition of the Coveytown soils—

Duff layer:
0 to 1 inch, slightly decomposed forest litter

Surface layer:
1 to 5 inches, very dark gray loamy fine sand

Subsoil:
5 to 20 inches, brown gravelly loamy fine sand
20 to 38 inches, brown gravelly loamy sand

Substratum:
38 to 72 inches, brown and yellowish brown gravelly sandy loam

Typical sequence, depth, and composition of the Cook soils—

Surface layer:
0 to 7 inches, very dark gray loamy fine sand

Substratum:
7 to 39 inches, grayish brown loamy sand
39 to 72 inches, gray sandy loam

Included with this soil in mapping are small areas of Dorval and Carbondale soils in pockets where organic material has accumulated. Also included are small areas of well drained Pyrities soils on pronounced hummocks and in small areas of sandy Searsport and Naumburg soils in deposits of deep sands. Also included are small areas of Munuscong soils that have a clayey substratum and small areas of excessively drained Trout River soils and moderately well drained Fahey soils on slight ridges. Inclusions range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Coveytown soils—

Permeability: Moderately rapid or rapid in the surface layer and subsoil and moderate or moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Low
Soil reaction: Strongly acid to slightly acid in the surface layer, strongly acid to neutral in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Low
Depth to water table: Ranges from 6 to 18 inches below the surface in December to May
Potential for frost action: Moderate
Shrink-swell potential: Very low in the surface layer and the subsoil and low in the substratum
Flooding hazard: None

Important properties of the Cook soils—

Permeability: Moderately rapid in the surface layer, rapid in the upper part of the substratum, and moderately slow in the loamy part of the substratum
Available water capacity (average for a 40-inch soil profile): Very low to moderate
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the upper part of the substratum, and neutral or slightly alkaline in the loamy part of the substratum
Erosion hazard: Low
Depth to water table: Ranges from the surface to a depth of 6 inches in November to June
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are poorly suited to cultivated crops. Stoniness and wetness are the main limitations. Tillage is impossible because of stones and boulders on the soil surface. The high water table in Cook soils delays planting too long into summer for most crops grown in the area.

These soils are poorly suited to pasture. The surface is saturated for much of the growing season and in most years pastures are not productive. Soil drainage helps to improve wetness, but constructing outlets is difficult in most areas of these soils, which are in low places on the landscape. Grazing when the soil is wet causes surface compaction. Restricting livestock when the soil is saturated helps to maintain good tilth. Low fertility on these soils is also a limitation.

Potential productivity for trees on these soils is low or moderate. The soils are generally too wet and bouldery for machine planting of seedlings. Operating planting and harvesting equipment when these soils are saturated causes surface compaction. Logging when the ground is frozen or in late summer when the soils are relatively dry reduces problems from equipment use. The seedling mortality rate is severe because the soils are saturated much of the year. On better drained soils delaying planting seedlings so plants establish a root system in relatively dry soil conditions helps to reduce the seedling mortality rate. The seasonal high water table limits the rooting depth of trees, and windthrow is a hazard. Selecting adaptable, shallow-rooted species and avoiding clearcutting help to reduce windthrow. Intensive site preparation helps to overcome plant competition.

These soils are poorly suited to dwellings with basements because wetness is a severe limitation. If Coveytown soils are used for dwellings, flood drains could be built and basement walls could be sealed. An alternative is to build dwellings on nearby or included soils, such as Pyrities soils, that are better suited to this use.

The seasonal high water table is a severe limitation to use of these soils as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness.

These soils are unsuitable for septic tank absorption fields because of the seasonal high water table and generally rapid permeability in the surface layer and the subsoil and slow permeability in the substratum. These limitations cause effluent to well up and seep out as unfiltered effluent at the surface. Although the limitations are very difficult to overcome, a mound system, where code permits, could be used. An alternative is to place the septic system on nearby or included soils, such as Pyrities soils where slope is not a limitation, that are better suited to this use.

The capability subclass is 5s for Coveytown soils and 7s for Cook soils. The forestland ordination symbol is 2W for Coveytown soils and 6W for Cook soils.

CsB—Crary silt loam, 3 to 8 percent slopes

This is a very deep, gently sloping, moderately well drained soil on concave footslopes, on broad hilltops, and along drainageways on glacial till plains. Most areas of this soil are long and narrow along slopes or drainageways, but some areas are irregular in shape. Areas range from 6 to 30 acres.

Typical sequence, depth, and composition of the Crary soils—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 14 inches, dark brown silt loam
14 to 20 inches, yellowish brown very fine sandy loam
20 to 24 inches, grayish brown very fine sandy loam

Substratum:
24 to 72 inches, brown stony fine sandy loam

Included with this soil in mapping are small areas of poorly drained Lyme soils and very poorly drained Tughill soils in depressions and at the bottom of drainageways. Also included are well drained Potsdam soils on slight convex rises, Tunbridge soils on benches or on noses of small ridges where bedrock is within 40 inches of the surface, and small areas of rock outcrops. Also included are moderately well drained Sunapee soils where the Crary soil does not have a fragipan, small areas of Adams and Colton soils where ancient stream action deposited sand or gravel, and some areas of soils that have significantly steeper slopes than those of the Crary soil. Included areas range to 6 acres, and make up about 20 percent of this map unit.

Important properties of the Crary soil—

Permeability: Moderate in the surface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: Perched at a depth of 1.5 to 2 feet from February to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as pasture or hayland. Other areas were cleared but have reverted to brushland or woodland.

This soil is well suited to cultivated crops. The firm, dense substratum limits the root zone. Shallow-rooted, short-season species are adapted to this soil. Erosion is a hazard on long slopes or in extensive cultivated areas. Conservation tillage or a cover crop established after harvest helps to control erosion. Low soil reaction has an adverse effect on natural fertility. Adding lime and fertilizer according to soil tests helps to produce good yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to hayland and pasture. Overgrazing can lead to loss of pasture seeding. Grazing when the soil is wet causes surface compaction and decreased yields. Rotational grazing, managing stocking rates, applying lime and fertilizer according to soil tests, and yearly mowing help to control erosion, to maintain pasture seedlings, and to sustain productivity.

Potential productivity for sugar maple on this soil is moderate or high. There are few limitations to planting, harvesting, or managing woodlots on this soil.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings and shaping the land to move surface water away from the dwelling helps to reduce wetness. An adequate foundation seal helps to prevent wet basements.

Potential for frost action and the seasonal high water table are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness.

The seasonal high water table and slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Placing a drainage system around the filter field and installing diversions to intercept water from higher areas help to reduce wetness. Enlarging the absorption field or using a wide, deep trench below distribution lines helps to compensate for slow permeability.

The capability subclass is 2e. The forestland ordination symbol is 3W.

CtB—Crary and Potsdam soils, 3 to 8 percent slopes, very bouldery

This map unit consists of very deep, gently sloping soils on glacial till plains. Typically, the moderately well drained Crary soils are on footslopes, broad backslopes, and slight benches and the well drained Potsdam soils are on upper side slopes and on convex knolls and hilltops. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of this unit are generally irregular in shape. Most areas are 6 to 50 acres, but the range is 6 to 100 acres. The unit is about 45 percent Crary soils, 30 percent Potsdam soils, and 25 percent other soils. Most areas of this unit consist mainly of Crary or Potsdam soils, but some areas consist of both soils. Crary and Potsdam soils are similar in use and management and were mapped together.

Typical sequence, depth, and composition of the Crary soils—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 14 inches, dark brown silt loam
14 to 20 inches, yellowish brown very fine sandy loam
20 to 24 inches, grayish brown very fine sandy loam

Substratum:
24 to 72 inches, brown stony fine sandy loam

Typical sequence, depth, and composition of the Potsdam soils—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Included with these soils in mapping are small areas of poorly drained Lyme soils and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of moderately deep Tunbridge soils where bedrock is less than 40 inches below the surface, small areas of rock outcrops, and areas of permeable Berkshire soils where the substratum is less firm and dense than that in the Crary and Potsdam soils. Also included are sandy Adams soils and sandy and gravelly Colton soils where flowing water deposited small pockets of stratified sand and gravel and a few small areas without boulders and stones on the surface. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Crary soils

Permeability: Moderate in the surface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: Perched at a depth of 1.5 to 2 feet from February to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Important properties of the Potsdam soils

Permeability: Moderately slow to moderately rapid in the surface layer and subsoil and slow in the substratum

Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: Perched at a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. Some areas are old meadows or clearings.

These soils are poorly suited to cultivated crops because many boulders and stones are on the surface. Removing stones and boulders from these soils would be too costly for the crops normally grown in the area.

These soils are poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and to maintain pasture. Managing stocking rates and controlling brush are the main management concerns.

Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on these soils is moderate or high. Boulders on the surface hinder use of machinery for planting and some other operations.

Seasonal wetness is the main limitation to use of these soils as a site for dwellings with basements. Installing drains by footings and shaping the land to move surface water away from dwellings help to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Erosion is a hazard in the more sloping areas cleared during construction. Establishing a vegetative cover as soon as possible after construction and controlling runoff during construction help to control erosion. In some areas the surface needs to be cleared of boulders when planting a lawn on these soils.

Potential for frost action and seasonal wetness are limitations to use of these soils as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Erosion is a hazard during construction, and vegetating and stabilizing disturbed areas are needed during or as soon as possible after construction.

Slow permeability and seasonal wetness are the main limitations to use of these soils as a site for septic tank absorption fields. Providing interceptor drains to divert some water, enlarging the absorption field, and placing a wide, deep trench below the distribution lines help to reduce wetness and to compensate for slow permeability. An alternative is to place the absorption field on nearby or included soils, such as Berkshire soils, that are better drained and more permeable than the Crary and Potsdam soils.

The capability subclass is 6s for Crary and Potsdam soils. The forestland ordination symbol is 3W for Crary soils and 3A for Potsdam soils.

CuB—Croghan sand, 0 to 8 percent slopes

This is a very deep, moderately well drained soil in nearly level, gently sloping areas of broad sand plains. Areas of this soil are irregular in shape and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers in the Croghan soil—

Surface layer:
0 to 7 inches, dark brown sand

Subsurface layer:
7 to 10 inches, pinkish gray sand

Subsoil:
10 to 12 inches, dark reddish brown sand
12 to 20 inches, red sand
20 to 33 inches, strong brown fine sand
33 to 44 inches, brown fine sand

Substratum:
44 to 72 inches, brown fine sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low-lying pockets and along drainageways. Also included are somewhat excessively drained and excessively drained Adams soils on convex knobs and steeper slopes, some areas of more gravelly Fahey soils, and some areas of loamy Crary, Kalurah, and Sunapee soils, commonly with stony surfaces, on knolls and on other high parts of the landscape. Also included are small areas of soils on significantly greater slopes than those of the Croghan soil and some small areas of soils that have a cemented layer 10 to 16 inches below the surface. Included areas range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Croghan soil—

Permeability: Rapid in the surface layer and very rapid in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Very strongly acid to moderately acid in the surface layer and very strongly acid to moderately acid below
Erosion hazard: Moderate
Depth to water table: At a depth of 1.5 to 2.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are woodland. Some areas are in cultivated crops, hay, or pasture. A few areas are used as building sites.

This soil is well suited to most cultivated crops. Droughtiness is a problem on this sandy soil, which holds little water available for plants. Low natural fertility and seasonal wetness are also limitations for crops. Erosion is a hazard on the longer, steeper slopes. Adding organic matter, lime, and fertilizer helps to improve fertility. Applying lime and fertilizer in frequent, small increments rather than all at once to this permeable soil will prevent substantial losses from leaching. Low and very low water holding capacity causes droughtiness. Growing green manure crops and adding other organic matter help to improve water holding capacity. Irrigation can overcome droughtiness, but it is generally not cost effective unless combined with specialty crops. In some years a seasonal high water table delays planting in spring and harvesting in fall. Installing tile drains help to improve drainage. Conservation tillage helps to control wind and water erosion and to conserve soil moisture.

This soil is suitable for hay and pasture. Low natural fertility and available water capacity limit productivity. Adding lime and fertilizer in small increments according to soil tests helps to improve fertility and to sustain beneficial plants. Proper stocking rates and pasture rotations help to protect desirable plants subject to overgrazing in summer, when the soil has little available water for plants.

Potential productivity for trees on this soil is moderate. The soil is well adapted to machine planting of seedlings. The soil is droughty, and seedling mortality is a hazard. Plantings should be made in early spring or late fall, when available soil moisture is most plentiful. Forest protection from wildfire is important on this soil because vegetation is difficult to reestablish if the surface layer is destroyed.

The seasonal high water table is the main limitation to use of these soils as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Included areas of Adams soils have few limitations for dwellings.

Potential for frost action and the seasonal high water table are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness.

The seasonal high water table and excessive permeability are the main limitations to use of this soil as a site for septic tank absorption fields. In some areas a special or unconventional septic system is needed. The soil is a poor filter of sewage effluent, and ground-water contamination is a hazard. An alternative is to place the septic system on nearby or included areas of soils more favorable to this use.

The capability subclass is 2w. The forestland ordination symbol is 10S.

CvA—Croghan loamy fine sand, 0 to 3 percent slopes

This is a very deep, moderately well drained soil in nearly level areas of sand plains. Areas of this soil are irregular in shape and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Croghan soil—

Surface layer:
0 to 7 inches, dark brown loamy fine sand

Subsurface layer:
7 to 10 inches, pinkish gray sand

Subsoil:
10 to 12 inches, dark reddish brown sand
12 to 20 inches, red sand
20 to 33 inches, strong brown fine sand
33 to 44 inches, brown fine sand

Substratum:
44 to 72 inches, brown fine sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low-lying pockets and along drainageways. Also included are well drained to excessively drained Adams soils on convex knobs and steeper slopes;

some areas of the more gravelly Fahey soils; areas of Flackville soils where a clay substratum is at a depth of 20 to 40 inches; and areas of loamy Hogansburg and Kalurah soils, which commonly have a stony surface, on knolls and other high parts of the landscape. Also included are small areas of soils that have a significantly greater slope than that of the Croghan soil and some small areas of soils that have a cemented layer 10 to 16 inches below the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Croghan soil—

Permeability: Rapid in the surface layer and very rapid in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Very strongly acid to moderately acid in the surface layer and very strongly acid to moderately acid below
Erosion hazard: Slight
Depth to water table: At a depth of 1.5 to 2.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are used as woodland or for agriculture. A few areas are used as building sites.

This soil is suited to many cultivated crops. Low natural fertility, droughtiness in summer, and the seasonal high water table are the main limitations. Erosion is a hazard on longer, steeper slopes. Adding organic matter, lime, and fertilizer help to improve fertility. Applying fertilizer and lime in frequent, small increments rather than all at once on this very rapidly permeable soil helps to prevent substantial losses from leaching. Low or very low water holding capacity causes droughtiness on this soil. Growing green manure crops and adding organic matter help to improve water holding capacity. Irrigation helps to overcome droughtiness, but on this soil irrigation generally is not cost effective unless combined with specialty crops. In some years a seasonal high water table delays planting in spring and harvesting in fall. Installing tile drains helps to reduce wetness. Conservation tillage helps to control wind and water erosion and to conserve soil moisture.

This soil is suited to hay and pasture. Adding soil amendments helps to improve fertility and to sustain beneficial plants. Maintaining proper stocking rates and rotating pastures help to protect desirable plants subject to overgrazing in summer when the soil has little water available for plants.

Potential productivity for white pine on this soil is moderate. The soil is well adapted to machine planting of seedlings. It is droughty, however, and seedling mortality is a hazard. Planting in early spring or late fall when soil moisture is most available helps to ensure good growth of seedlings. Protecting the forest from wildfire is important on this soil because vegetation is difficult to reestablish if the surface layer is destroyed.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Included areas of Adams soils have few limitations for dwellings.

Potential for frost action and the seasonal high water table are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness.

The seasonal high water table and very rapid permeability are the main limitations to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of sewage effluent, and ground-water contamination is a hazard. In some areas a special or unconventional septic system is needed. An alternative is to place the septic system on nearby or included soils that are more favorable than the Croghan soil to this use.

The capability subclass is 2w. The forestland ordination symbol is 10S.

CvB—Croghan loamy fine sand, 3 to 8 percent slopes

This is a very deep, gently sloping, moderately well drained soil on slightly convex parts of sand plains. Areas of this soil are irregular in shape and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers in the Croghan soil—

Surface layer:
0 to 7 inches, dark brown loamy fine sand

Subsurface layer:
7 to 10 inches, pinkish gray sand

Subsoil:
10 to 12 inches, dark reddish brown sand
12 to 20 inches, red sand
20 to 33 inches, strong brown fine sand
33 to 44 inches, brown fine sand

Substratum:
44 to 72 inches, brown fine sand

Included with this soil in mapping are small areas of somewhat poorly drained and poorly drained Naumburg soils and very poorly drained Searsport soils in low-lying pockets and along drainageways. Also included are well drained to excessively drained Adams soils on convex knobs and steeper slopes, areas of more gravelly Fahey soils, and areas of Flackville soils where a clay substratum is at a depth of 20 to 40 inches. Also included are some areas of loamy Hogansburg and Kalurah soils that in most areas have stones on the surface and that are on knolls and on other, high parts of the landscape. Also included are small areas of soils that have a cemented layer 10 to 16 inches below the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Croghan soil—

Permeability: Rapid in the surface layer and very rapid in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Very strongly acid to moderately acid in the surface layer and very strongly acid to moderately acid below
Erosion hazard: Moderate
Depth to water table: At a depth of 1.5 to 2.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are used as woodland or for agriculture. A few areas are used as building sites.

This soil is suitable for many cultivated crops. Low natural fertility, droughtiness in summer, and a seasonal high water table are the main limitations. Erosion is a hazard on longer, steeper slopes. Adding organic matter, lime, and fertilizer help to improve fertility. Applying fertilizer and lime in frequent, small increments rather than all at once on this very rapidly permeable soil will prevent substantial losses from leaching. This soil is droughty because of low and very low water holding capacity. Growing green manure crops and adding other organic matter help to improve water holding capacity. Irrigation helps to overcome droughtiness, but in most years it is not cost effective unless combined with some specialty crops. In some years a seasonal high water table delays planting in spring and harvesting in fall. Installing tile drains helps to improve drainage. Conservation tillage helps to control wind and water erosion and to conserve soil moisture.

This soil is suited to hay and pasture. Adding soil amendments helps to improve fertility and to sustain beneficial plants. Proper stocking rates and rotating pastures help to protect desirable plant varieties subject to overgrazing in summer, when the soil has little water available for plants.

Potential productivity for trees on this soil is high. The soil is well adapted to machine planting of seedlings. Seedling mortality is a hazard because the soil is droughty. Planting early in spring or late in fall when soil moisture is most available helps to ensure good growth. Protecting forests from wildfire is important on these soils because vegetation is difficult to reestablish if the surface layer is destroyed.

The seasonal high water table is the main limitation to use of these soils as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. An alternative is to build dwellings on included areas, such as Adams soils, that have few limitations to this use.

Potential for frost action and the seasonal high water table are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness.

The seasonal high water table and the very rapid permeability are the main limitations to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of sewage effluent, and ground-water contamination is a hazard. A special or an unconventional septic system is needed to compensate for permeability and the poor filter. An alternative is to place the septic system on nearby or included areas of soils that are better suited than the Croghan soil to this use.

The capability subclass is 2w. The forestland ordination symbol is 10S.

Da—Dawson peat

This is a very deep, nearly level, very poorly drained soil formed in moderately deep organic deposits in low-lying basins and depressions. Small hummocks and microknolls are prevalent across the surface of an otherwise smooth terrain. Slopes range from 0 to 2 percent. Most areas of this map unit are 10 to 200 acres, but the range is 6 to 1,000 acres.

Typical sequence, depth, and composition of the layers in the Dawson soil—

Surface layer:
0 to 5 inches, yellowish brown peat

Subsurface layer:
5 to 30 inches, black muck

Substratum:
30 to 72 inches, gray loamy sand

Included with this soil in mapping are small areas of Loxley muck in deeper organic deposits near the center of the unit. Also included are small areas of very poorly drained Searsport soils and somewhat poorly drained and poorly drained Naumburg soils on slight knolls or at the edge of the unit and excessively drained Colton soils; somewhat excessively drained and excessively drained Adams soils; and moderately well drained Croghan soils on knolls, gentle ridges, or large hummocks. Searsport, Naumburg, Croghan, and Adams soils are all sandy, and Colton soils are sandy and gravelly. Also included are well drained Berkshire soils, very poorly drained Tughill soils, and somewhat poorly drained and poorly drained Lyme soils, all of which are loamy; Tughill soils commonly have stones and boulders on the surface. Also included are some small areas of bedrock. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Dawson soil—

Permeability: Moderate or moderately rapid in the surface layer, moderately slow to moderately rapid in the underlying organic material, and rapid in the sandy substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic material and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from September to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are woodland. Some areas are open sphagnum bogs.

These soils are not suited to agriculture unless they are drained. They are generally in the lowest areas of the landscape where drainage outlets are difficult to find.

Potential productivity for balsam fir on these soils is low or moderate. The seedling mortality rate is severe because of the seasonal high water table. Selecting water-tolerant species helps to improve seedling survival. Windthrow is a severe hazard because the high water table restricts root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. The soil is soft and unstable when wet and will not support heavy planting or logging equipment. Logging in winter when the ground is frozen reduces the problems from heavy equipment use.

This soil is poorly suited to building site development. The soil is soft and unstable when wet and subsides when the water table is lowered. Ponding and the seasonal high water table are severe limitations to building site development. An alternative is to locate building sites on nearby or included soils, such as Berkshire soils, that are better suited to this use.

The capability subclass is 5w. The forestland ordination symbol is 2W.

Dd—Deford loamy fine sand

This is a very deep, nearly level, poorly drained soil in slightly concave, low-lying areas of lake plains or deltas. Slopes range from 0 to 2 percent. Areas of this soil are mainly irregular in shape, except along drainageways, where they are long and narrow. Most areas are 6 to 50 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers of the Deford soil—

Surface layer:
0 to 8 inches, very dark grayish brown loamy fine sand

Subsoil:
8 to 14 inches, gray loamy fine sand
14 to 24 inches, brownish gray and grayish brown loamy fine sand

Substratum:
24 to 31 inches, yellowish brown loamy fine sand
31 to 72 inches, gray fine sand

Included with this soil in mapping are small spots of Dorval muck in wetter pockets where organic matter accumulates on the surface. Also included are Swanton and Stockholm soils where clay is at a depth of 20 to 40 inches and, in the higher topography, areas of Mino soils that have slightly more silt and less sand than the Deford soil. Also included are small areas of loamy and generally stony Runeberg soils and some small areas of moderately well drained, loamy

Hogansburg soils on small hills. Inclusions range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Deford soil—

Permeability: Rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Moderately acid to slightly alkaline in the surface layer and the subsoil and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: At the surface to a depth of 1 foot from October to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland. Some areas are used as pasture or hayland or are idle.

This soil is poorly suited to cultivated crops. In spring, the water table at or near the surface hinders planting operations and limits root growth. In drained areas, this soil is fairly suited to cultivated crops. In some places drainage outlets are difficult to establish because the soil is in low-lying positions. The rapid permeability causes excessive leaching of plant nutrients. Frequent, light applications of fertilizer help to produce good yields.

This soil is suited to pasture and hayland. Where it has artificial drainage and is top dressed with manure and fertilizer, it is more productive and can support shallow-rooted legumes. Grazing in spring when the surface is wet causes surface compaction and loss of pasture seeding. Fencing drainage ditches to exclude animals helps to prevent the sloughing and filling in of ditches.

Potential productivity for aspen on this soil is moderate. The seasonal high water table limits use of heavy equipment in spring and during other wet periods. Logging when the surface is dry or in winter when it is frozen reduces the problems from heavy equipment use. The wet soil severely limits seedling survival. Planting water-tolerant species helps to improve productivity. The seasonal high water table causes trees to have a shallow root zone and so trees blow over easily. Minimizing thinning helps to reduce windthrow.

The seasonal high water table is a severe limitation to use of this soil as a site for dwellings. Drainage systems that carry subsurface water away from cellars, footers, and slab foundations help to prevent problems from wetness. Adequately sealing foundations helps to prevent wet basements. An alternative is to build dwellings on included or nearby soils, such as better drained Hogansburg soils, that are better suited than the Deford soil to this use.

The seasonal high water table is a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness.

This soil is poorly suited to septic tank absorption fields because of the seasonal high water table and rapid permeability. The soil is a poor filter of sewage effluent, and ground-water contamination or deposition of effluent on the surface is a hazard. An alternative is to place the septic system on included or nearby soils, such as Berkshire soils, that are better suited than the Deford soil to this use.

The capability subclass is 4w. The forestland ordination symbol is 4W.

Df—Deford mucky loamy fine sand

This is a very deep, nearly level, very poorly drained soil in flat, low-lying areas of lake plains or deltas. Areas of this soil are mainly irregular in shape, except along drainageways, where they are long and narrow. Most areas are 6 to 50 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers in the Deford soil—

Surface layer:
0 to 8 inches, very dark grayish brown mucky loamy fine sand

Subsoil:
8 to 14 inches, gray loamy fine sand
14 to 24 inches, brownish gray and grayish brown loamy fine sand

Substratum:
24 to 31 inches, yellowish brown loamy fine sand
31 to 72 inches, gray fine sand

Included with this soil in mapping are small spots of Dorval muck in wetter pockets where a deeper layer of organic matter has accumulated. Also included are areas of Munuscong and Stockholm soils where clay is at a depth of 20 to 40 inches, small areas of loamy Runeberg soils where glacial till is adjacent to the unit, and areas of sandy Cook soils where the substratum is glacial till. Also included are small areas of loamy and generally stony, moderately well drained Hogansburg soils on small hills. Inclusions range to 6 acres and make up about 20 percent of this unit.

Important properties of the Deford soil—

Permeability: Rapid throughout

Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Moderately acid to slightly alkaline in the surface layer and the subsoil and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above to 1 foot below the surface from October to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are swamp woodland. Some areas are wetland or brushland.

This soil is poorly suited to most agricultural uses. Water is ponded on the surface for much of spring and the soil may even be saturated in summer, preventing planting, reseeding, or timely application of fertilizer. Achieving good yields is difficult because the soil is saturated and natural fertility is low.

This soil is poorly suited to hayland and pasture. Ponding in spring and wetness are the main limitations. The soil could be used as pasture during the driest part of summer with moderate forage yields. Grazing when this soil is wet causes surface compaction and loss of pasture seeding. The high water table restricts root development. On pasture, restricting grazing to periods when the soil is dry, selecting shallow-rooted plant species, and regularly applying fertilizer help to maintain quantity and quality of forage.

Potential productivity for aspen on this soil is low or moderate. The seasonal high water table limits use of heavy equipment in spring and during other wet periods. Logging in winter when the surface is frozen reduces the problems from heavy equipment use. The wet soil severely limits seedling survival. Planting water-tolerant species helps to improve the seedling survival rate. Windthrow is a hazard because the seasonal high water table restricts root development. Minimizing thinning helps to reduce windthrow.

This soil is poorly suited to dwellings. Water is ponded in spring, and the soil may be saturated for much of the rest of the year. In some areas special drainage systems help to reduce wetness. However, this soil is in a low position on the landscape, outlets are difficult to find, and drainage may not be effective. An alternative is to use nearby or included soils, such as Hogansburg soils, that are better suited to this use.

Ponding and the seasonal high water table are severe limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Generally, a suitable alternative is to lay out roads around this soil.

This soil is poorly suited to use as a site for septic tank absorption fields because of ponding and the seasonal high water table. The soil is a poor filter of sewage effluent, and contamination of both ground water and surface water is a hazard. An alternative is to place the septic system on soils that are better suited than the Deford soil to this use.

The capability subclass is 5w. The forestland ordination symbol is 4W.

DpA—Depeyster silt loam, 0 to 2 percent slopes

This is a very deep, nearly level, moderately well drained soil on the tops of low hills and on dissected plains. Areas are broad or elongated and have irregular margins. They range from 6 to 20 acres.

Typical sequence, depth, and composition of the layers in the Depeyster soil—

Surface layer:
0 to 10 inches, dark grayish brown silt loam

Subsoil:
10 to 27 inches, brown silt loam

Substratum:
27 to 39 inches, alternating bands of light olive brown very fine sand, strong brown very fine sandy loam, and dark reddish gray silty clay loam
39 to 72 inches, alternating bands of yellowish brown sandy loam, reddish gray silty clay loam, and grayish brown very fine sand

Included with this soil in mapping are small areas of somewhat poorly drained Hailesboro soils in slight depressions and poorly drained and very poorly drained Wegatchie soils in potholes. Also included are small areas of finer textured Heuvelton soils, areas of slightly coarser textured Salmon and Nicholville soils, and, on knolls and areas of slightly raised relief, areas of Summerville and Insula soils, which are 10 to 20 inches deep to bedrock. Also included are small areas of rock outcrops and stones and, in places where underlying glacial till protrudes to the surface, areas of Pyrities and Grenville soils, which have a higher content of rock fragments than that in the Depeyster soil. Also included, notably along the border of Jefferson County, are areas of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Depeyster soil—

Permeability: Moderate in the surface layer and slow or moderately slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer, slightly acid to neutral in the upper part of the subsoil, slightly acid to slightly alkaline in the lower part of the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 1.5 to 2.0 feet from March to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. A few areas are pasture or woodland.

This soil is well suited to most crops grown in the county. Seasonal wetness is the main limitation. In some places wetness delays planting and interferes with harvesting, especially on the included Wegatchie soils. Installing subsurface drainage and selecting short-season plants help to compensate for wetness. Using cover crops and including grasses and legumes in the cropping system help to maintain or to restore soil tilth.

This soil is well suited to pasture and hayland and is one of the better soils for growing alfalfa in the county. Restricting livestock from pasture when the surface is wet helps to prevent surface compaction. Overgrazing reduces the quantity and quality of forage. Deferred grazing and rotational grazing, adding lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weeds and brush help to increase the quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is moderate or high. Wetness from the seasonal high water table is the main limitation. Restricting use of heavy machinery to drier seasons of the year minimizes rutting of wet soil.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements.

Frost action is the main limitation to use of this soil as a site for local roads and streets. Providing thicker and coarser grained subgrade material and adequate drainage helps to prevent frost action from heaving and cracking pavement.

Slow permeability and wetness are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and using a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 2w. The forestland ordination symbol is 3A.

DpB—Depeyster silt loam, 2 to 6 percent slopes

This is a very deep, gently sloping, moderately well drained soil on backslopes and side slopes of gentle hills or knolls or on dissected plains. Areas are generally linear and have irregular margins. They range from 6 to 20 acres.

Typical sequence, depth, and composition of the layers in the Depeyster soil—

Surface layer:
0 to 10 inches, dark grayish brown silt loam

Subsoil:
10 to 27 inches, brown silt loam

Substratum:
27 to 39 inches, alternating bands of light olive brown very fine sand, strong brown very fine sandy loam, and dark reddish gray silty clay loam
39 to 72 inches, alternating bands of yellowish brown sandy loam, reddish gray silty clay loam, and grayish brown very fine sand

Included with this soil in mapping are small areas of somewhat poorly drained Hailesboro soils in slight depressions and poorly drained and very poorly drained Wegatchie soils in potholes. Also included are small areas of finer textured Heuvelton soils, areas of slightly coarser textured Salmon and Nicholville soils, and, on knolls and in areas of slightly raised relief, areas of Summerville and Insula soils, which are 10 to 20 inches deep to bedrock. Also included are small areas of rock outcrops or stones. Also included, in some places where underlying glacial till protrudes to the surface, are areas of Pyrities and Grenville soils, which have a higher content of rock fragments than that in the Depeyster soil. Also included, notably along the border of Jefferson County, are areas of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Depeyster soil—

Permeability: Moderate in the surface layer and slow or moderately slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface

layer, slightly acid to neutral in the upper part of the subsoil, slightly acid to slightly alkaline in the lower part of the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: At a depth of 1.5 to 2.0 feet from March to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. A few areas are pasture or woodland.

This soil is well suited to most crops grown in the county. Erosion is a severe hazard on the longer, steeper slopes. Seasonal wetness is the main limitation. Cross-slope tillage, stripcropping, crop rotations that emphasize sod crops, and conservation tillage help to control erosion and to maintain or restore tilth. In some years wetness delays planting and interferes with harvesting, especially on the included Wegatchie soils. Installing subsurface drainage and selecting short-season plants help to overcome wetness.

This soil is well suited to pasture and hayland. It is one of the better soils for growing alfalfa in the county. Restricting livestock on pasture when the surface is wet helps to prevent surface compaction. Overgrazing reduces the quantity and quality of forage. Deferred grazing, rotational grazing, adding lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weeds and brush help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is moderate. The seasonal high water table is the main limitation. Restricting use of heavy machinery to drier seasons minimizes rutting of wet soil.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing thicker, coarser grained subgrade material and adequate drainage helps to prevent frost action from heaving and cracking pavement.

Slow permeability and the seasonal high water table are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and using a wide, deep trench below the distribution lines help to compensate for the slow permeability and to reduce wetness.

The capability subclass is 2e. The forestland ordination symbol is 3A.

DpC—Depeyster silt loam, rolling

This is a very deep, rolling, moderately well drained soil on dissected lake plains or on footslopes of valley walls where slopes are short and complex. Areas of this soil are irregular in shape. They range from 6 to 30 acres. Slopes typically range from 5 to 15 percent.

Typical sequence, depth, and composition of the layers in the Depeyster soil—

Surface layer:
0 to 10 inches, dark grayish brown silt loam

Subsoil:
10 to 27 inches, brown silt loam

Substratum:
27 to 39 inches, alternating bands of light olive brown very fine sand, strong brown very fine sandy loam, and dark reddish gray silty clay loam
39 to 72 inches, alternating bands of yellowish brown sandy loam, reddish gray silty clay loam, and grayish brown very fine sand

Included with this soil in mapping are small areas of somewhat poorly drained Hailesboro soils in slight depressions and poorly drained and very poorly drained Wegatchie soils in potholes. Also included are small areas of finer textured Heuvelton soils, areas of slightly coarser textured Salmon and Nicholville soils, and, on knolls and in areas of slightly raised relief, areas of Summerville and Insula soils, which are 10 to 20 inches deep to bedrock. Also included are small areas of rock outcrops or stones. Also included, where underlying glacial till protrudes to the surface, are areas of Pyrities and Grenville soils, which have a higher content of rock fragments than that in the Depeyster soil. Also included, notably along the border of Jefferson County, are areas of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Depeyster soil—

Permeability: Moderate in the surface layer and slow or moderately slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer, slightly acid to neutral in the upper part of the subsoil, slightly acid to slightly alkaline in the lower part of the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 1.5 to 2.0 feet from March to May

Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are used for cultivated crops. A few areas are wooded.

This soil is poorly suited to most crops grown in the county. Erosion is a severe hazard, and the seasonal high water table is a limitation. Conservation tillage and crop rotations that emphasize sod crops help to control erosion and to maintain or restore tilth. In some years wetness delays planting and interferes with harvesting, especially on included Wegatchie soils. Installing subsurface drainage and planting short-season plants help to overcome wetness.

This soil is fairly well suited to pasture and hayland. The seasonal high water table is the main limitation. Restricting livestock from pasture in early spring and during other wet periods helps to maintain good soil tilth. Drainage helps to increase productivity and longevity of deep-rooted legumes. Overgrazing causes loss of desirable plant species and a severe erosion hazard. Proper stocking rates, rotational grazing, yearly mowing, and additions of lime and fertilizer help to protect stabilizing vegetation and to increase quantity and quality of forage.

Potential productivity for sugar maple on this soil is moderate. The erosion hazard and wetness are management concerns. Building logging roads on the contour, constructing water bars to protect roads when not in use, and routing roads and skid trails to less sloping areas help to control erosion. Restricting equipment use when the soil is soft and wet helps to prevent rutting.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements. Erosion is a hazard on construction sites. Building dwellings in less sloping areas and revegetating disturbed places during or soon after construction help to control erosion. An alternative is to use included areas of Salmon soils, which have few limitations for dwellings.

This soil is fairly suited to use as a site for local roads and streets. The seasonal high water table and potential for frost action are the main limitations. Adequate roadside ditches and culverts are needed to divert water away from the road but not to disrupt local land drainage. Providing a coarser subgrade and revegetating roadsides and cutbanks soon after construction help to prevent frost action from heaving and buckling pavement and sloughing cutbanks.

Slow permeability and the seasonal high water table are the main limitations to use of this soil as a site for septic tank absorption fields. Special designs, such as an enlarged absorption field; a wide, deep trench below the distribution lines; or a drainage system installed around the filter field help to compensate for slow permeability and to reduce wetness. An alternative is to place the absorption field on included or nearby soils, such as Salmon soils, that are better drained than the Depeyster soil.

The capability subclass is 3e. The forestland ordination symbol is 3R.

Dr—Dorval muck

This is a very deep, nearly level, very poorly drained soil that formed in organic deposits in low-lying basins and depressions. Small hummocks and bumps are prevalent across otherwise smooth terrain. Areas of this soil range from 6 to 200 acres. Slopes range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers in the Dorval soil—

Surface layer:
0 to 17 inches, black muck

Subsurface layer:
17 to 23 inches, very dark gray muck
23 to 31 inches, dark brown mucky peat

Substratum:
31 to 72 inches, gray silty clay

Included with this soil in mapping, commonly near the center of the unit, are areas of Carbondale muck, which are deeper than 51 inches to a mineral soil layer. Also included, where streams flow into this unit, are small areas of Fluvaquents and Borosaprists, which are both subject to flooding. Also included are some areas of shallow Insula soils or rock outcrops and small areas of clayey Adjidaumo soils near the edges of some units. Also included, on knolls and small ridges, are small areas of well drained, loamy Grenville and Pyrities soils and some areas, notably along the border of Jefferson County, of soils that are warmer than normal, usually by less than 2 degrees. Included soils range to 6 acres and make up about 25 percent of this unit.

Important properties of the Dorval soil—

Permeability: Moderate to moderately rapid in the organic soil layers and very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to slightly alkaline in the

organic soil layers and slightly acid to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Ranges from 1 feet above the surface to 1 foot below from November to May
Depth to bedrock: More than 60 inches
Shrink-swell potential: Low in the organic layer and high in the substratum
Potential for frost action: High
Flooding hazard: None

Almost all areas of this soil are in swampland, woodland, or brushland.

This soil is not suited to cultivated crops, hay, or pasture unless artificial drainage is installed.

Potential productivity for red maple on this soil is moderate. The seedling mortality rate is severe because of the seasonal high water table. Selecting water-tolerant species helps to improve timber production. The very shallow root zone on this soil causes trees to blow over easily. Minimizing thinning helps to reduce windthrow. The soil is soft and unstable when wet and will not support heavy planting or logging equipment. Logging in winter when the ground is frozen reduces problems from heavy equipment use.

This soil is poorly suited to dwellings because of ponding, low strength, and excess humus. The soil is soft and unstable when wet, and is subject to considerable subsidence when drying or loading. Nearby or included mineral soils, such as Grenville and Pyrities soils, have better drainage than the Dorval soil and are better suited to dwellings.

Potential subsidence, ponding of surface water, and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. If possible, roads could be built around these wet, organic soils.

This soil is poorly suited to use as a site for septic tank absorption fields. It is subject to ponding and has a slow percolation rate. If the soil is used as a filter field, ground-water contamination is a hazard.

However, the filter field could be placed on nearby or included soils, such as Grenville and Pyrities soils, that are better suited to this use.

The capability subclass is 5w. The forestland ordination symbol is 2W.

Du—Dune land

This map unit consists of wind-deposited sand on mounds and knolls generally on ancient river deltas. Most areas of Dune land are near the St. Regis River and the Oswegatchie River. The dunes support little or no plant cover and in most places they are actively eroding. In some places they encroach on tree plantations along the perimeters of the map unit. Slopes are mostly undulating and rolling, and range from 3 to 15 percent.

Dune land is generally light gray or brown sand to a depth of 60 inches or more. In places numerous wind-polished pebbles are on the surface.

Included with this unit in mapping are small areas of well drained loamy soils. Numerous polished stones that developed on old blown out spots are on the surface. Also included, in some convex areas where trees and shrubs have stabilized the surface of the soil, are small areas of Adams soils. Also included, in some swales and small depressions with stabilizing vegetation, are small areas of somewhat poorly drained and poorly drained Naumburg soils and moderately well drained Croghan soils. Also included are small areas of rock outcrops and areas that have significantly greater slopes. Inclusions range to 6 acres and make up about 15 percent of this unit.

Important properties of Dune land—

Permeability: Rapid or very rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid throughout
Erosion hazard: Severe hazard of wind erosion
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Dune land is not well suited to use as agricultural land or forestland. Wind erosion is a severe hazard because of extremely low fertility and very low water holding capacity. Dune land needs to be vegetated and stabilized. Planting drought-resistant trees or grasses and restricting all wheeled traffic helps in stabilizing Dune land.

Dune land is suitable as a site for dwellings with basements; however, it is unsuitable as a site for septic tank absorption fields because these highly permeable sands are a poor filter of effluent. Also, cutbanks caving in is a severe hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins. Onsite investigation is needed to find any included or nearby soils that are better suited to these uses.

Dune land is suitable for local roads and streets. Vegetating and stabilizing roadsides help to keep the road free of blowing and drifting sands. Intensive management is needed to stabilize roadsides because of low available water capacity and low fertility of Dune land.

The capability subclass is 8. Dune land was not assigned an ordination symbol.

EeB—Eelweir fine sandy loam, 2 to 8 percent slopes

This is a very deep, gently sloping, moderately well drained soil on old stream terraces or old beaches. Most areas of this soil are irregular in shape, but some areas are long and narrow. Most areas are 6 to 20 acres, but the range is 6 to more than 40 acres.

Typical sequence, depth, and composition of the layers in the Eelweir soil—

Surface:
0 to 10 inches, dark brown fine sandy loam

Subsoil:
10 to 29 inches, dark yellowish brown fine sandy loam

Substratum:
29 to 35 inches, brown very fine sandy loam
35 to 72 inches, yellowish brown loamy fine sand and sand

Included with this soil in mapping are small areas of somewhat poorly drained Mino soils. Also included are small areas of finer textured, well drained Salmon soils and where a clay substratum is near the surface, some small areas of loamy over clayey Elmwood soils or sandy over clayey Flackville soils. Also included, in slight depressions, are small areas of somewhat poorly drained and poorly drained Swanton soils, which have a clayey substratum. Also included are well drained, loamy Grenville and Pyrities soils and some nearby areas of stony soils on small hills or ridges; small areas of soils that are steeper than the Eelweir soil; and some small areas of rock outcrops. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Eelweir soil—

Permeability: Moderate or moderately rapid in the surface layer, subsoil, and upper part of the substratum, and moderately rapid or rapid in the lower part of the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Strongly acid to slightly acid in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to slightly alkaline in the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 1.5 to 2.0 feet in November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops, hay, and pasture. Some areas are woodland.

This soil is well suited to cultivated crops. It is easily tilled when moist. In some years seasonal wetness in early spring and late fall hinders planting and harvesting, particularly in the included wetter areas. Subsurface drainage helps to reduce wetness. Erosion is a hazard on longer, steeper slopes. Cross-slope tillage, stripcropping, and conservation tillage help to control erosion.

This soil is well suited to hayland and pasture. In some years the seasonal high water table restricts root growth of some legumes. Grazing when the soil is wet causes surface compaction and in some areas loss of pasture seeding. Overgrazing reduces the quantity and quality of forage. Deferred grazing, rotational grazing, adding lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weeds and brush help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is moderate or high. In some areas the seasonal high water table restricts rooting depth and causes trees to blow over more easily. Minimizing thinning helps to reduce windthrow. Seedlings survive and grow well if competing vegetation is controlled.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements.

Potential for frost action and wetness are moderate limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade and base material to frost depth helps to prevent frost action from heaving and buckling pavement. Installing adequate drainage and providing coarser grained subgrade material help to compensate for wetness.

The seasonal high water table and rapid permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Because of the permeability, the soil is a poor filter of effluent and ground-water contamination is a hazard. Installing a drainage system around the filter field and enlarging the filter field helps to reduce wetness and to compensate for permeability. In some areas special designs for septic systems are needed to compensate for permeability and the poor filter. An alternative is to place the septic system on included or nearby soils, such as Pyrities soils, that are better suited to this use.

The capability subclass is 2w. The forestland ordination symbol is 3A.

EmA—Elmwood fine sandy loam, 0 to 3 percent slopes

This is a very deep, nearly level, moderately well drained soil on marine or lake plains, where glacial streams, rivers, or a wind-deposited, thin mantle of fine sand and silt overlies lacustrine or marine clayey materials. Areas of this soil are generally irregular in shape, but some areas are long and narrow. Areas are commonly 6 to 20 acres, but the range is 6 to more than 40 acres.

Typical sequence, depth, and composition of the layers in the Elmwood soil—

Surface:
0 to 6 inches, brown fine sandy loam

Subsoil:
6 to 25 inches, brown and yellowish brown fine sandy loam

Substratum:
25 to 72 inches, dark brown silty clay

Included with this soil in mapping are small areas of somewhat poorly drained or poorly drained Swanton soils in slightly concave depressions or in steep areas. Also included are moderately well drained, finer textured Heuvelton and Depeyster soils in areas that have a very thin, loamy mantle; some areas of Flackville soils where the overlying mantle is sandier than that for the Elmwood soil; and, where the clay layer is at a depth greater than 40 inches, areas of Eelweir soils that do not have a closely underlying clay substratum. Also included are some areas of well drained loamy, generally stony Grenville and Pyrities soils on small hills, knolls, or ridges and some small areas of rock outcrops. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Elmwood soil—

Permeability: Moderately rapid in the surface layer and subsoil and very slow or slow in the clayey substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Very strongly acid to slightly acid in the surface layer and the subsoil and moderately acid to slightly alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Perched above the clayey substratum at a depth of 1.5 to 3.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low in the surface layer and the subsoil and moderate in the substratum
Flooding hazard: None

Most areas of this soil are used for cultivated crops, hayland, or pasture. Some areas are woodland.

This soil is well suited to cultivated crops. It is easily tilled when moist. In some years, seasonal wetness in early spring and late fall hinders planting and harvesting, particularly in included wetter areas. Subsurface drainage helps to reduce wetness.

This soil is well suited to hayland and pasture. The seasonal high water table and the fine textured substratum restrict root growth of some legumes. Grazing when the soil is wet causes surface compaction and in some areas loss of pasture seeding. Overgrazing reduces quantity and quality of forage. Deferred grazing, rotational grazing, adding lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weeds and brush help to increase quantity and quality of feed and forage.

Potential productivity for white pine on this soil is moderate or high. In some areas the seasonal high water table and the clayey substratum restrict root development and windthrow is a moderate hazard. Minimizing thinning helps to reduce windthrow. Seedlings survive and grow well if competing vegetation is controlled.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing the foundation help to prevent wet basements.

Potential for frost action and low strength are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade and base material to frost depth helps to prevent frost action from damaging pavement. Providing suitable subgrade materials or using special construction methods for adequate support helps to increase strength and stability of this soil.

Slow or very slow permeability in the substratum and the seasonal high water table are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for permeability. Installing a drainage system around the filter field helps to reduce wetness. In some areas special designs for septic systems are needed to overcome permeability and wetness. An alternative is to lay out the absorption field on included or nearby soils, such as Pyrities soils, that are more favorable to this use.

The capability subclass is 2w. The forestland ordination symbol is 8A.

EmB—Elmwood fine sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, moderately well drained soil on marine or lake plains where glacial streams, rivers, or a wind-deposited, thin mantle of fine sand and silt overlies lacustrine or marine clayey materials. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to more than 40 acres.

Typical sequence, depth, and composition of the layers in the Elmwood soil—

Surface:
0 to 6 inches, brown fine sandy loam

Subsoil:
6 to 25 inches, brown and yellowish brown fine sandy loam

Substratum:
25 to 72 inches, dark brown silty clay

Included with this soil in mapping are small areas of somewhat poorly drained or poorly drained Swanton soils in slightly concave depressions or in steep areas. Also included are moderately well drained Heuvelton and Depeyster soils where a very thin, loamy mantle overlies the clay and areas of Flackville soils where the overlying mantle is sandier than that in the Elmwood soil. Also included are Eelweir soils where the underlying clayey substratum is deeper than 40 inches; areas of commonly stony, loamy, well drained Grenville and Pyrities soils on small, slightly higher knolls and hillsides; and some small areas of rock outcrops. Included areas range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Elmwood soil—

Permeability: Moderately rapid in the surface layer and subsoil and very slow or slow in the clayey substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Very strongly acid to slightly acid in the surface layer and the subsoil and moderately acid to slightly alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Perched above the clayey substratum at a depth of 1.5 to 3.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low in the surface layer and the subsoil and moderate in the substratum
Flooding hazard: None

Most areas of this soil are used for cultivated crops, hayland, or pasture. Some areas are woodland.

This soil is well suited to cultivated crops. It is easily tilled when moist. In some years seasonal wetness in early spring and late fall hinders planting and harvesting, particularly in included wetter areas. Subsurface drainage helps to reduce wetness. On longer, steeper slopes, erosion is a hazard. Stripcropping, conservation tillage, and crop rotations that emphasize sod crops help to control erosion.

This soil is well suited to hayland and pasture. The seasonal high water table and the finely textured substratum limit root growth of some legumes. Grazing when the soil is wet causes surface compaction and in some areas loss of pasture seeding. Overgrazing reduces quantity and quality of forage. Deferred grazing, rotational grazing, adding lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weeds and brush help to increase quantity and quality of feed and forage.

Potential productivity for white pine on this soil is moderate or high. In some areas the seasonal high water table and the clayey substratum restrict rooting depth and windthrow is a moderate hazard. Minimizing thinning helps to reduce windthrow. Seedlings survive and grow well if competing vegetation is controlled.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements.

Potential for frost action and low strength are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade and base material to frost depth helps to prevent frost action from damaging pavement. Providing a suitable subgrade material or using special construction methods for adequate support helps to increase strength and stability of this soil.

Slow or very slow permeability and the seasonal high water table are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for permeability. Installing a drainage system around the filter field helps to reduce wetness. In some areas special designs for septic systems are needed to compensate for permeability and wetness.

An alternative is to place the absorption field on nearby or included soils more favorable to this use.

The capability subclass is 2w. The forestland ordination symbol is 8A.

Fa—Fahey loamy fine sand

This is a very deep, nearly level, moderately well drained soil on gentle ridges and knolls. Most areas of this soil are elliptical in shape. Areas range from 6 to 50 acres. Slopes range from 0 to 3 percent.

Typical sequence, depth, and composition of the layers in the Fahey soil—

Surface layer:
0 to 7 inches, very dark grayish brown loamy fine sand

Subsoil:
7 to 27 inches, brown very gravelly loamy fine sand
27 to 31 inches, dark brown very gravelly loamy sand

Substratum:
31 to 39 inches, yellowish brown gravelly loamy sand
39 to 72 inches, dark yellowish brown very gravelly loamy sand

Included with this soil in mapping are small areas of very poorly drained and poorly drained Cook soils, somewhat poorly drained Coveytown soils, and excessively drained Trout River soils. Cook and Coveytown soils are in low-lying areas or in depressions. Trout River soils are on convex ridges or hilltops. Also included are small areas of the sandy Croghan soils that do not contain many rock fragments. Also included are loamy Kalurah soils and loamy, well drained Pyrities soils on some hillsides. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Fahey soil—

Permeability: Rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 1.5 to 2 feet from March to May
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding Hazard: None

Many areas of this soil are in cultivated crops. Some areas are hayland, pasture, or forest.

This soil is suitable for many cultivated crops, but it requires intensive management for satisfactory yields. Low natural fertility, droughtiness in summer, and a seasonal high water table are the main limitations. Adding organic matter, lime, and fertilizer helps to improve fertility. Adding fertilizer and lime to this rapidly permeable soil in frequent, small increments rather than all at once helps to prevent substantial losses from leaching. The water holding capacity of this soil is very low, and the soil is droughty. Planting green manure crops and adding organic matter help to increase the water available for crops. Irrigation helps to overcome droughtiness, but irrigation generally is not cost effective unless combined with some specialty crops. In some years the seasonal high water table delays planting in spring and harvesting in fall. Installing tile drains helps to improve drainage.

This soil is suited to hay and pasture. Adding soil amendments helps to improve fertility and to sustain beneficial plants. Proper stocking rates and pasture rotation help to protect the desirable plants especially subject to overgrazing in summer, when the soil has little water available for plants.

Potential productivity for white pine on this soil is moderate. There are no limitations to woodland use and management.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. An alternative is to build dwellings on included Trout River and Pyrities soils, which have few limitations for dwellings.

The seasonal high water table is the main limitation to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing drainage systems help to reduce wetness.

The seasonal high water table and rapid permeability are the main limitations to use of this soil as a site for septic tank absorption fields. In some areas special or unconventional designs for septic systems are needed to overcome these limitations. An alternative is to place the absorption field on nearby or included soils, such as Pyrities soils, that are more favorable to this use.

The capability subclass is 2w. The forestland ordination symbol is 8A.

FkA—Flackville loamy fine sand, 0 to 3 percent slopes

This is a very deep, nearly level, moderately well drained soil on marine or lake plains where glacial streams or rivers deposited a thin mantle of sand over marine or lacustrine silts and clays. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers in the Flackville soil—

Surface layer:
0 to 9 inches, very dark grayish brown loamy fine sand

Subsurface layer:
9 to 11 inches, dark brown and reddish brown loamy fine sand

Subsoil:
11 to 29 inches, brown loamy fine sand and fine sand

Substratum:
29 to 72 inches, yellowish brown varved silty clay and silty clay loam

Included with this soil in mapping are small areas of poorly drained Stockholm soils in depressions and along drainageways. Also included are moderately well drained Heuvelton and Depeyster soils where the sandy mantle is less than 18 inches thick, areas of Adams and Croghan soils where the sandy mantle is deeper than 40 inches, and areas of Elmwood soils where the overlying mantle is not as sandy as that in the Flackville soil. Also included, on small hills and knolls, are loamy Pyrities and Kalurah soils, which commonly have stones on the surface. Also included are some small areas of rock outcrops. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Flackville soil—

Permeability: Rapid in the surface layer and subsoil and very slow or slow in the clayey substratum
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Strongly acid to slightly acid in the surface layer, strongly acid to neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Perched above the clayey substratum at a depth of 1.5 to 2.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low in the surface layer and the subsoil and moderate in the substratum
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. Other areas are woodland.

This soil is suited to cultivated crops, but it requires intensive management for satisfactory yields. Adding organic matter and fertilizer helps to improve the low fertility. However, adding fertilizer and lime in frequent, small increments will avoid the losses from leaching in the rapidly permeable surface layer and subsoil. In dry summers the sandy upper layers of this soil are droughty. Adding manure and crop residue to the soil help to increase the water available to crops. In some years the seasonal high water table delays planting in spring and harvesting in fall, particularly on included, wetter areas. Installing subsurface drainage helps to reduce wetness.

This soil is suited to hayland and pasture. The seasonal high water table and the finely textured substratum restrict root growth of some legumes. Natural fertility is low, and regular applications of lime and fertilizer are needed to obtain adequate yields. Overgrazing reduces quantity and quality of forage and increases the hazard of erosion. Deferred grazing and rotational grazing help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is moderately high. There are no limitations to woodland use and management.

Wetness from the seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements.

Wetness and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Laying out roads and streets on raised fill material and providing adequate drainage help to reduce wetness.

Wetness and slow or very slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. The soil is a poor filter of effluent, and ground-water contamination is a hazard. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability in the substratum. An unconventional design for a septic system is needed to compensate for the rapid permeability in the surface layer and the subsoil. An alternative is to place the absorption field on included or nearby soils, such as Pyrities soils, that are more favorable to this use.

The capability subclass is 2w. The forestland ordination symbol is 3S.

FkB—Flackville loamy fine sand, 3 to 8 percent slopes

This is a very deep, nearly level, moderately well drained soil on ancient marine or lake plains where glacial streams or rivers deposited a thin mantle of sand over marine or lacustrine silts and clays. Most areas of the soil are on simple, sloping, terracelike landforms. Some areas are on complex networks of hummocks and low hills. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers of the Flackville soil—

Surface layer:
0 to 9 inches, very dark grayish brown loamy fine sand

Subsurface layer:
9 to 11 inches, dark brown and reddish brown loamy fine sand

Subsoil:
11 to 29 inches, brown loamy fine sand and fine sand

Substratum:
29 to 72 inches, yellowish brown, varved silty clay and silty clay loam

Included with this soil in mapping are small areas of poorly drained Stockholm soils in depressions and along drainageways. Also included are areas of moderately well drained, finer textured Heuvelton and Depeyster soils that have either a very thin sandy mantle or no mantle; areas of excessively drained and somewhat excessively drained Adams soils in higher areas of the topography; and areas of Elmwood soils where a loamy mantle overlies the clay substratum. Also included are small areas of steeper soils, areas of loamy Pyrities and Kalurah soils on small knolls or ridges, and some small areas of rock outcrops. Also included, notably along the border of Jefferson County, are areas of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Flackville soil—

Permeability: Rapid in the surface layer and subsoil and very slow or slow in the clayey substratum
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Strongly acid to slightly acid in the surface layer, strongly acid to neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Perched above the clayey substratum at a depth of 1.5 to 2.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low in the surface layer and the subsoil and moderate in the substratum
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. Other areas are woodland.

This soil is suited to cultivated crops, but intensive management is needed for satisfactory yields. Adding organic matter and fertilizer helps to improve low natural fertility. The surface layer and the subsoil are rapidly permeable, and applying fertilizer and lime in frequent, small increments helps to prevent losses from leaching. The sandy, upper layers of this soil are droughty in dry summers. Adding manure and crop residue to the soil helps to increase the water available to crops. In some years the seasonal high water table delays planting in spring and harvesting in fall, particularly in the included, wetter areas. Installing subsurface drainage helps to reduce wetness. Erosion is a hazard on longer, steeper slopes. Contour plowing, stripcropping, and conservation tillage help to control erosion.

This soil is suited to hayland and pasture. The seasonal high water table and the finely textured substratum restrict root growth of some legumes. Natural fertility is low on this soil, and regular applications of lime and fertilizer are needed to obtain adequate yields. Overgrazing reduces quantity and quality of forage and increases the hazard of erosion. Deferred grazing and rotational grazing help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is moderately high. There are no limitations to woodland use and management.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements.

Wetness and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Building on raised fill material and providing adequate drainage help to reduce wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and very slow or slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. Because of the rapid permeability in the subsoil, the soil is a poor filter of sewage effluent and ground-water contamination is a hazard. An unconventional septic system is needed to compensate for the rapid permeability. An alternative is to place the absorption field on nearby or included soils, such as Pyrities soils, that are more favorable to this use.

The capability subclass is 2w. The forestland ordination symbol is 3S.

Fu—Fluvaquents-Udifluvents complex, frequently flooded

This map unit consists of nearly level to gently sloping, very deep, poorly drained to well drained soils on rough, broken, and dissected flood plains adjacent to streams. These soils are mostly sandy or loamy and have varying amounts of small stones. Slope ranges from 0 to 8 percent. Areas are elongated and parallel to each other or they bracket streams. They consist of about 50 percent Fluvaquents, 35 percent Udifluvents, and 15 percent other soils. Fluvaquents and Udifluvents are intermingled so closely that they could not be separated at the scale selected for mapping.

Generally, the sequence and composition of the layers of Fluvaquents—

Surface soil:
0 to 10 inches, black or dark gray sand to silty clay loam

Substratum:
10 to 72 inches, mottled, gray to brown sand to silty clay loam

Generally, the sequence and composition of the layers of Udifluvents—

Surface soil:
0 to 10 inches, brown loam to sand and varying amounts of gravel and cobbles

Substratum:
10 to 72 inches, various shades of brown loam to sand and varying amounts of gravel and cobbles

Included with these soils in mapping are small areas of smoother, somewhat poorly drained, loamy Redwater soils. Also included are some small areas of somewhat excessively drained and excessively drained, sandy Adams soils; small areas of very poorly drained Borosaprists; and areas of moderately deep soils. Included areas range to 6 acres and make up about 15 percent of this unit.

Important properties of Fluvaquents—

Permeability: Slow to rapid throughout
Available water capacity (average for a 40-inch soil profile): Low to high
Soil reaction: Very strongly acid to neutral in the surface layer and very strongly acid to moderately alkaline in the substratum
Erosion hazard: Severe for streambanks
Depth to water table: From 0.5 foot above the surface to 1.5 feet below the surface from October to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Frequent flooding

Important properties of Udifluvents—

Permeability: Slow to rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low to high
Soil reaction: Very strongly acid to neutral in the surface layer and very strongly acid to moderately alkaline in the substratum
Erosion hazard: Severe for streambanks
Depth to water table: From 1.5 to 6 feet deep from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: Frequent

Most areas of these soils are brushland or are used as wildlife habitat.

These soils are poorly suited to agriculture.

These soils are suitable for unimproved pasture. Seeding pasture during annual floods is difficult. The topography of these soils is rough, and generally it is not practical to spread manure, to add lime and fertilizer, and to mow yearly. Proper stocking rates prevent overgrazing, which can damage pasture seeding and cause a hazard of erosion. Restricting livestock when these soils are wet prevents surface compaction and protects soil tilth.

Potential productivity for all commercial trees on these soils is low. Red maple, basswood, oak, cottonwood, and aspen are common in native stands. The broken topography obstructs machine planting and harvesting. Seedling mortality likely is high because of the seasonal high water table on Fluvaquents, droughtiness on Udifluvents, and frequent flooding. Hand-planting seedlings under ideal field moisture conditions and scalping around the planting site help to ensure survival of seedlings.

This map unit is unsuitable for dwellings, local roads and streets, and septic tank absorption fields because frequent flooding is a hazard.

The capability subclass is 5w for Fluvaquents, frequently flooded. Udifluvents, frequently flooded, were not assigned a capability subclass. Fluvaquents and Udifluvents were not assigned an ordination symbol.

GrB—Grenville fine sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, well drained soil on tops and upper side slopes of knolls and ridges on glacial till plains. Most areas of this soil are irregular in shape and 6 to 20 acres, but the range is 6 to more than 50 acres.

Typical sequence, depth, and composition of the layers of the Grenville soil—

Surface layer:
0 to 5 inches, very dark grayish brown fine sandy loam

Subsoil:
5 to 26 inches, yellowish brown and brown fine sandy loam
26 to 37 inches, brown and pale brown fine sandy loam

Substratum:
37 to 72 inches, grayish brown sandy loam

Included with this soil in mapping are small, slightly concave areas of moderately well drained Hogansburg soils and somewhat poorly drained Malone soils. Also included are small areas of shallow Insula soils, moderately deep Nehasne soils where bedrock is less than 40 inches below the surface, and areas of rock outcrops. Also included are sandy Adams soils and gravelly Waddington soils on small deposits of sand and gravel. Included areas range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Grenville soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Strongly acid to slightly acid in the surface layer, moderately acid to neutral in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hayland.

This soil is well suited to cultivated crops. Erosion is a hazard, especially on longer, steeper slopes. Conservation tillage, cover crops, contour farming, and crop rotations help to control erosion and to maintain soil tilth. Adding lime and fertilizer according to soil tests helps to improve crop yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to hayland and pasture. Regular fertilizing and mowing are needed to maintain productive stands. Overgrazing of desired plants is a hazard, particularly in dry summers.

Potential productivity for sugar maple on this soil is high. There are few limitations to planting, harvesting, or managing woodlots on this soil.

This soil is well suited to dwellings with basements.

Potential for frost action is a moderate limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Moderately slow permeability in the substratum is the main limitation to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 2e. The forestland ordination symbol is 3A.

GrC—Grenville fine sandy loam, 8 to 15 percent slopes

This is a very deep, strongly sloping, well drained soil on side slopes and knolls on glacial till plains. Most areas of this soil are long and narrow or roughly oval. Areas are less than 10 acres, but the range is 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Grenville soil—

Surface layer:
0 to 5 inches, very dark grayish brown fine sandy loam

Subsoil:
5 to 26 inches, yellowish brown and brown fine sandy loam
26 to 37 inches, brown and pale brown fine sandy loam

Substratum:
37 to 72 inches, grayish brown sandy loam

Included with this soil in mapping are small areas of moderately well drained Hogansburg soils and somewhat poorly drained Malone soils on footslopes, along drainageways, and in other slightly concave areas. Also included are small areas of shallow Insula soils and moderately deep Nehasne soils where bedrock is less than 40 inches below the surface, areas of rock outcrops, and areas of sandy Adams soils and gravelly Waddington soils on small deposits of sand and gravel. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Grenville soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Strongly acid to slightly acid in the surface layer, moderately acid to neutral in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low

Most areas of this soil are used for cultivated crops, hayland, or pasture. A few areas are wooded.

This soil is poorly suited to cultivated crops because erosion is a severe hazard. If the soil is used for row crops, conservation tillage, cover crops, contour farming, and crop rotations help to reduce runoff and to control erosion. Applying lime and fertilizer according to soil tests helps to improve or maintain crop yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to use as hayland and pasture. Regular fertilizing and mowing are needed to maintain productive stands. Overgrazing of desired plants and increased erosion, particularly in dry summers, are hazards. Careful management of stocking rates helps to prevent overgrazing.

Potential productivity for sugar maple on this soil is high. There are few limitations to planting, harvesting, or managing woodlots on this soil.

Slope is a moderate limitation to use of this soil as a site for dwellings with basements. Dwellings could be designed to conform to the natural slope or the site could be shaped and filled.

Slope and potential for frost action are moderate limitations to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and conforming roads to slope help to overcome slope. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Moderately slow permeability in the substratum is the main limitation to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for permeability.

The capability subclass is 3e. The forestland ordination symbol is 3A.

GsD—Grenville fine sandy loam, 15 to 25 percent slopes, very stony

This is a very deep, moderately steep, well drained soil on hillsides and along drainageways on glacial till plains. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. Most areas of this soil are long and narrow. Areas are less than 10 acres, but the range is 6 to 20 acres.

Typical sequence, depth, and composition of the layers of the Grenville soil—

Surface layer:
0 to 5 inches, very dark grayish brown fine sandy loam

Subsoil:
5 to 26 inches, yellowish brown and brown fine sandy loam
26 to 37 inches, brown and pale brown fine sandy loam

Substratum:
37 to 72 inches, grayish brown sandy loam

Included with this soil in mapping are small areas of moderately well drained Hogansburg soils and somewhat poorly drained Malone soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of shallow Insula soils and moderately deep Nehasne soils where bedrock is less than 40 inches deep, some areas of rock outcrops near Insula and Nehasne soils, and areas of sandy Adams soils and gravelly Waddington soils on deposits of sand and gravel and in some small, nonstony areas. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Grenville soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow in the substratum

Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Strongly acid to slightly acid in the surface layer, moderately acid to neutral in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are wooded or are used as unimproved pasture. Some abandoned pastures are reverting to brush or trees.

This soil is poorly suited to cultivated crops or hay. Moderately steep slope and surface stones together severely impede use of tillage, planting, and harvesting equipment. If stones are removed and this soil is plowed, erosion is a hazard.

This soil is poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns on this soil. Grazing when this soil is wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on this soil is high. Moderately steep slopes and surface stones are moderate limitations to equipment use. Erosion is a hazard where logging or road construction exposes the soil. Constructing skid trails and logging roads on the contour and avoiding clearcutting help to control erosion.

Moderately steep slope is the main limitation to use of this soil as a site for dwellings with basements. Excavation and grading for most house designs on this soil are difficult. Erosion is a hazard on building sites where the soil is exposed. Using special house designs that accommodate steep slopes or placing the house on nearby or included soils that are less sloping helps to overcome slope.

Slope is a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and adapting road design to slope help to overcome slope. Special care is needed where culverts empty out to prevent formation of gullies. Stabilizing cut and fill slopes with vegetation soon after construction helps to control erosion. An alternative is to route roads to nearby or included areas that are less sloping than the Grenville soil.

Moderately slow permeability and slope are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for permeability. Land shaping and installing distribution lines across the slope help to ensure uniform distribution of effluent throughout the absorption field. An alternative is to place the absorption field on nearby or included soils that are less sloping than the Grenville soil.

The capability subclass is 6s. The forestland ordination symbol is 3X.

Gu—Guff silty clay loam

This is a moderately deep, nearly level, poorly drained soil in low-lying areas of moderately deep, clayey marine sediments. Areas of this soil are irregular in shape. Most areas are less than 20 acres, but the range is 6 acres to 50 acres. Slopes are smooth and slightly concave and range from 0 to 3 percent.

Typical sequence, depth, and composition of the layers of the Guff soil—

Surface layer:
0 to 9 inches, very dark gray silty clay loam

Subsoil:
9 to 20 inches, dark gray clay
20 to 39 inches, grayish brown silty clay
39 inches, weathered limestone bedrock

Included with this soil in mapping are small areas of Dorval muck in wetter pockets where organic matter accumulates on the surface. Also included are areas of Adjidaumo soils where bedrock is more than 40 inches deep; areas of somewhat poorly drained Matoon soils on higher parts of the map unit; many small areas of rock outcrops; and areas, notably along the border of Jefferson County, of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Guff soil—

Permeability: Slow or very slow throughout
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer and neutral to moderately alkaline below
Surface runoff: Very slow or ponded
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 0.5 feet from November to June

Depth to bedrock: 20 to 40 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are woodland or brushland. A few areas are used as unimproved pasture.

This soil is poorly suited to cultivated crops. The surface has a heavy texture and is saturated, and worthwhile yields are difficult to achieve. The seasonal high water table extends from late fall to early summer and in some years severely hinders planting and harvesting. The soil is very difficult to drain because of the heavy texture, moderate depth to bedrock, and a low-lying position on the landscape.

The soil is poorly suited to pasture or hay because of wetness. Restricting livestock when the soil is wet helps to preserve soil tilth and pasture seeding.

Potential productivity for red maple on this soil is low or moderate. The soil is soft when wet and limits heavy equipment use. Logging during the driest periods in summer or in winter when the ground is frozen reduces the problems from heavy equipment use. Wetness severely limits the seedling survival rate. Trees, which have a shallow root zone because of the seasonal high water table and moderate depth to bedrock, tend to blow over easily on this soil. Planting water-tolerant species and minimizing thinning help to improve productivity and to reduce windthrow.

The seasonal high water table and moderate depth to bedrock are severe limitations to use of this soil as a site for dwellings with basements. Installing drains by footings and sealing foundations help to prevent wet basements. Building above bedrock and landscaping with additional fill help to overcome depth to bedrock. An alternative is to build on any adjacent drier, deeper soils.

The seasonal high water table, low strength, and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness.

Depth to bedrock, the seasonal high water table, and very slow or slow permeability are severe limitations to use of this soil as a site for septic tank absorption fields. A system with a special design is needed to overcome these limitations. Generally, an alternative is to place the absorption field on nearby or included soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 4w. The forestland ordination symbol is 2W.

HaA—Hailesboro silt loam, 0 to 2 percent slopes

This is a very deep, nearly level, somewhat poorly drained soil in basins and on slightly concave or convex footslopes on floors of small valleys on the lake plain. Areas of this soil are irregular in shape. Most areas are 6 to 40 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers of the Hailesboro soil—

Surface layer:
0 to 7 inches, dark grayish brown silt loam

Subsoil:
7 to 24 inches, grayish brown silt loam
24 to 37 inches, gray silt loam
37 to 44 inches, brown silt loam

Substratum:
44 to 72 inches, brown silt loam

Included with this soil in mapping are small areas of poorly drained and very poorly drained Wegatchie soils in depressions and potholes. Also included are moderately well drained Depeyster soils on convex knolls; areas of finer textured Muskellunge soils and coarser textured Roundabout soils; and areas of coarser textured, loamy Malone soils on small hills or on footslopes and lower backslopes. Also included, where bedrock is close to the surface, are areas of moderately deep, loamy Ogdensburg soils and shallow, loamy Hannawa soils. Also included are small areas of rock outcrops; areas of sandy Deford soils adjacent to outwash plains; and some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Hailesboro soil—

Permeability: Moderate in the surface layer and moderately slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the upper part of the subsoil, neutral to moderately alkaline in the lower part of the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 0.5 to 1.5 feet from October to June
Depth to bedrock: More than 60 inches
Potential for frost action: High

Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland, pasture, or cultivated crops. Some areas are wooded.

This soil is poorly suited to cultivated crops because of wetness. In some years the seasonal high water table delays planting and harvesting and results in poor yields. If the soil has adequate drainage, it is highly productive for many crops, especially such annual row crops as corn. Tile drainage could be used, but on this nearly level terrain, some areas, especially wetter potholes, are difficult to drain. Restricting plowing to periods when the soil is moist, but not wet, helps to maintain good soil tilth.

This soil, especially where artificially drained, is fairly well suited to hayland and pasture. Shallow-rooted, water-tolerant legumes are highly productive on this soil. Grazing when the soil is wet causes surface compaction and possible loss of desired plant species. Restricting grazing to drier periods helps to maintain good soil tilth and a productive pasture. In undrained areas the soil is slow to dry out in spring.

Potential productivity for white ash on this soil is moderate. In some years wetness hinders equipment use in spring and fall. Logging during the driest periods in summer or in winter when the ground is frozen reduces problems from heavy equipment use. Seedling mortality is a moderate hazard on this soil. Planting seedlings after the soil surface is somewhat dried, but still moist, will enhance seedling survival. The seasonal high water table restricts rooting depth in this soil, and trees sometimes blow over easily. Minimizing thinning and planting shallow-rooted trees help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and moderately slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Special designs, such as enlarging the absorption field or placing a wide, deep trench below the distribution lines, help to compensate for the moderately slow permeability.

The capability subclass is 3w. The forestland ordination symbol is 3W.

HaB—Hailesboro silt loam, 2 to 6 percent slopes

This is a very deep, gently sloping, somewhat poorly drained soil in basins and on slightly concave or convex footslopes and on floors of small valleys on the lake plain. Areas of this soil are irregular in shape and are 6 to 40 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers of the Hailesboro soil—

Surface layer:
0 to 7 inches, dark grayish brown silt loam

Subsoil:
7 to 24 inches, grayish brown silt loam
24 to 37 inches, gray silt loam
37 to 44 inches, brown silt loam

Substratum:
44 to 72 inches, brown silt loam

Included with this soil in mapping are small areas of poorly drained and very poorly drained Wegatchie soils in depressions and potholes. Also included are moderately well drained Depeyster soils on convex knolls, areas of finer textured Muskellunge soils and coarser textured Roundabout soils, and areas of coarser textured, loamy Malone soils on small hills or on footslopes and lower backslopes. Also included are areas where bedrock is close to the surface; areas of moderately deep, loamy Ogdensburg soils and shallow, loamy Hannawa soils; and some areas of significantly steeper slopes. Also included are areas of sandy Deford soils adjacent to outwash plains; some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees; and small areas of rock outcrops. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Hailesboro soil—

Permeability: Moderate in the surface layer and moderately slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the upper part of the subsoil, neutral to moderately alkaline in the lower part of the subsoil, and slightly alkaline or moderately alkaline in the substratum

Erosion hazard: Moderate
Depth to water table: At a depth of 0.5 to 1.5 feet from October to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hay, pasture, or cultivated crops. Some areas are woodland.

This soil is poorly suited to cultivated crops because of wetness and a moderate erosion hazard. In some years the seasonal high water table delays planting and harvesting and results in poor yields. If the soil is adequately drained, many crops, especially annual row crops, such as corn, are highly productive. Tile drainage could be used on this soil. Restricting plowing when the soil is moist, but not wet, helps to maintain good soil tilth. Erosion is a hazard, especially on longer, steeper slopes. Conservation practices, such as stripcropping, contour farming, and conservation tillage, help to control erosion.

This soil, especially where artificially drained, is fairly well suited to hayland and pasture. Shallow-rooted, water-tolerant legumes are highly productive. Grazing when the soil is wet causes surface compaction and possible loss of desired plant species. Restricting grazing to drier periods helps to maintain good soil tilth and a productive pasture. In undrained areas this soil is slow to dry out in spring.

Potential productivity for trees on this soil is high. In some years wetness hinders equipment use in spring and fall. Logging in the driest part of summer or in winter when the ground is frozen reduces problems from heavy equipment use. The seedling mortality rate is moderate. Planting seedlings after the surface is somewhat dried but still moist helps to improve the seedling survival rate. The seasonal high water table restricts root development, and some trees blow over easily. Minimizing thinning and planting shallow-rooted trees help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and moderately slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Special designs, such as enlarging the absorption field or placing a wide, deep trench below the distribution lines, help to compensate for the moderately slow permeability.

The capability subclass is 3w. The forestland ordination symbol is 3W.

Hc—Hannawa loam

This is a shallow, nearly level, poorly drained soil on smooth, slightly concave tops and benches of bedrock-controlled landforms. Areas of this soil are irregular in shape and range from 6 to 50 acres or more. Slopes are smooth and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers of the Hannawa soil—

Surface layer:
0 to 8 inches, very dark grayish brown loam

Subsoil:
8 to 14 inches, light yellowish brown fine sandy loam
14 to 19 inches, grayish brown gravelly fine sandy loam

Bedrock:
19 inches, hard dolomitic limestone

Included with this soil in mapping are small areas of rock outcrops and very shallow Gouverneur soils. Also included are areas of moderately deep Ogdensburg soils where bedrock is at a depth of more than 20 inches, some areas of very deep Grenville soils on small hills or ridges, and small areas of moderately deep Guff soils where clayey marine sediments were deposited over bedrock. Also included are some areas of soils, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees and areas of shallow, better drained Summerville soils on small, convex knolls. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Hannawa soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Slightly acid or neutral in the surface layer and neutral or slightly alkaline in the subsoil
Erosion hazard: Slight
Depth to water table: At the surface to a depth of 1 foot from October to May

Depth to bedrock: 10 to 20 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland or unimproved pasture. A few areas are used as hayland.

This soil is poorly suited to cultivated crops. The seasonal high water table extends from fall into late spring and in some years hinders planting and harvesting. Artificial drainage is difficult because of shallow depth to bedrock. Available water capacity is low or very low because the soil is shallow to bedrock. In dry years crops may fail entirely. Rock outcrops and included areas of very shallow Gouverneur soils cause excessive wear on tillage equipment.

This soil is poorly suited to hay and pasture. Yields are generally low and rarely justify the cost of intensive management. Hay and pasture generally show moisture stress during prolonged dry periods. Returning organic residue to the soil helps to increase the water holding capacity. The seasonal high water table and bedrock limit root growth of some plants, especially legumes. Selecting hardy, shallow-rooted plants that are both water tolerant in spring and drought resistant in midsummer help to increase productivity of pasture and hayland. Restricting livestock from this soil prevents surface compaction. Overgrazing during dry periods, when plants are already under stress, can lead to loss of desirable plants.

Potential productivity for balsam fir on this soil is low. Wetness in spring and fall and rock outcrops limit equipment use. Logging during dry periods in summer or in winter when the ground is frozen allows equipment use. Rock outcrops prevent machine planting in some areas of this soil. Planting seedlings when the soil is moist but not saturated helps to increase seedling survival. The seasonal high water table and depth to bedrock limit root growth, and trees blow over easily. Minimizing thinning and planting shallow-rooted trees help to reduce windthrow.

The seasonal high water table and shallow depth to bedrock are severe limitations to use of this soil as a site for dwellings with basements. Installing drains by footings and sealing foundations help to reduce wetness. Generally, this soil is too shallow for basements. Building above bedrock and landscaping with additional fill help to overcome depth to bedrock. An alternative is to build on nearby or included soils, such as Grenville soils, that are drier and deeper.

The seasonal high water table, potential for frost action, and depth to bedrock are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. In some areas ripping or blasting bedrock is needed. An alternative is to lay out roads around this soil.

This soil is not suitable for use as a site for septic tank absorption fields. The seasonal high water table and depth to bedrock are the main limitations. Installing a drainage system around the filter field helps to reduce wetness, but the soil is too shallow for a filter field and an effective drainage system. The septic system could be built on nearby or included soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 4w. The forestland ordination symbol is 6W.

HeB—Heuvelton silty clay loam, 2 to 6 percent slopes

This is a very deep, gently sloping, moderately well drained soil on convex knolls and on other high parts of marine beds and lake plains that receive little or no runoff from higher land. Most areas of this soil are irregular in shape. Areas are 6 to 10 acres, but the range is 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Heuvelton soil—

Surface layer:
0 to 7 inches, dark brown silty clay loam

Subsoil:
7 to 11 inches, brown silty clay
11 to 22 inches, dark brown clay

Substratum:
22 to 72 inches, dark yellowish brown and brown silty clay loam

Included with this soil in mapping are small areas of somewhat poorly drained Muskellunge soils in slight depressions and small areas of poorly drained and very poorly drained Adjidaumo soils in potholes and along drainageways. Also included are areas of Flackville and Elmwood soils where a thin mantle of sandy or sandy loam material was deposited over clay; Depeyster soils in areas that have more silt and less clay than the Heuvelton soil; and areas of loamy, moderately well drained Hogansburg and Kalurah soils on small hills and knolls. Also included are small areas of rock outcrops; areas of loamy, moderately deep Nehasne soils and shallow Insula soils; and some areas of soils, notably along the border of Jefferson

County, that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Heuvelton soil—

Permeability: Moderate or moderately slow in the surface layer and subsoil and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer and the subsurface layer, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: From 1.5 to 2.0 feet below the surface from November to April
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are used for cultivated crops, hay, or pasture. A few areas are wooded.

This soil is well suited to cultivated crops. The surface is slow to dry out in spring, and in some years the seasonal high water table delays tillage and planting. The soil clods easily, and excessive plowing destroys surface structure. A crop rotation that is at least 40 to 50 percent sod crops and that limits consecutive years of row crops helps to maintain good soil structure. Erosion is a hazard on longer, steeper slopes. Conservation practices, such as conservation tillage and no till, help to control erosion.

This soil is well suited to pasture and hayland. It is one of the better soils in the county for growing alfalfa. The soil requires relatively little liming, but is slow to dry out in spring. Restricting livestock when the surface is wet helps to prevent surface compaction. Overgrazing reduces quantity and quality of forage. Deferred grazing, rotational grazing, applying lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weeds and brush help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is moderate. The soil is well suited to machine planting of seedlings.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Sealing foundations helps to prevent wet basements.

Low strength and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Providing suitable subgrade or base material or using special construction techniques helps to increase the strength and stability of this soil. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavements.

The seasonal high water table and very slow or slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for permeability. In some areas, a special design or an alternate system is needed to overcome these limitations.

The capability subclass is 2e. The forestland ordination symbol is 2A.

HeC—Heuvelton silty clay loam, rolling

This is a very deep, rolling, moderately well drained soil on dissected marine beds and lake plains or on footslopes of valley walls. Areas of this soil are irregular in shape and are 6 to 15 acres, but the range is 6 to 30 acres. Slopes are short, generally convex, and complex; they range from 5 to 15 percent.

Typical sequence, depth, and composition of the layers of the Heuvelton soil—

Surface layer:
0 to 7 inches, dark brown silt clay loam

Subsoil:
7 to 11 inches, brown silty clay
11 to 22 inches, dark brown clay

Substratum:
22 to 72 inches, dark yellowish brown and brown silty clay loam

Included with this soil in mapping are small areas of somewhat poorly drained Muskellunge soils in slight depressions and poorly drained and very poorly drained Adjidaumo soils in potholes and along drainageways. Also included are areas of Flackville and Elmwood soils where a thin mantle of sandy or sandy loam material was deposited over clay, Depeyster soils in areas that have more silt and less clay than the Heuvelton soil, and areas of Grenville, Hogansburg, Pyrities, and Kalurah soils on small hills. Also included are small areas of rock outcrops; areas of shallow Insula soils; areas of moderately deep, loamy Nehasne soils; and many steeper areas. In some areas this soil has smooth, rather than complex, slopes. Also included, notably along the border of Jefferson County, are areas of soils that are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Heuvelton soil—

Permeability: Moderate or moderately slow in the surface layer and subsoil and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer and the subsurface layer, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Surface runoff: Medium or rapid
Erosion hazard: Severe
Depth to water table: From 1.5 to 2.0 feet below the surface from November to April
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are hayland or pasture. Other areas are used for cultivated crops or trees.

This soil is poorly suited to cultivated crops. Erosion is a severe hazard where the surface is bare and unprotected. The topography is rolling, and most erosion control measures, including stripcropping and diversions, are impractical. However, in some places no till or conservation tillage helps to control erosion. Modern tillage equipment is difficult to use on the short, complex slopes of this soil. In many places low-lying, wetter pockets between convex slopes are very slow to dry out in spring and in some years delay tillage and planting on this soil.

This soil is well suited to pasture and hay. Some areas are slow to dry out in spring. Restricting livestock from pasture when the soil is wet prevents surface compaction. Overgrazing reduces quantity and quality of forage and increases the erosion hazard on steeper slopes. Deferred grazing and rotational grazing, applying lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weed and brush help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is moderate. Erosion is a hazard during logging operations. Building logging roads and skid trails in less sloping areas of this soil and minimizing clearcutting help to control erosion. Restricting use of heavy machinery to drier seasons of the year minimizes rutting on this soil when wet.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. During construction erosion is a hazard on steeper areas of this soil. Reseeding disturbed areas soon after construction is completed helps to control erosion.

Low strength and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Providing suitable subgrade or base material or using special construction techniques helps to increase the strength and stability of this soil. Providing coarser subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and very slow or slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for permeability. In some areas a special design or an alternate system is needed to overcome these limitations.

The capability subclass is 3e. The forestland ordination symbol is 2R.

HkE—Heuvelton and Depeyster soils, 15 to 45 percent slopes

This map unit consists of very deep, steep and very steep soils on hillsides and the sides of deeply dissected drainageways on marine or lake plains. Areas of these soils are commonly narrow and have wavy or irregular edges. Most areas are 6 to 10 acres, but the range is 6 to 30 acres. Slopes are 50 to 200 feet long, and most are complex or convex. Heuvelton and Depeyster soils were mapped together because they have no major differences in use and management. Some areas consist mostly of Heuvelton or Depeyster soils, and some areas consist of both soils. Total acreage of the unit is about 50 percent Heuvelton soils, 30 percent Depeyster soils, and 20 percent other soils.

Typical sequence, depth, and composition of the layers of the Heuvelton soils—

Surface layer:
0 to 7 inches, dark brown silt clay loam

Subsoil:
7 to 11 inches, brown silty clay
11 to 22 inches, dark brown clay

Substratum:

22 to 72 inches, dark yellowish brown and brown silty clay loam

Typical sequence, depth, and composition of the layers of the Depeyster soils—

Surface layer:
0 to 10 inches, dark grayish brown silt loam

Subsoil:
10 to 27 inches, brown silt loam

Substratum:
27 to 39 inches, alternating bands of light olive brown very fine sand, strong brown very fine sandy loam, and dark reddish gray silty clay loam
39 to 72 inches, alternating bands of yellowish brown sandy loam, reddish gray silty clay loam, and grayish brown very fine sand

Included with these soils in mapping are somewhat poorly drained Muskellunge and Hailesboro soils on less sloping, concave footslopes in the lowest part of this unit. Also included are small areas of well drained, loamy Pyrities soils on hillsides where the clay veneer is absent, small areas of Flackville and Elmwood soils where a thin mantle of sand or fine sand and silt was deposited over silts and clays, and small areas of rock outcrops. Also included are small areas of loamy, shallow Insula soils adjacent to exposed bedrock. Included areas range to 6 acres and make up about 20 percent of the unit.

Important properties of Heuvelton soils—

Permeability: Moderate or moderately slow in the surface layer and subsoil and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer and the subsurface layer, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Very severe
Depth to water table: From 1.5 to 2.0 feet below the surface from November to April
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Important properties of the Depeyster soils—

Permeability: Moderate in the surface layer and slow or moderately slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer and moderately acid to slightly alkaline in the substratum
Erosion hazard: Very severe
Depth to water table: At a depth of 1.5 to 2.0 feet from March to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Many areas of these soils are woodland. Some areas were cleared but are reverting to brushland or woodland. A few areas are pasture.

These soils are unsuited to cultivated crops because of excessively steep slopes and a hazard of erosion. In most areas a continuous sod cover is needed to avoid excessive soil loss.

These soils are fairly suited to pasture. Steep and very steep slopes hinder harvesting and reseeding operations for hay. Overgrazing reduces quantity and quality of forage and can cause a severe erosion hazard. Proper stocking rates and rotational grazing help to control erosion. Applying lime and fertilizer, harvesting at the proper stage of plant growth, and controlling weed and brush help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on these soils is moderate. Erosion is a severe hazard during logging operations. Building logging roads and skid trails on the contour and avoiding clearcutting help to control erosion. Steep slopes hinder equipment use.

Steep slopes and the seasonal high water table are severe limitations to use of these soils as a site for dwellings with basements. Dwellings can be designed to conform to the natural slope, or land shaping can provide a more level surface for construction. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Erosion is a hazard on these soils during construction. Reseeding disturbed areas as soon as possible after construction is completed helps to minimize soil loss. An alternative is to locate dwellings on included or nearby areas of less sloping soils that are more favorable to this use.

Low strength on Heuvelton soils, steep slope, and potential for frost action are the main limitations to use of these soils as a site for local road and streets. Providing suitable subgrade or base material or using special construction methods for adequate support help to increase the strength and stability of these soils. Constructing roads on the contour and land shaping and grading help to overcome slope. Providing a coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

These soils are poorly suited to use as a site for septic tank absorption fields. The seasonal high water table, very slow or moderately slow permeability in the substratum, and steepness of slope are the main limitations. Placing a drainage system around the filter field and installing diversions to intercept water from higher areas help to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the very slow or moderately slow permeability. Shaping the land or installing distribution lines on the contour helps to ensure uniform distribution of effluent throughout the absorption field. A suitable alternative is to place the septic system on included or nearby soils, such as Pyrities soils, that are less sloping and better suited to this use.

The capability subclass is 7e for Heuvelton and Depeyster soils. The forestland ordination symbol is 2R for Heuvelton soils and 3R for Depeyster soils.

HnA—Hogansburg fine sandy loam, 0 to 3 percent slopes

This is a very deep, nearly level, moderately well drained soil on broad tops of low ridges and hills and on benches on glacial till plains. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Hogansburg soil—

Surface layer: 0 to 10 inches, very dark grayish brown fine sandy loam

Subsoil:
10 to 15 inches, brown loam
15 to 25 inches, brown fine sandy loam

Substratum:
25 to 72 inches, light yellowish brown very gravelly fine sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Malone soils and very poorly drained Runeberg soils in shallow depressions and along drainageways. Also included are areas of well drained Grenville soils on convex tops of hills and knolls, areas of moderately deep Nehasne soils where depth to bedrock is less than 40 inches, and areas of rock outcrops. Also included are small areas of sandy Adams soils and gravelly Waddington soils on small ridges and in places where flowing water or wave action deposited sand or stratified sand and gravel and small areas of soils that have numerous stones on the surface. Included soils range to 6 acres and make up about 20 percent of this unit.

Important properties of the Hogansburg soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From a depth of 1.5 to 2 feet from March to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Much of this soil is used for cultivated crops or hay. Some areas are pasture. A few areas are wooded or are reverting to brush.

This soil is well suited to cultivated crops. In some years the seasonal high water table delays plowing and planting in spring. Drainage of included wet spots facilitates early tillage and late harvest operations. Periodic additions of lime and fertilizer according to soil tests help to maintain fertility. Crop rotations that limit consecutive years of row crops help to maintain soil tilth. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to hayland and pasture. Grazing the soil when wet causes surface compaction and loss of pasture seeding. Restricting livestock from pasture in early spring and during other wet periods helps to maintain good soil structure. Regular fertilizing and mowing are needed to maintain productive stands.

Potential productivity for sugar maple on this soil is high. There are no limitations to woodland use and management.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing a coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and the moderately slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field, installing a drainage system around the filter field to reduce wetness, and placing a wide, deep trench below the distribution lines help to compensate for the moderately slow permeability.

The capability subclass is 2w. The forestland ordination symbol is 3A.

HnB—Hogansburg fine sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, moderately well drained soil on broad tops of low ridges and hills, benches, and convex backslopes on glacial till plains. Most areas are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Hogansburg soil—

Surface layer:
0 to 10 inches, very dark grayish brown fine sandy loam

Subsoil:
10 to 15 inches, brown loam
15 to 25 inches, brown fine sandy loam

Substratum:
25 to 72 inches, light yellowish brown very gravelly fine sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Malone soils and very poorly drained Runeberg soils on footslopes, in shallow depressions, and along drainageways. Also included are well drained Grenville soils on tops of hills and ridges, areas of moderately deep Nehasne soils where depth to bedrock is less than 40 inches, and small areas of rock outcrops adjacent to Nehasne soils. Also included are small areas of Adams and Waddington soils on small knolls or ridges where flowing water or wave action deposited sand or stratified sand and gravel. Also included are some small areas that have numerous stones on the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Hogansburg soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: At a depth of 1.5 to 2 feet from March to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Much of this soil is used for cultivated crops or hay. Some areas are pasture. A few areas are wooded or are reverting to brush.

This soil is well suited to cultivated crops. Erosion is a hazard on longer, steeper slopes. Conservation tillage, cover cropping, contour farming, and including sod crops in the crop rotation help to control erosion. In some years the seasonal high water table delays plowing and planting in spring. Draining included wet spots is needed for early tillage and late harvest operations. Controlling erosion, fertilizing and liming according to soil tests, and crop rotations that limit consecutive years of row crops help to keep this soil highly productive and in good tilth. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to hayland and pasture. Overgrazing damages stabilizing vegetation and results in excessive erosion, especially on longer, steeper slopes. Rotational grazing helps to control erosion and to preserve pasture quality. Grazing when the soil is wet causes surface compaction and loss of pasture seeding. Restricting livestock from pasture in early spring and during other wet periods helps to maintain good soil structure. Adding lime and fertilizer according to soil tests and yearly mowing help to maintain productive stands.

Potential productivity for sugar maple on this soil is high. There are no limitations to woodland use and management.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and moderately slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the moderately slow permeability.

The capability subclass is 2e. The forestland ordination symbol is 3A.

HrB—Hogansburg and Grenville soils, 0 to 8 percent slopes, very stony

This map unit consists of very deep, nearly level to gently sloping soils on glacial till plains. Typically, moderately well drained Hogansburg soils are on backslopes, benches, and broad hilltops, and well drained Grenville soils are on shoulders and narrow convex tops of ridges and hills. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. Most areas of this soil are irregular in shape. Areas are 6 to 30 acres, but the range is 6 to 50 acres. Some areas consist almost entirely of either Hogansburg or Grenville soils, and some areas consist of both soils. Although these soils have similar interpretations for most uses, they have many surface stones and were not separated in mapping. Total acreage of the map unit is about 50 percent Hogansburg soils, 30 percent Grenville soils, and 20 percent other soils.

Typical sequence, depth, and composition of the layers of the Hogansburg soils—

Surface layer:
0 to 10 inches, very dark grayish brown fine sandy loam

Subsoil:
10 to 15 inches, brown loam
15 to 25 inches, brown fine sandy loam

Substratum:
25 to 72 inches, light yellowish brown very gravelly fine sandy loam

Typical sequence, depth, and composition of the layers of the Grenville soils—

Surface layer:
0 to 5 inches, very dark grayish brown fine sandy loam

Subsoil:
5 to 26 inches, yellowish brown and brown fine sandy loam
26 to 37 inches, brown and pale brown fine sandy loam

Substratum:
37 to 72 inches, grayish brown sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Malone soils and very poorly drained Runeberg soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of moderately deep Nehasne soils where bedrock is less than 40 inches deep, some areas of rock outcrops adjacent to Nehasne soils, and areas of sandy Adams soils and gravelly Waddington soils where small pockets of sand and gravel were deposited. Also included are small areas that are free of surface stones. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Hogansburg soils—

Permeability: Moderate in the surface layer and subsoil and moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: At a depth of 1.5 to 2 feet from March to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of Grenville soils—

Permeability: Moderate in the surface layer and subsoil and moderately slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Strongly acid to slightly acid in the surface layer, moderately acid to neutral in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are used as woodland or unimproved pasture. Some abandoned pastures are reverting to brushland or woodland.

These soils are poorly suited to cultivated crops or hay. Erosion is a moderate hazard. Numerous surface stones severely impede use of tillage, planting, and harvesting equipment.

These soils are poorly suited to pasture. Surface stones severely limit use of equipment needed to improve and maintain pasture. Managing stocking rates and brush control are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for trees on these soils is high. Surface stones hinder machine planting. Otherwise, there are few limitations to woodland use and management.

The seasonal high water table on Hogansburg soils is a limitation to use of these soils as a site for dwellings with basements. Grenville soils, however, are well suited to this use. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. In some areas clearing the surface of stones is needed to establish a lawn on these soils.

Potential for frost action is the main limitation to use of these soils as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Moderately slow permeability in the substratum of Hogansburg and Grenville soils and the seasonal high water table on Hogansburg soils are the main limitations to use of these soils as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the moderately slow permeability. Installing a drainage system around the filter field helps to reduce wetness.

The capability subclass is 6s for Hogansburg and Grenville soils. The forestland ordination symbol is 3A for Hogansburg soils and 3X for Grenville soils.

IaB—Insula gravelly fine sandy loam, 0 to 8 percent slopes

This is a shallow, nearly level and gently sloping, well drained soil on tops and sides of broad ridges and hills of slight relief. Areas of this soil are irregular in shape and range from 6 to 60 acres.

Typical sequence, depth, and composition of the layers of the Insula soil—

Surface layer
0 to 1 inch, slightly decomposed leaf litter
1 to 3 inches, black highly decomposed organic material and fine sand

Subsoil:
3 to 16 inches, brown gravelly fine sandy loam

Bedrock:
16 inches

Included with this soil in mapping are small areas of Summerville soils that have a higher soil reaction than that of Insula soils. Also included are areas of moderately deep Nehasne soils on some side slopes; areas of very deep Grenville soils; and some small areas of somewhat poorly drained, moderately deep Ogdensburg soils and poorly drained Hannawa soils in depressions. Also included are small areas that have excessive amounts of stones and flagstones on the surface; areas of rock outcrops that commonly are on short, discontinuous scarps; and some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Insula soil—

Permeability: Moderately rapid throughout the mineral soil
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil Reaction: Very strongly acid to slightly acid throughout
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are woodland. A few areas are cultivated.

This soil is poorly suited to cultivated crops. Low available water capacity and low natural fertility limit productivity. Included areas of rock outcrop, very shallow soils, and areas with numerous surface stones can cause excessive wear on tillage equipment. Conservation tillage or other practices that leave a mulch layer on the surface and minimizing use of tillage equipment help to conserve soil moisture, to increase yields, and to minimize equipment repairs. Adding fertilizer and lime according to soil tests helps to increase yields provided crops receive water requirements. Erosion is a hazard on longer, steeper slopes. Conservation practices, such as stripcropping and conservation tillage, help to control erosion.

This soil is poorly suited to hay and pasture. Low available water capacity is a severe limitation, especially in summer. Shallow depth to bedrock severely limits adaptable forage plants. Rotational grazing, additions of lime and fertilizer according to soil tests, and proper stocking rates increase vigor and productivity of pasture seedlings.

Potential productivity for red pine on this soil is low.

Windthrow is a severe hazard because shallow depth to bedrock limits root development. Minimizing thinning reduces the windthrow hazard. The soil is droughty and the seedling mortality rate is severe. Timely planting when the soil is still moist and selecting adaptable plants help to reduce the seedling mortality rate.

Shallow depth to bedrock is a severe limitation to use of this soil as a site for dwellings with basements. Dwellings could be built above bedrock and landscaped with additional fill. An alternative is to build on included areas of deeper soils, such as Grenville soils, that are better suited to this use.

Shallow depth to bedrock is a severe limitation to use of this soil as a site for local roads and streets. Most included areas of sandstone and granitic bedrock are difficult and expensive to blast. An alternative is to plan grades and routes of roads to avoid rock removal.

This soil is poorly suited to septic tank absorption fields. Shallow depth to bedrock is the main limitation. The septic system could be placed on included or nearby deeper soils, such as gently sloping to strongly sloping areas of Grenville soils.

The capability subclass is 3s. The forestland ordination symbol is 2D.

InB—Insula gravelly fine sandy loam, 0 to 8 percent slopes, very rocky

This is a shallow, nearly level and gently sloping, well drained soil on tops and sides of broad ridges and hills that have slight relief. Rock outcrops cover 2 to 10 percent of the surface. Most areas are nearly level, but some areas are on short scarps.

Typical sequence, depth, and composition of the layers of the Insula soil—

Surface layer:
0 to 1 inch, slightly decomposed leaf litter
1 to 3 inches, black highly decomposed organic material mixed with fine sand

Subsoil:
3 to 16 inches, brown gravelly fine sandy loam

Bedrock:
16 inches

Included with this soil in mapping are small areas of Summerville soils, which have a higher soil reaction than that of Insula soils. Also included are some small areas of very shallow Quetico soils; some areas of moderately deep Nehasne soils and very deep Grenville soils on side slopes; and small areas of somewhat poorly drained, moderately deep Ogdensburg soils and poorly drained Hannawa soils in depressions. Also included are small areas of soils that have excessive amounts of stones and flagstones on the surface and some small areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Insula soil—

Permeability: Moderately rapid throughout the mineral soil layer
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil Reaction: Very strongly acid to slightly acid
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are woodland. A few areas are cultivated.

This soil is poorly suited to cultivated crops. Low available water capacity and low natural fertility are the main limitations. Rock outcrops impede operation of modern machinery. Included areas of very shallow Quetico soils and areas of numerous surface stones can cause excessive wear on tillage equipment. Conservation tillage or other practices that leave a water-conserving mulch layer on the surface and minimizing use of tillage equipment help to increase yields and to protect equipment. Adding fertilizer and lime according to soil tests helps to increase yields if crops receive the water they require. Erosion is a hazard on longer, steeper slopes. Conservation practices, such as stripcropping and conservation tillage, help to control erosion.

This soil is poorly suited to hay and pasture. Low available water capacity severely reduces productivity, especially in summer. Shallow depth to bedrock severely limits adaptable forage plants. Rotational grazing, adding lime and fertilizer according to soil tests, and maintaining proper stocking rates help to increase vigor and productivity of pasture seedlings.

Potential productivity for red pine on this soil is low. Windthrow is a severe hazard because shallow depth to bedrock limits root development. Minimizing thinning helps to reduce windthrow. The seedling mortality rate is severe because the soil is droughty. Timely planting when the soil is still moist and selecting adaptable species help to increase survival and growth of seedlings.

Shallow depth to bedrock and rock outcrops are severe limitations to use of this soil as a site for dwellings with basements. Dwellings could be built above bedrock and landscaped with additional fill. An alternative is to build on included soils, such as Grenville soils, that are deeper than the Insula soil.

Shallow depth to bedrock and rock outcrops are severe limitations to use of this soil as a site for local roads and streets. The included areas of sandstone and granitic bedrock are difficult and expensive to blast. In many areas grades and routes of roads could be planned to avoid rock removal.

This soil is poorly suited to septic tank absorption fields because of shallow depth to bedrock. The septic system could be placed on included deeper soils, such as gently sloping to strongly sloping Grenville soils, which are well suited to this use.

The capability subclass is 6s. The forestland ordination symbol is 2D.

IrC—Insula-Rock outcrop complex, rolling

This map unit consists of the shallow, well drained Insula soil and areas of Rock outcrop in rolling areas of complex topography (fig. 8). Generally, it is on networks of ridges and hills where folded and tilted granitic bedrock is at or near the surface. Slopes range from 5 to 15 percent. Most areas of this soil and Rock outcrop are irregular in shape. Areas range from 6 to 300 acres. The unit is about 45 percent Insula soil, 25 percent Rock outcrop, and 30 percent other soils. The Insula soil and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Insula soil—

Surface layer:
0 to 1 inch, slightly decomposed leaf litter
1 to 3 inches, black highly decomposed organic material mixed with fine sand

Subsoil:
3 to 16 inches, brown gravelly fine sandy loam

Bedrock:
16 inches

Included with this soil in mapping are small areas of very poorly drained Carbondale and Dorval soils in low-lying pockets between ridges. Also included are small areas of poorly drained and very poorly drained, clayey Adjidaumo soils in depressions; small, scattered, slightly concave basins containing clayey, somewhat poorly drained Muskellunge soils; and small areas of very shallow Quetico soils. Also included are some very stony areas, areas of steeper soils on side slopes of short escarpments, and areas of moderately deep Nehasne soils and very deep Pyrities soils on backslopes and foot slopes. Also included are some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 30 percent of this unit.

Important properties of the Insula soil—

Permeability: Moderately rapid throughout the mineral soil layer
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil Reaction: Very strongly acid to slightly acid
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of the Insula soil are forested. Some areas are in rough pasture.

The Insula soil is poorly suited to cultivated crops. Use of farm equipment is difficult or impossible because of complex topography and numerous rock outcrops and scarps.

The Insula soil is poorly suited to pasture. Uneven topography and included areas of scarps and wet soils severely hinder use of equipment needed to improve or maintain pasture. Managing stocking rates and controlling brush are needed. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for red pine on the Insula soil is low. Shallow depth to bedrock limits root development and windthrow is a severe hazard. Minimizing thinning reduces windthrow. The seedling mortality rate is severe because the soil is droughty. Timely planting when the soil is still moist and selecting adaptable species help to reduce the seedling mortality rate. Rock outcrops and included scarps restrict use of machine planting and harvesting equipment. Trees are most productive on included areas of deeper Pyrities and Nehasne soils that border many hills and ridges.

Shallow depth to bedrock and numerous rock outcrops are severe limitations to use of the Insula soil as a site for dwellings with basements. Dwellings could

Figure 8.—Typical landscape of Insula-Rock outcrop complex, rolling. Areas of Rock outcrop and the shallow Insula soil are intermingled in this map unit.

be built above bedrock and landscaped with additional fill. An alternative is to build on included soils, such as deeper Pyrities soils, that are more suitable to this use.

Shallow depth to bedrock and numerous rock outcrops are severe limitations to use of the Insula soil as a site for local roads and streets. Roads and streets could be built on nearby or included soils, such as Pyrities soils, that are more favorable to this use.

The Insula soil is poorly suited to septic tank absorption fields because of shallow depth to bedrock and rock outcrops. Nearby or included, deeper soils, such as Pyrities soils on gentle slopes, are better suited to this use.

The capability subclass is 6s. The forestland ordination symbol is 2D for the Insula soil. Rock outcrop was not assigned an ordination symbol.

IrD—Insula-Rock outcrop complex, hilly

This map unit consists of moderately steep areas of the shallow, well drained Insula soil and areas of Rock outcrop in areas of complex topography. The unit generally is on a network of ridges and hills where folded, tilted granitic bedrock is at or near the surface. Slopes are complex and range from 15 to 35 percent. Most areas of this unit are irregular in shape. Areas range from 6 to 200 acres. The unit consists of about 45 percent Insula soil, 25 percent Rock outcrop, and 30 percent other soils. The Insula soil and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Insula soil—

Surface layer:
0 to 1 inch, slightly decomposed leaf litter
1 to 3 inches, black highly decomposed organic material mixed with fine sand

Subsoil:
3 to 16 inches, brown gravelly fine sandy loam

Bedrock:
16 inches

Included with this soil in mapping are small areas of very poorly drained Carbondale and Dorval soils in low-lying pockets between ridges. Also included are small areas of poorly drained and very poorly drained clayey Adjidaumo soils in depressions; areas of clayey, somewhat poorly drained Muskellunge soils in scattered, small, slightly concave basins; small areas of very shallow Quetico soils; some areas that are stony or bouldery; and many, small, linear bedrock escarpments on side slopes of ridges. Also included are small areas of moderately deep Nehasne soils and very deep Pyrities soils on backslopes and footslopes and some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 30 percent of this unit.

Important properties of the Insula soil—

Permeability: Moderately rapid throughout the mineral soil layer
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil Reaction: Very strongly acid to slightly acid
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this Insula soil are forested. Many areas are in rough pasture.

The Insula soil is poorly suited to cultivation. Use of farm equipment is difficult or impossible because of uneven topography, numerous rock outcrops, and steep slopes.

The Insula soil is poorly suited to pasture. Uneven topography, rock outcrops, excessive slope, and included scarps and wetter soils severely limit use of equipment needed to improve and maintain pasture. Managing stocking rates and controlling brush are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for red pine on this Insula soil is low. Windthrow is a severe hazard because shallow depth to bedrock limits root development. Minimizing thinning helps to reduce windthrow. Steepness of slope, rock outcrops, and included scarps and wet soils severely limit use of machine planting and harvesting equipment. The seedling mortality rate is excessive because the Insula soil is droughty. Timely planting when the soil is still moist and selecting adaptable species help to reduce the seedling mortality rate. Trees are most productive on included areas of deeper Pyrities and Nehasne soils that border many hills and ridges.

Excessive slope, shallow depth to bedrock, and numerous rock outcrops are severe limitations to use of the Insula soil as a site for dwellings with basements. Included areas of less sloping, deeper soils, such as Pyrities soils, are better suited to this use.

Excessive slope, shallow depth to bedrock, and numerous rock outcrops are severe limitations to use of the Insula soil as a site for local roads and streets. Grade and alignment of roads could be planned to avoid excessive slope and rock removal. An alternative is to build roads and streets on nearby or included soils, such as Pyrities soils, that are deeper and less sloping than the Insula soil.

The Insula soil is poorly suited to septic tank absorption fields because of excessive slope, shallow depth to bedrock, and areas of exposed bedrock. Inclusions of deeper soils, such as Pyrities soils on gentler slopes, are better suited to this use.

The capability subclass is 7s. The forestland ordination symbol is 2D for the Insula soil. Rock outcrop was not assigned an ordination symbol.

KaA—Kalurah fine sandy loam, 0 to 3 percent slopes

This is a very deep, nearly level, moderately well drained soil on slightly convex tops of low ridges, hills, and benches on glacial till plains. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Kalurah soil—

Surface layer:
0 to 11 inches, dark brown fine sandy loam

Subsoil:
11 to 24 inches, brown fine sandy loam
24 to 47 inches, brown gravelly fine sandy loam

Substratum:
47 to 72 inches, dark yellowish brown gravelly fine sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Malone soils and very poorly drained Runeberg soils in shallow depressions and along drainageways. Also included are well drained Pyrities soils on knolls and in other high areas of the map unit, areas of moderately deep Nehasne soils and shallow Summerville and Insula soils where the depth to bedrock is less than 40 inches, and small areas of rock outcrops. Also included are areas of Adams and Waddington soils on small knolls or ridges where flowing water or wave action deposited sand or stratified sand and gravel. Inclusions range to 6 acres and make up about 20 percent of this unit.

Important properties of the Kalurah soil—

Permeability: Moderate in the surface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface

layer, slightly acid to neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From a depth of 1.5 to 2 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. Some areas are used for pasture. A few areas are wooded or are reverting to brush.

This soil is suited to cultivated crops. In some years the seasonal high water table delays planting in spring. Drainage of included wet spots facilitates early tillage and late harvest operations. Additions of fertilizer and lime according to soil tests and a crop rotation that limits consecutive years of row crops help to maintain high productivity and good tilth. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to hayland and pasture. Grazing when the soil is wet causes surface compaction and loss of pasture seeding. Restricting livestock in early spring and during other wet periods helps to maintain good soil structure. Regular fertilizing, liming, and mowing help to maintain productive stands.

Potential productivity for sugar maple on this soil is high. There are few limitations to planting, harvesting, or managing woodlots on this soil.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 2w. The forestland ordination symbol is 3A.

KaB—Kalurah fine sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, moderately well drained soil on broad tops of low ridges and hills, on benches, and on convex backslopes on glacial till plains. Most areas of this soil are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Kalurah soil—

Surface layer:
0 to 11 inches, dark brown fine sandy loam

Subsoil:
11 to 24 inches, brown fine sandy loam
24 to 47 inches, brown gravelly fine sandy loam

Substratum:
47 to 72 inches, dark yellowish brown gravelly fine sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Malone soils and very poorly drained Runeberg soils in shallow depressions and along drainageways. Also included are areas of well drained Pyrities soils on knolls and the tops of hills, areas of moderately deep Nehasne soils and shallow Summerville and Insula soils where depth to bedrock is less than 40 inches, and small areas of rock outcrops. Also included are areas of Adams and Waddington soils on small knolls or ridges where flowing water or wave action deposited sand and stratified sand and gravel. Inclusions range to 6 acres and make up about 20 percent of this unit.

Important properties of the Kalurah soil—

Permeability: Moderate in the surface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: From a depth of 1.5 to 2 feet in November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. Some areas are used as pasture. A few areas are wooded or are reverting to brush.

This soil is suited to cultivated crops. Erosion is a hazard on longer, steeper slopes. Conservation tillage, cover crops, contour farming, and sod crops included in the crop rotation help to control erosion. In some years the seasonal high water table delays plowing and planting in spring. Drainage of included wet spots facilitates early tillage and late harvest operations. Erosion control practices, applications of lime and fertilizer according to soil tests, and crop rotations that limit consecutive years of cultivated crops help to maintain high productivity and good tilth. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to hay and pasture. Overgrazing causes loss of desirable plants and excessive erosion, especially on longer, steeper slopes. Rotational grazing helps to control erosion and to preserve quality of pastures. Grazing when the soil is wet causes surface compaction and loss of pasture seeding. Livestock needs to be restricted from pasture until the soil dries out sufficiently to support animal traffic. Regular fertilizing, liming, and mowing help to maintain productive stands.

Potential productivity for sugar maple on this soil is high. There are few limitations to planting, harvesting, or managing woodlots on this soil.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow permeability in the substratum are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 2e. The forestland ordination symbol is 3A.

KbB—Kalurah and Pyrities soils, 0 to 8 percent slopes, very stony

This map unit consists of very deep, nearly level and gently sloping soils on glacial till plains. Typically, moderately well drained Kalurah soils are on backslopes, benches, and broad hilltops and well drained Pyrities soils are on upper slopes and on convex knolls and hilltops. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. Most areas of these soils are irregular in shape. Areas are 6 to 30 acres, but the range is 6 to 50 acres. Most areas consist almost entirely of either Kalurah or Pyrities soils, but some areas consist of both soils. These soils are similar in use and composition, have many stones on the surface, and were not separated in mapping. The unit is about 55 percent Kalurah soils, 30 percent Pyrities soils, and 15 percent other soils.

Typical sequence, depth, and composition of the layers of the Kalurah soils—

Surface layer:
0 to 11 inches, dark brown fine sandy loam

Subsoil:
11 to 24 inches, brown fine sandy loam
24 to 47 inches, brown gravelly fine sandy loam

Substratum:
47 to 72 inches, dark yellowish brown gravelly fine sandy loam

Typical sequence, depth, and composition of the layers of the Pyrities soils—

Surface layer:
0 to 8 inches, dark brown fine sandy loam

Subsoil:
8 to 30 inches, brown fine sandy loam
30 to 40 inches, brown gravelly fine sandy loam

Substratum:
40 to 72 inches, brown gravelly fine sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Malone soils and very poorly drained Runeberg soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of moderately deep Nehasne soils and shallow Insula and Summerville soils where bedrock is at a depth of less than 40 inches, small areas of rock outcrops, and areas of sandy Adams soils and gravelly Waddington soils in small pockets of sand and gravel on knolls and ridges. Also included are small, scattered areas that are free of surface stones. Included areas range to 6 acres and make up about 15 percent of this unit.

Important properties of Kalurah soils—

Permeability: Moderate in the surface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high

Soil reaction: Moderately acid to neutral in the surface layer, slightly acid or neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: From a depth of 1.5 to 2 feet in November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of Pyrities soils—

Permeability: Moderate in the surface layer and the subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are used as woodland or as unimproved pasture. Some abandoned pastures are reverting to brush or trees.

These soils are poorly suited to cultivated crops. Numerous surface stones are a severe limitation to use of tillage, planting, and harvesting equipment. Erosion is a moderate hazard.

These soils are poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Managing stocking rates and controlling brush are management concerns. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on these soils is high. Surface stones hinder machine planting. Otherwise, there are few limitations to woodland use and management.

The seasonal high water table on Kalurah soils is a limitation to use of these soils as a site for dwellings with basements. However, Pyrities soils are well suited to this use. On Kalurah soils, installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. In some areas surface stones need to be cleared before establishing lawns.

Potential for frost action is the main limitation to use of these soils as a site for local roads and streets. Pyrities soils are less susceptible to frost action than Kalurah soils. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Slow permeability in the substratum of Kalurah and Pyrities soils and the seasonal high water table on Kalurah soils are the main limitations to use of these soils as a site for septic tank absorption fields. Wetness and slow permeability can cause effluent from absorption fields to seep out on the surface. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. Installing a drainage system around the filter field helps to reduce wetness.

The capability subclass is 6s for the Kalurah and Pyrities soils. The forestland ordination symbol is 4A for Kalurah soils and 3A for Pyrities soils.

Lc—Lovewell silt loam

This is a very deep, moderately well drained, nearly level soil on flood plains bordering streams and rivers. Areas of this soil are long and narrow. They range from 10 to 80 acres. Typically, slopes are smooth and range from 0 to 3 percent.

Typical sequence, depth, and composition of the layers of the Lovewell soil—

Surface layer:
0 to 10 inches, very dark grayish brown silt loam
10 to 14 inches, very dark grayish brown and dark brown silt loam

Subsoil:
14 to 29 inches, dark yellowish brown silt loam

Substratum:
29 to 52 inches, dark yellowish brown very fine sandy loam
52 to 72 inches, grayish brown very fine sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Cornish soils, small areas of poorly drained Adjidaumo soils, and small areas of very poorly drained Borosaprists and somewhat poorly drained to very poorly drained Fluvaquents in depressions. Included areas range to 6 acres and make up about 10 percent of this map unit.

Important properties of the Lovewell soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Very strongly acid to slightly acid throughout
Erosion hazard: Slight
Depth to water table: From 1.5 to 3.0 feet in November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Occasional

Most areas of this soil are in cultivated crops or trees.

This soil is suited to cultivated crops. It is subject to flooding, in most years early enough in spring not to interfere with tillage or establishing seedlings. Cover crops or sod crops in the cropping system help to protect the surface from scouring during flooding. Low soil reaction and medium natural fertility are limitations. Applying lime and fertilizer according to soil tests helps to increase soil reaction and to improve fertility. Streambanks are subject to erosion. Tree borders and green strips along streambanks help to stabilize streambanks.

This soil is suited to hay and pasture. Fences and tree borders along streambanks help to protect streambanks from erosion. Overgrazing can restrict plant growth and cause loss of pasture seeding. Grazing when this soil is wet causes surface compaction. Keeping livestock off this soil in early spring and during other wet periods helps to maintain good soil tilth. Proper stocking rates, rotational grazing, and yearly mowing help to maintain quantity and quality of forage. Applying lime and fertilizer is needed for optimum growth of pasture grasses. In some years the seasonal high water table limits the duration of deep-rooted legume seedlings. Subsurface drainage helps to reduce wetness.

Potential productivity for white pine on this soil is high. Windthrow is a moderate hazard because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted plants help to reduce windthrow. Plant competition is a problem on tree plantations. Mechanical or chemical site preparation helps to reduce plant competition.

Flooding and the seasonal high water table are limitations to use of this soil as a site for dwellings with basements. Dwellings could be built on other soils, such as deep, well drained Pyrities soils, that are better suited to this use.

This soil is fairly suited to use as a site for local roads and streets. Seasonal flooding and potential for frost action are hazards. Constructing roads and streets on raised fill material helps to overcome flooding. Using coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

This map unit is poorly suited to septic tank absorption fields because flooding and wetness. These limitations can cause a failure of the septic system and contamination of both ground water and surface water. The absorption field could be placed on nearby soils, such as Pyrities soils, that are not wet.

The capability subclass is 2w. The forestland ordination symbol is 10A.

Ld—Loxley mucky peat

This is a very deep, nearly level, very poorly drained soil that formed in organic deposits in low-lying basins and depressions. Small hummocks and bumps on the surface are prevalent across otherwise smooth, nearly level slopes. Areas of this soil are 10 to 200 acres, but the range is 6 to 1,000 acres. Slopes range from 0 to 2 percent.

Typically the sequence, depth, and composition of the layers of the Loxley soil —

Surface layer:
0 to 3 inches, very dark grayish brown mucky peat

Subsurface layer:
3 to 72 inches, black muck

Included with this soil in mapping are small areas of Berkshire, Searsport, Naumburg, Croghan, Adams, Tughill, Lyme, Colton, and Dawson soils. Searsport soils, somewhat poorly drained and poorly drained Naumburg soils, moderately well drained Croghan soils, and somewhat excessively drained or excessively drained Adams soils are sandy. Well drained Berkshire soils, very poorly drained Tughill soils, and poorly drained Lyme soils are loamy and in most areas have stones and boulders on the surface. Colton soils are excessively drained and very gravelly. Naumburg, Croghan, Adams, Lyme, and Colton soils are on small hills and ridges. Dawson soils formed in similar materials as the Loxley soil, but are less than 51 inches deep to a mineral substratum. Dawson soils are in perimeter areas near adjoining map units, or they are near included areas of mineral soils. Also included are small areas of Borosaprists and Fluvaquents and some small areas of rock outcrops and shallow soils. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Loxley soil—

Permeability: Moderate or moderately rapid in the

surface layer and moderately slow to moderately rapid below
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid throughout
Erosion hazard: Slight
Depth to water table: From 1 foot above to 1 foot below the surface from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are woodland. Some areas are in open sphagnum bogs.

This soil is not suited to agriculture unless artificial drainage is installed.

Potential productivity for black spruce on this soil is low. The seasonal high water table causes a high seedling mortality rate. Selecting water-tolerant species helps to improve timber production. The root zone in this soil is very shallow, and trees blow over easily. Minimizing thinning helps to reduce windthrow. The soil is soft and unstable when wet and will not support heavy planting or logging equipment. Logging in winter when the ground is frozen reduces the problems from heavy equipment use.

This soil is poorly suited to dwellings with basements because of the subsidence hazard, seasonal ponding, and low strength. Well drained, very deep Berkshire soils, which are nearby or included, are better suited to this use.

Potential subsidence, ponding, and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. Where possible, routes can be planned around this soil.

This soil is poorly suited to septic tank absorption fields because of the subsidence hazard, ponding, and moderately slow permeability. Berkshire or Pyrities soils, which are nearby or included, are better suited to this use.

The capability subclass is 5w. The forestland ordination symbol is 2W.

LeC—Lyman-Rock outcrop complex, 3 to 15 percent slopes, very bouldery

This map unit consists of shallow, somewhat excessively drained Lyman soil and areas of Rock outcrop generally on upper slopes and tops of ridges and hills where folded and tilted granitic bedrock is at or near the surface. Boulders 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface of this soil. Most areas of this soil and rock outcrops are irregular in shape. Areas range from 6 to 200 acres. The unit is about 45 percent Lyman soils, 30 percent Rock outcrop, and 25 percent other soils. Areas of the Lyman soil and Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Included with this soil in mapping are small areas of Dawson soils in low-lying pockets between ridges. Also included are areas of soils that are less than 8 inches deep to bedrock, areas of steeper slopes and escarpments on hillsides, and areas of moderately deep Tunbridge soils and very deep Potsdam soils on backslopes. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of the Lyman soil are forested.

The Lyman soil is unsuited to cultivation. Use of farm equipment is difficult or impossible because of surface boulders and numerous rock outcrops and scarps.

This soil is poorly suited to pasture. Uneven topography, numerous surface boulders, and included scarps and wet soils severely limit use of equipment needed to improve and maintain pasture. Managing stocking rates and controlling brush are needed. Grazing when these soils are wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on the Lyman soil is low. The soil is droughty and the seedling mortality rate is severe. Timely planting when the soil is still moist and selecting adaptable species help to reduce the seedling mortality rate. The windthrow hazard is severe because shallow depth to bedrock limits root development. Minimizing thinning helps to reduce windthrow. On tree plantations plant competition is also a problem. Mechanical or chemical site preparation helps to reduce plant competition. Numerous surface boulders and rock outcrops restrict use of machine planting and harvesting equipment.

Shallow depth to bedrock and numerous rock outcrops are severe limitations to use of the Lyman soil as a site for dwellings with basements. Building above bedrock and landscaping with additional fill are needed. An alternative is to select included soils, such as Potsdam soils, that are better suited to this use.

Shallow depth to bedrock and numerous rock outcrops are severe limitations to use of the Lyman soil as a site for local roads and streets. Grades and locations of roads could be planned to avoid rock removal. Most areas of this soil are in remote areas where roads on this soil could be avoided.

The Lyman soil is poorly suited to use as a site for septic tank absorption fields because of shallow depth to bedrock and rock outcrops. Most inclusions of deeper soils are better suited to this use.

The capability subclass is 6s for the Lyman soil and 8 for Rock outcrop. The forestland ordination symbol is 2D for the Lyman soil. Rock outcrop was not assigned an ordination symbol.

LeD—Lyman-Rock outcrop complex, 15 to 35 percent slopes, very bouldery

This map unit consists of the shallow, somewhat excessively drained Lyman soil and areas of Rock outcrop on side slopes and tops of ridges and hills or on networks of hills and ridges where folded and tilted granitic bedrock is at or near the surface. The Lyman soil is generally on crests and backslopes of ridges and hills near Rock outcrop. In some places rock outcrop forms nearly vertical scarps. Boulders 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas of this soil and rock outcrops are irregular in shape. Areas range from 6 to 200 acres. This unit is about 45 percent Lyman soil, 30 percent Rock outcrop, and 25 percent other soils. The Lyman soil and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, gneiss bedrock

Included with this soil in mapping are small areas of Dawson soils in low-lying pockets between ridges. Also included are areas of soils that are less than 8 inches deep to bedrock, areas of steeper soils and escarpments on side slopes, and areas of moderately deep Tunbridge soils and very deep soils on hillsides. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

The Lyman soil is mostly forested.

The Lyman soil is unsuited to cultivation. Use of farm equipment is difficult or impossible because of steepness of slope, numerous rock outcrops, boulders on the surface, and included wet soils and scarps.

The Lyman soil is poorly suited to pasture. Uneven topography, numerous surface boulders, and included scarps and wet soils severely limit use of equipment needed to improve and maintain pasture. Managing stocking rates and controlling brush are needed. Grazing when the Lyman soil is wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on the Lyman soil is low. The soil is droughty and the seedling mortality rate is severe. Timely planting when the soil is still moist and selecting adaptable species help to reduce the seedling mortality rate. Windthrow is a severe hazard because shallow depth to bedrock limits root development. Minimizing thinning helps to reduce windthrow. Plant competition is a problem for tree plantations. Mechanical or chemical site preparation helps to reduce plant competition. Steepness of slope, numerous surface boulders, and rock outcrops restrict use of machine planting and harvesting equipment.

Shallow depth to bedrock, numerous rock outcrops, and slope are severe limitations to use of the Lyman soil as a site for dwellings with basements. Nearby inclusions of deeper, less sloping soils likely are more suitable to this use.

Shallow depth to bedrock, numerous rock outcrops, and slope are severe limitations to use of the Lyman soil as a site for local roads and streets. Roads and streets could be planned around the Lyman soil and rock outcrops.

The Lyman soil is poorly suited to use as a site for septic tank absorption fields because of slope, shallow depth to bedrock, and rock outcrops. Most inclusions of deeper, less sloping soils are better suited to this use.

The capability subclass is 7s for the Lyman soil and 8 for Rock outcrop. The forestland ordination symbol is 2D for the Lyman soil. Rock outcrop was not assigned an ordination symbol.

Lt—Lyme-Tughill complex, very bouldery

This map unit consists of very deep, poorly drained and very poorly drained, nearly level and gently sloping soils formed in glacial till deposits in low positions between hills and ridges or in broad, beveled areas on gentle backslopes of large hills, on uplands. Slopes are mostly simple and range from 0 to 8 percent. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of these soils have various shapes. Most areas are 40 to 80 acres, but the range is 6 to 80 acres. The unit is about 55 percent poorly drained Lyme soil, 25 percent very poorly drained Tughill soil, and 20 percent other soils. The Lyme and Tughill soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Lyme soil are as follows—

Surface layer:
0 to 3 inches, very dark gray sandy loam

Subsoil:
3 to 6 inches, grayish brown sandy loam
6 to 11 inches, dark grayish brown sandy loam
11 to 16 inches, brown cobbly sandy loam

Substratum:
16 to 24 inches, dark grayish brown gravelly sandy loam
24 to 72 inches, brown gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Tughill soil—

Surface layer:
0 to 4 inches, black muck
4 to 8 inches, black gravelly mucky sandy loam

Subsoil:
8 to 40 inches, grayish brown very gravelly sandy loam

Substratum:
40 to 72 inches, gray very gravelly sandy loam

Included with these soils in mapping are small areas of organic Dawson and Loxley soils in pockets of accumulated organic material. Also included, on pronounced hummocks, are small areas of well drained Berkshire soils; areas of sandy Searsport and Naumburg soils where flowing water deposited sand, commonly on low terraces along streams; and small areas where significantly fewer stones are on the surface. Also included, particularly at higher elevations, are areas of well drained, moderately deep Tunbridge soils on small hillocks. Inclusions range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Lyme soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil Reaction: Very strongly acid or strongly acid throughout
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 1.5 feet in November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Tughill soil—

Permeability: Moderate or moderately rapid in the organic part of the surface layer, moderate in the mineral part of the surface layer and subsurface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to strongly acid in the surface and the subsurface layers, extremely acid to moderately acid in the subsoil, and moderately acid or slightly acid in the substratum

Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 0.5 foot below the surface in November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Much of this unit is woodland.

These soils are poorly suited to cultivated crops. Stoniness and wetness are the main limitations.

These soils are poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. In most years the surface is saturated for much of the growing season and pastures are not productive. Grazing when these soils are wet causes surface compaction.

Potential productivity for red maple on these soils is low or moderate. In most areas the soils are too wet and bouldery for machine planting of seedlings. Operating planting and harvesting equipment on saturated soils causes rutting and surface compaction. Logging when the soil is frozen or in late summer when the soil is relatively dry reduces problems from equipment use. Windthrow is a severe hazard because the seasonal high water table limits root development. Minimizing thinning reduces windthrow. The seedling mortality rate is severe because of wetness. Timely planting when the soil is moist, but not saturated, and selecting adaptable species help to reduce the seedling mortality rate.

These soils are unsuitable for dwellings with basements because of severe wetness. Nearby or included soils, such as Berkshire soils, are better suited to this use.

The seasonal high water table and potential for frost action are severe limitations to use of these soils as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

These soils are unsuitable for septic tank absorption fields because of the seasonal high water table and slow permeability in the substratum. Nearby or included soils, such as Berkshire soils, are well suited to this use.

The capability subclass is 7s for the Lyme and Tughill soils. The forestland ordination symbol is 8W for the Lyme soil and 2W for the Tughill soil.

MaA—Malone loam, 0 to 3 percent slopes

This is a very deep, nearly level, somewhat poorly drained soil in faintly concave areas on broad ridges and hilltops and on benches and footslopes on glacial till plains. Areas of this soil are irregular in shape. Most areas are 6 to 20 acres, but the range is 6 to more than 50 acres.

Typical sequence, depth, and composition of the layers of the Malone soil—

Surface layer:
0 to 10 inches, very dark grayish brown loam

Subsoil:
10 to 19 inches, dark yellowish brown gravelly fine sandy loam
19 to 25 inches, grayish brown gravelly sandy loam

Substratum:
25 to 72 inches, light brownish gray gravelly sandy loam

Included with this soil in mapping are small areas of very poorly drained Runeberg soils in depressions and along drainageways. Also included are areas of moderately well drained Kalurah and Hogansburg soils on convex knolls and in other high areas of the map unit, areas of moderately deep Ogdensburg soils and shallow Hannawa soils where bedrock is less than 40 inches deep, and small areas of rock outcrops. Also included are some small areas that have a very stony surface layer. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Malone soil—

Permeability: Moderate in the surface layer and moderately slow or slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From 0.5 to 1.5 feet below the surface in October to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hay and pasture. Some areas are used for cultivated crops or as woodland, or are reverting to brushland or woodland.

This soil is poorly suited to cultivated crops because of wetness. In some years wetness delays planting in spring and harvesting in fall. The seasonal high water table restricts root growth of most plants. Artificial drainage helps to reduce wetness. Stones in the soil can cause excessive wear of machinery. Draining the soil and adding lime and fertilizer according to soil tests increase productivity on this soil.

This soil is fairly suited to hayland and pasture. The seasonal high water table restricts the root growth of some plants, especially legumes. In areas with adequate drainage, the soil is well suited to legume hay crops. Grazing when the soil is wet causes surface compaction. Restricting stock from pasture in early spring and during other wet periods helps to maintain good soil structure. Regular fertilizing, liming, and mowing help to sustain productive stands.

Potential productivity for red maple on this soil is moderate. Wetness limits use of equipment. Restricting heavy equipment use to drier periods or when the soil is frozen in winter helps to minimize rutting of the soil and related equipment problems. The seedling mortality rate is moderate because of wetness. Timely planting when the soil is still moist, but not wet, and selecting adaptable species reduce the seedling mortality rate. Windthrow hazard is moderate because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow or moderately slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Placing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow or moderately slow permeability.

The capability subclass is 3w. The forestland ordination symbol is 3W.

MaB—Malone loam, 3 to 8 percent slopes

This is a very deep, gently sloping, somewhat poorly drained soil in slightly concave areas on broad ridges and hilltops and on benches, footslopes, and lower backslopes on glacial till plains. Areas of this soil are irregular in shape. Most areas are 6 to 20 acres, but the range is 6 to more than 50 acres.

Typical sequence, depth, and composition of the layers of the Malone soil—

Surface layer:
0 to 10 inches, very dark grayish brown loam

Subsoil:
10 to 19 inches, dark yellowish brown gravelly fine sandy loam
19 to 25 inches, grayish brown gravelly sandy loam

Substratum:
25 to 72 inches, light brownish gray gravelly sandy loam

Included with this soil in mapping are small areas of very poorly drained Runeberg soils in depressions and along drainageways. Also included are moderately well drained Kalurah and Hogansburg soils on convex knolls and in other high areas, areas of moderately deep Ogdensburg soils and shallow Hannawa soils where bedrock is less than 40 inches deep, and small areas of rock outcrops. Also included are some small areas of very stony soils. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Malone soil—

Permeability: Moderate in the surface layer and moderately slow or slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From 0.5 to 1.5 feet below the surface in October to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hayland or pasture. Some areas are used for cultivated crops or as woodland. Some cleared areas are reverting to brushland or woodland.

This soil is poorly suited to cultivated crops because of wetness. In some years wetness delays planting in spring and harvesting in fall and restricts root growth of most plants. Artificial drainage helps to reduce wetness. Stones in the soil can cause excessive wear of machinery. Erosion can be a hazard on longer, steeper slopes. Conservation measures help to control erosion; they include contour plowing, stripcropping, conservation tillage, and crop rotations that emphasize sod crops. Where the soil is drained and where lime and fertilizer are added according to soil tests, yields are good.

This soil is fairly suited to hayland and pasture. The seasonal high water table restricts root growth of some plants, especially legume hay crops. Grazing the soil when wet causes surface compaction. Restricting stock in early spring and during other wet periods helps to protect pasture seedlings and to maintain good soil structure. Regular fertilizing, liming, and mowing also help to sustain productive stands.

Potential productivity for red maple on this soil is moderate. Wetness limits equipment use. Restricting heavy equipment use to drier periods or when the soil is frozen in winter helps to minimize rutting and equipment problems. The seedling mortality rate is moderate, but can be excessive because of wetness. Timely planting when the soil is still moist but not wet and selecting adaptable species help to reduce the seedling mortality rate. The windthrow hazard is moderate because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth help to prevent frost action from damaging pavement.

The seasonal high water table and the slow or moderately slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Placing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow or moderately slow permeability.

The capability subclass is 3w. The forestland ordination symbol is 3W.

MbB—Malone loam, 0 to 8 percent slopes, very stony

This is a very deep, nearly level to gently sloping, somewhat poorly drained soil in concave areas on broad ridges and hilltops, on concave benches and footslopes, and on glacial till plains. Stones and boulders cover 0.1 to 3 percent of the surface. Areas of this soil are irregular in shape and range from 6 to more than 50 acres.

Typical sequence, depth, and composition of the layers of the Malone soil—

Surface layer:
0 to 10 inches, very dark grayish brown loam

Subsoil:
10 to 19 inches, very dark grayish brown loam
19 to 25 inches, grayish brown gravelly sandy loam

Substratum:
25 to 72 inches, light brownish gray gravelly sandy loam

Included with this soil in mapping are small areas of very poorly drained Runeberg soils in depressions and along drainageways. Also included are areas of moderately well drained Kalurah and Hogansburg soils on convex knolls and in other high areas, areas of moderately deep Ogdensburg soils and shallow Hannawa soils in places where bedrock is close to the surface, and small areas of rock outcrops near Hannawa and Ogdensburg soils. Also included are some small areas of soils that have few or no stones on the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Malone soil—

Permeability: Moderate in the surface layer and moderately slow or slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: The seasonal high water table ranges from 0.5 to 1.5 feet below the surface from October to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are wooded or are used for unimproved pasture (fig. 9). Some cleared areas are reverting to brush or woodland.

This soil is poorly suited to cultivated crops because of numerous surface stones and wetness. Surface stones severely impede use of tillage, planting, and harvesting equipment.

This soil is poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for trees on this soil is moderate. Wet soil conditions and surface stones limit equipment use. Restricting heavy equipment use to drier periods or when the soil is frozen in winter helps to reduce rutting and equipment problems. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable species help to reduce the seedling mortality rate. The windthrow hazard is moderate because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow or moderately slow permeability limitat use of this soil as a site for septic tank absorption fields. Placing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for slow or moderately slow permeability.

The capability subclass is 6s. The forestland ordination symbol is 3W.

MdB—Malone-Adjidaumo complex, undulating

This map unit consists of gently sloping soils on margins of till plains and on lake plains where the underlying glacial till protrudes to the mantle of lacustrine sediments and is intermittently exposed at the surface. The somewhat poorly drained Malone soil formed in loamy glacial till on slight knolls. The poorly drained or very poorly drained Adjidaumo soil formed in intervening pockets of clayey, lake or marine sediments. The topography is undulating and in most places the landscape is tilted. Slopes are complex and range from 0 to 8 percent overall, but slopes on the Adjidaumo soil range from 0 to 2 percent. Most areas of these soils are irregular in shape and range from 6 to 20 acres. The unit is about 50 percent Malone soils, 30 percent Adjidaumo soils, and 20 percent other soils. The Malone and Adjidaumo soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Malone soil—

Surface layer:
0 to 10 inches, very dark grayish brown loam

Subsoil:
10 to 19 inches, dark yellowish brown gravelly fine sandy loam
19 to 25 inches, grayish brown gravelly sandy loam

Substratum:
25 to 72 inches, light brownish gray gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Adjidaumo soil—

Surface layer:
0 to 8 inches, very dark gray silty clay

Subsoil:
8 to 18 inches, gray silty clay
18 to 27 inches, gray clay

Substratum:
27 to 72 inches, gray clay

Included with these soils in mapping are numerous small areas where a thin, clayey lacustrine deposit overlies a glacial till substratum less than 40 inches deep. Also included are transitional areas between the Malone and Adjidaumo soils; small pockets of poorly drained and very poorly drained Runeberg soils in depressions within the Malone soil and along drainageways; and, on more abrupt knolls, areas of well drained Pyrities soils. Also included are areas of somewhat poorly drained and poorly drained, coarse loamy over clayey Swanton soils and sandy over clayey Stockholm soils at the edges of the Adjidaumo

Figure 9.—An area of Malone loam, 0 to 8 percent slopes, very stony, in the middleground and background. Many areas of this soil are used as pasture, but surface stones interfere with pasture management. On many pastures, however, stones have been removed. On this pasture, stones from the foreground were placed along the fence, right background.

soil where a thin mantle of loamy or sandy material overlies the clayey lacustrine deposit. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Malone soil—

Permeability: Moderate in the surface layer and moderately slow or slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Moderately acid to slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral to moderately alkaline in the substratum
Depth to water table: From 0.5 to 1.5 feet below the surface from October to May
Depth to bedrock: More than 6 feet
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Adjidaumo soil—

Permeability: Moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil Reaction: Slightly acid or neutral in the surface layer, neutral or slightly alkaline in the subsoil, and

slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Many areas of these soils are used for pasture or hay. Some areas are wooded. Some cleared areas are reverting to brush or woodland.

These soils are poorly suited to cultivated crops. In some years in spring and fall the water table at the surface of the Adjidaumo soil and near the surface of the Malone soil interferes with planting and harvesting operations. Artificial drainage helps to reduce wetness and to improve productivity on both soils. Erosion is a hazard on longer, steeper slopes. Conservation practices help to control erosion; they include contour plowing, stripcropping, and conservation tillage. In some included areas enough stones are on the surface of the Malone soil to hinder both tillage and drainage operations and to cause excessive wear of machinery.

These soils are fairly suited to hayland and pasture. The seasonal high water table restricts root growth of some plants, especially on the Adjidaumo soil. Selecting water-tolerant plants helps to improve yields. Grazing these soils when wet causes surface compaction, especially on the Adjidaumo soil. Restricting stock in spring and during other wet periods helps to maintain good soil structure. Pastures on these soils are good in dry summers, when pastures on other soils are less productive.

Potential productivity for trees on this soil is moderate. Wetness limits equipment use. Restricting heavy equipment use to dry periods or when the soil is frozen in winter will minimize rutting and related problems. The seedling mortality rate can be excessive because of wetness, especially on the Adjidaumo soil. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to reduce the seedling mortality rate. The windthrow hazard is moderate or severe because the seasonal high water table restricts root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is a severe limitation to use of these soils as a site for dwellings with basements. Drainage systems that carry subsurface water away from cellars, footings, and foundations help to reduce wetness. Adequately sealing foundations helps to prevent wet basements. If possible, building on the Adjidaumo soil should be avoided.

The seasonal high water table and potential for frost action are severe limitations to use of these soils as a site for local roads and streets. On the Adjidaumo soil low strength is also a limitation. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. On the Adjidaumo soil providing suitable subgrade or base material and using special construction methods for adequate support help to increase the strength and stability of the soil.

The seasonal high water table and slow permeability are severe limitations to use of these soils as a site for septic tank absorption fields. Placing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. An alternative is to place the absorption field on included or nearby soils, such as Pyrities soils on gentle slopes, that have few limitations to this use.

The capability subclass is 3w for the Malone soil and 4w for the Adjidaumo soil. The forestland ordination symbol is 3W for the Malone soil and 2W for the Adjidaumo soil.

MeB—Malone-Adjidaumo complex, 0 to 8 percent slopes, very stony

This map unit consists of nearly level to gently sloping soils on the margins of till plains and on lake plains where the underlying glacial till protrudes above the surface of the lacustrine deposits. The somewhat poorly drained Malone soil formed on hummocks of loamy glacial till, and the poorly drained or very poorly drained Adjidaumo soil formed in lower lying clayey deposits intervening between hummocks. Stones are 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. Topography is undulating with complex slopes ranging from 0 to 8 percent, but slopes on the Adjidaumo soil range from 0 to 2 percent. Most areas of these soils are irregular in shape and range from 6 to 20 acres. The unit is about 45 percent Malone soils, 35 percent Adjidaumo soils, and 20 percent other soils. The Malone and Adjidaumo soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Malone soil—

Surface layer:
0 to 10 inches, very dark grayish brown loam

Subsoil:
10 to 19 inches, dark yellowish brown gravelly fine sandy loam
19 to 25 inches, grayish brown gravelly sandy loam

Substratum:
25 to 72 inches, light brownish gray gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Adjidaumo soil—

Surface layer:
0 to 8 inches, very dark gray silty clay

Subsoil:
8 to 18 inches, gray silty clay
18 to 27 inches, gray clay

Substratum:
27 to 72 inches, gray clay

Included with these soils in mapping are numerous small areas where thin, clayey lacustrine deposits overlie a glacial till substratum less than 40 inches deep. These deposits are in transitional areas between the Malone and Adjidaumo soils. Also included are small pockets of poorly drained and very poorly drained Runeberg soils in depressions within the Malone soil and along drainageways; areas of Swanton and Stockholm soils at the edges of the Adjidaumo soil where a thin mantle of loamy or sandy material overlies clayey lacustrine deposits; and areas of well drained, loamy Pyrities soils on small hills and ridges. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Malone soil—

Permeability: Moderate in the surface layer and moderately slow or slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From 0.5 to 1.5 feet below the surface from October to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Adjidaumo soil—

Permeability: Moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid or neutral in the surface layer, neutral or slightly alkaline in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of these soils are woodland or brushland. A few areas are used for unimproved pasture.

This soil is poorly suited to cultivated crops because of numerous surface stones and wetness.

This soil is poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Managing stocking rates and controlling brush are needed. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for trees on this soil is moderate. Wetness and in some areas surface stones limit equipment use. Restricting heavy equipment use to dry periods or when the soil is frozen in winter helps to reduce rutting and related problems. The rate of seedling mortality can be excessive because of wetness, especially in the Adjidaumo soils. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to reduce the seedling mortality rate. The windthrow hazard is moderate or severe because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted varieties help to reduce windthrow.

The seasonal high water table is a severe limitation to use of these soils as a site for dwellings with basements. The limitation is less severe for the Malone soil than for the Adjidaumo soil. On the Malone soil, installing drainage systems that carry subsurface water away from cellars, footings, and foundations help to reduce wetness and adequately sealing foundations help to prevent wet basements. In most areas surface stones have to be removed before lawns can be established. An alternative is to build on included well drained soils, such as Pyrities soils, that are well suited to dwellings with basements.

The seasonal high water table and potential for frost action are severe limitations to use of these soils as a site for local roads and streets. On the Adjidaumo soil low strength is also a limitation. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. On the Adjidaumo soil providing suitable subgrade or base material and using special construction methods for adequate support help to increase the strength and stability of the soil.

The seasonal high water table and slow permeability are severe limitations to use of these soils as a site for septic tank absorption fields. These limitations are less severe on the Malone soil than on the Adjidaumo soil. On the Malone soil placing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. An alternative is to avoid the Adjidaumo soil and to place the absorption field on included soils, such as Pyrities soils, that are more favorable to septic tank absorption fields.

The capability subclass is 6s for the Malone soil and 4w for the Adjidaumo soil. The forestland ordination symbol is 3W for the Malone soil and 2W for the Adjidaumo soil.

MfA—Matoon silty clay loam, 0 to 2 percent slopes

This is a moderately deep, nearly level, somewhat poorly drained soil mostly in broad basins or plains where clayey marine sediments are moderately deep over bedrock. Areas of this soil are irregular in shape. Most areas are 6 to 50 acres, but the range is 6 to 200 acres. Slopes range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers of the Matoon soil—

Surface layer:
0 to 8 inches, very dark grayish brown silty clay loam

Subsoil:
8 to 12 inches, dark gray and gray silty clay loam
12 to 16 inches, gray silty clay
16 to 27 inches, dark grayish brown clay

Bedrock:
27 inches, sandstone bedrock

Included with this soil in mapping are small areas of poorly drained Guff soils in low-lying depressions. Also included are areas of very deep Muskellunge soils where bedrock is deeper than 60 inches; some areas of well drained, loamy, shallow Insula and Summerville soils on gentle to abrupt ridges; and areas of soils less than 20 inches deep to bedrock. Also included are areas of rock outcrops and some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Matoon soil—

Permeability: Moderately slow in the surface layer and in the upper part of the subsoil and slow in the lower part of the subsoil
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Slightly acid or neutral in the surface layer and neutral or slightly alkaline in the subsoil
Erosion hazard: Slight
Depth to water table: Perched above bedrock, ranging from 0.5 to 1.5 feet below the surface from November to May
Depth to bedrock: 20 to 40 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are used for cultivated crops. A few areas are wooded. Many cleared areas are reverting to woodland.

This soil is poorly suited to cultivated crops because of wetness. The seasonal high water table delays plowing and planting in spring. Adequate drainage is needed to grow crops on this soil, but subsurface drainage systems are not always practical because of moderate depth to bedrock. Interceptor drains that divert runoff from higher topographic areas help to lower the water table and to increase productivity. In some areas adequate drainage outlets are difficult to construct because of bedrock and the flatness of the terrain.

This soil is fairly suited to hayland and pasture. The seasonal high water table restricts the root growth of some plants, especially legumes. The soil is suited to shallow-rooted legumes and grasses. Grazing on this soil when wet causes surface compaction. Restricting stock from pasture when the soil is wet helps to prevent surface compaction.

Potential productivity for red maple on this soil is moderate. When this soil is wet and soft, it severely limits equipment use. Restricting heavy equipment use to dry periods in summer or when the soil is frozen in winter helps to prevent rutting and related problems. The windthrow hazard is moderate because of moderate depth to bedrock and because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

This soil is not suitable as a site for dwellings with basements because of depth to bedrock and the seasonal high water table. Included areas of deeper Muskellunge soils are better suited to this use.

Low strength, the seasonal high water table, and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Providing suitable subgrade or base material and using special construction methods for adequate support help to increase the strength and stability of this soil. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

This soil is unsuitable for septic tank absorption fields because of depth to bedrock, the seasonal high water table, and slow permeability. Included areas of deeper Muskellunge soils are more suitable for this use.

The capability subclass is 3w. The forestland ordination symbol is 3W.

MfB—Matoon silty clay loam, 2 to 6 percent slopes

This is a moderately deep, gently sloping, somewhat poorly drained soil mostly in broad basins or on plains where clayey marine sediments are moderately deep over bedrock. Areas of this soil are irregular in shape. Most areas are 6 to 50 acres, but the range is 6 to 200 acres. Slopes range from 2 to 6 percent.

Typical sequence, depth, and composition of the layers of the Matoon soil—

Surface layer:
0 to 8 inches, very dark grayish brown silty clay loam

Subsoil:
8 to 12 inches, dark gray and gray silty clay loam
12 to 16 inches, gray silty clay
16 to 27 inches, dark grayish brown clay

Bedrock:
27 inches, sandstone bedrock

Included with this soil in mapping are small areas of poorly drained and very poorly drained Guff soils in low-lying depressions. Also included are some moderately steep areas; nearby small areas of very deep, moderately well drained Heuvelton soils; and, where bedrock is deeper than 60 inches, small areas of very deep Muskellunge soils. Also included are well drained, loamy, shallow Insula and Summerville soils on gentle to abrupt ridges; areas of rock outcrops; and some places, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Matoon soil—

Permeability: Moderately slow in the surface layer and the upper part of the subsoil and slow in the lower part of the subsoil
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Slightly acid or neutral in the surface layer and neutral or slightly alkaline in the subsoil
Erosion hazard: Slight
Depth to water table: Perched above bedrock, ranging from 0.5 to 1.5 feet below the surface in November to May
Depth to bedrock: 20 to 40 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are used for cultivated crops. A few areas are wooded. Many cleared areas are reverting to woodland.

This soil is poorly suited to cultivated crops because of wetness. The seasonal high water table delays plowing and planting in spring. Adequate drainage is needed to grow crops on this soil but subsurface drainage systems are not always practical because of moderate depth to bedrock. Interceptor drains that divert runoff from higher topographic areas help to lower the water table and to increase productivity. Erosion is a hazard on longer, steeper slopes. Conservation practices that help to control erosion include conservation tillage, contour plowing, and crop rotations that stress sod crops.

This soil is fairly suited to hayland and pasture. The seasonal high water table restricts root growth of some plants, especially legumes. The soil is suited to shallow-rooted legumes and grasses. Grazing on this soil when wet causes surface compaction. Restricting stock when the soil is wet helps to prevent surface compaction.

Potential productivity for red maple on this soil is moderate. When this soil is wet and soft, it severely limits equipment operation. Restricting heavy equipment use to dry periods in summer or when the soil is frozen in winter helps to prevent rutting and related soil problems. The windthrow hazard is moderate because of moderate depth to bedrock. The seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

This soil is not suitable for dwellings with basements because of depth to bedrock and the seasonal high water table. Included areas of very deep Heuvelton soils are better suited to this use.

Low strength, the seasonal high water table, and potential for frost action are limitations to use of this soil as a site for local roads and streets. Providing suitable subgrade or base material and using special construction methods for adequate support help to increase the strength and stability of this soil. Constructing on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

This soil is unsuitable to use as a site for septic tank absorption fields because of depth to bedrock, the seasonal high water table, and slow permeability. Included areas of deeper Heuvelton soils are more suitable to this use.

The capability subclass is 3w. The forestland ordination symbol is 3W.

Mh—Mino fine sandy loam

This is a very deep, nearly level, somewhat poorly drained soil on moderately low topography on level or very gently undulating lake or marine plain landscapes. Areas of this soil are irregular in shape. Most areas of this soil are 6 to 50 acres, but the range is 6 to more than 100 acres. Slopes range from 0 to 3 percent.

Typical sequence, depth, and composition of the layers of the Mino soil—

Surface layer:
0 to 10 inches, dark gray fine sandy loam

Subsurface layer:
10 to 12 inches, gray fine sandy loam

Subsoil:
12 to 16 inches, dark grayish brown fine sandy loam
16 to 24 inches, brown fine sandy loam
24 to 32 inches, grayish brown very fine sandy loam

Substratum:
32 to 72 inches, yellowish brown fine sandy loam

Included with this soil in mapping are small areas of moderately well drained Eelweir soils on convex knolls and in other, higher areas of the map unit. Also included are areas of very poorly drained Munuscong soils in depressions and along streams, areas of loamy over clayey Swanton soils where a clayey substratum is 20 to 40 inches deep, and areas of sandy Croghan and Deford soils in small inclusions of sand deposits. Also included are small areas of finer textured Roundabout soils where very fine sand and silt predominate and, on small hills or knolls, small areas of Hogansburg, Kalurah, and Malone soils, which have more rock fragments than those of the Mino soils. Included areas range to 6 acres and make up about 20 percent of the unit.

Important properties of the Mino soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to slightly acid in the surface layer, moderately acid to neutral in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From a depth of 0.5 to 1.5 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are wooded. Some areas are used as hayland or pasture. Some cleared areas are idle and reverting to brush. A few areas are used for cultivated crops.

This soil is poorly suited to cultivated crops because of wetness. The seasonal high water table delays planting and interferes with harvesting operations. A system of subsurface and surface drainage helps to reduce wetness. Installing adequate drainage and applying lime and fertilizer according to soil tests help to produce very good yields for most crops grown in the area.

This soil is fairly well suited to hay and pasture. The seasonal high water table restricts the rooting depth of some plants, especially legumes. Draining the soil with open ditches or tile will lower the water table and improve productivity. Excluding cattle from open ditches will prevent sloughing. Grazing these soils when wet causes surface compaction and loss of soil tilth. Restricting animals from these soils when wet will prevent these problems. When adequate lime and fertilizer are added to this soil, it is well suited to shallow-rooted legumes and most other hay and pasture plants.

Potential productivity for white pine on this soil is moderate or high. In some years wetness hinders heavy equipment use in spring and during other wet periods. Logging during drier periods or in winter when the ground is frozen helps to overcome this limitation. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable species will minimize the seedling mortality rate. The windthrow hazard is moderate because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Placing drains by footings helps to lower the water table. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to overcome this limitation. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table is the main limitation to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field and installing diversion ditches to intercept runoff from higher areas help to lower the water table.

The capability subclass is 3w. The forestland ordination symbol is 3W.

Mn—Munuscong mucky fine sandy loam

This map unit consists of very deep, nearly level, very poorly drained soils formed in a loamy mantle over clayey sediments in low positions on parts of lake or marine plains and on uplands. Most areas are irregular in shape. Areas are 6 to 20 acres, but the range is 6 to more than 50 acres. Slopes are smooth and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers of the Manuscong soil—

Surface layer:
0 to 8 inches, black mucky fine sandy loam

Subsoil:
8 to 22 inches, light gray fine sandy loam
22 to 26 inches, grayish brown fine sandy loam

Substratum:
26 to 38 inches, grayish brown silty clay
38 to 48 inches, gray silty clay loam
48 to 98 inches, dark gray silty clay

Included with this unit in mapping are small areas of somewhat poorly drained and poorly drained Swanton soils on low hummocks. Also included are areas of moderately well drained Elmwood soils on convex knolls and in other high areas of the map unit; small areas of somewhat poorly drained Mino soils that do not have a clayey substratum and that are on slight benches; and small areas of well drained, loamy Pyrities soils on knolls and small hills. Also included are some small areas of somewhat poorly drained Naumburg and Searsport soils, both of which have a higher sand content than the Manuscong soil. Also included are small areas of Adjidaumo soils that have higher clay content in the surface layer and in the subsoil than the Manuscong soil. Included soils range to 6 acres and make up about 20 percent of this unit.

Important properties of the Manuscong soil—

Permeability: Moderately rapid in the surface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid to slightly alkaline in the surface layer and the subsoil and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From ponded 1 foot above the surface to a depth of 1 foot in November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low in the surface layer and the subsoil and moderate in the substratum
Flooding hazard: None

Most areas of this soil are wooded. Some cleared areas are idle and are reverting to brush. A few areas are pasture.

This soil is very poorly suited to cultivated crops because of extreme wetness. The seasonal high water table delays planting in spring and interferes with harvesting in fall.

This soil is poorly suited to hay and pasture. The main limitation is the seasonal high water table, which restricts rooting depth of most grasses. Restricting livestock from this soil when wet prevents compaction of the subsoil, loss of tilth in the surface layer, and damage to seedlings. Applying lime and fertilizer based on soil tests, restricting grazing during wet periods, and yearly mowing help to increase quality and quantity of feed and forage.

Potential productivity for quaking aspen on this soil is low. Wetness depresses growth rates, limits the number of adaptable species, and hinders heavy equipment use in spring and during other wet periods. Logging during drier periods or in winter when the ground is frozen helps to overcome this limitation. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable species help to reduce the seedling mortality rate. Windthrow is a moderate hazard because the seasonal high water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. Plant competition is a problem on tree plantations. Mechanical or chemical site preparation helps to reduce plant competition.

Ponding and the seasonal high water table are severe limitations to use of this soil as a site for dwellings with basements. Dwellings could be built on included, better drained soils, such as Pyrities soils, that are better suited to this use.

The seasonal high water table, potential for frost action, and low strength are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing adequate culverts and roadside drainage ditches help to reduce wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Providing suitable base and subgrade material help to increase the strength and stability of this soil.

This soil is poorly suited to septic tank absorption fields because of the seasonal high water table and very slow or slow permeability. Where practicable, the septic system could be placed on included soils, such as Pyrities soils, that are more favorable to this use.

The capability subclass is 5w. The forestland ordination symbol is 3W.

MsA—Muskellunge silty clay loam, 0 to 2 percent slopes

This is a very deep, nearly level, somewhat poorly drained soil on broad flats and valley floors. Areas of this soil are irregular in shape and range from 6 to 100 acres.

Typical sequence, depth, and composition of the layers of the Muskellunge soil—

Surface:
0 to 12 inches, very dark grayish brown silty clay loam

Subsoil:
12 to 17 inches, dark grayish brown clay
17 to 25 inches, brown clay
25 to 37 inches, dark yellowish brown silty clay

Substratum:
37 to 72 inches, brown silty clay

Included with this soil in mapping are small areas of poorly drained and very poorly drained Adjidaumo soils; well drained, shallow Insula and Summerville soils; moderately deep Matoon soils; moderately well drained Heuvelton soils; and somewhat poorly drained and poorly drained Swanton soils. Adjidaumo soils are in depressions or along drainageways. Insula and Summerville soils are on knolls where bedrock is close to the surface. Heuvelton soils are on small hills and on narrow terraces next to the sides of valleys. Matoon soils are in places where flat-bedded bedrock is 20 to 40 inches below the surface. Most areas of loamy over clayey Swanton soils are in very shallow depressions. Also included are areas of sandy Deford soils adjacent to outwash plains and some places, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Muskellunge soil—

Permeability: Moderately slow in the surface layer and slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From 0.5 to 1.5 feet below the surface from January to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are hayland or pasture. Many areas are used for cultivated crops. A few areas are woodland.

This soil is poorly suited to cultivated crops because of wetness. Seasonal wetness delays planting in spring and hinders harvesting in fall. A combination of surface and subsurface drainage works best on this soil, but in some areas suitable outlets are difficult to find. Tilling the soil when wet causes crusting and clodding of the surface layer. Minimizing tillage, using cover crops, incorporating crop residues into the soil, plowing at the proper moisture content, and using crop rotations help to sustain or improve organic matter content and to maintain good soil tilth. If the soil is properly drained and lime and fertilizer are added according to soil tests, this soil can be productive for many crops grown in the area.

This soil is fairly suited to pasture and hay. Drainage helps to improve yields. In undrained areas, water-tolerant forage plants are suitable. Grazing when the soil is wet causes surface compaction, destroys soil tilth, and damages pasture seedlings. Adding lime and fertilizer according to soil tests and yearly mowing help to increase the productivity of this soil.

Potential productivity for sugar maple on this soil is moderate or high. Wetness is a moderate limitation to equipment use; it impedes machine planting and harvesting operations. Logging is feasible in summer when the soil is dry or in winter when the ground is frozen.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to lower the water table. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table, potential for frost action, and low strength are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to reduce wetness. Providing coarser grained, suitable subgrade or base material to frost depth helps to prevent frost action and low strength from damaging pavement.

The seasonal high water table and slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. Special designs, such as enlarging the absorption field or placing a wide, deep trench below the distribution lines, help to compensate for the slow permeability.

The capability subclass is 3w. The forestland ordination symbol is 3W.

MsB—Muskellunge silty clay loam, 2 to 6 percent slopes

This is a very deep, gently sloping, somewhat poorly drained soil on broad flats and valley floors. Areas of this soil are irregular in shape and range from 6 to 100 acres.

Typical sequence, depth, and composition of the layers of the Muskellunge soil—

Surface:
0 to 12 inches, very dark grayish brown silty clay loam

Subsoil:
12 to 17 inches, dark grayish brown clay
17 to 25 inches, brown clay
25 to 37 inches, dark yellowish brown silty clay

Substratum:
37 to 72 inches, brown silty clay

Included with this soil in mapping are small areas of poorly drained and very poorly drained Adjidaumo soils; shallow, well drained Insula and Summerville soils; moderately deep Matoon soils; moderately well drained Heuvelton soils; and somewhat poorly drained and poorly drained Swanton soils. Adjidaumo soils are in depressions or along drainageways. Insula and Summerville soils are on knolls where bedrock is close to the soil surface. Heuvelton soils are on small hills and on narrow terraces next to valleys sides. Matoon soils are in places where flat-bedded bedrock is 20 to 40 inches below the surface. Loamy over clayey Swanton soils are commonly in very shallow depressions. Also included are some places, notably along the border of Jefferson County, where the soil is warmer than normal, usually by less than 2 degrees. Included soils make up about 25 percent of this map unit.

Important properties of the Muskellunge soil—

Permeability: Moderately slow in the surface layer and slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: From 0.5 to 1.5 feet below the surface from January to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are hayland or pasture. Many areas are in cultivated crops, and a few areas are woodland.

This soil is poorly suited to cultivated crops because seasonal wetness delays planting in spring and hinders harvesting in fall. A combination of surface and subsurface drainage works well in draining this soil. Tilling the soil when wet causes crusting and clodding of the surface layer. Erosion is a hazard on longer, steeper slopes. Conservation tillage, contour plowing, stripcropping, and crop rotations that emphasize sod crops help to control erosion and to maintain soil tilth. If the soil is properly drained and lime and fertilizer are added according to soil tests, this soil can be productive for many crops grown in the area.

This soil is fairly suited to pasture and hay. Drainage helps to improve yields. In undrained areas forage plants tolerant of seasonal wetness are suited. Grazing when the soil is wet causes surface compaction, destroys tilth, and damages pasture seedlings. Overgrazing can deplete vegetation and can increase erosion. Proper stocking rates help to sustain pasture seedlings for optimum productivity and to control erosion. Adding lime and fertilizer according to soil tests and yearly mowing help to increase productivity on this soil.

Potential productivity for sugar maple on this soil is moderate or high. Wetness causes a moderate equipment limitation; it interferes with machine planting of seedlings and harvesting operations. Logging is feasible in summer when the soil is dry or in winter when the ground is frozen.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings help to lower the water. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table, potential for frost action, and low strength are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to reduce wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action and low strength from damaging pavement.

The seasonal high water table and slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 3w. The forestland ordination symbol is 3W.

MuB—Muskellunge silty clay loam, 0 to 6 percent slopes, rocky

This is a very deep, gently sloping, somewhat poorly drained soil on tops or upper side slopes of broad ridges or in broad, flat areas. Rock outcrops, in many places adjacent to included soils, cover from 0.1 to 2 percent of the total surface area of this unit. Slopes range from 0 to 6 percent. Areas are irregularly shaped and range from 6 to 60 acres.

Typical sequence depth, and composition of the layers of the Muskellunge soil—

Surface:
0 to 12 inches, very dark grayish brown silty clay loam

Subsoil:
12 to 17 inches, dark grayish brown clay
17 to 25 inches, brown clay
25 to 37 inches, dark yellowish brown silty clay

Substratum:
37 to 72 inches, brown silty clay

Included with this soil in mapping are small areas of poorly drained and very poorly drained Adjidaumo soils. Also included, along drainageways or in slight depressions, are somewhat poorly drained and poorly drained Swanton soils, which are coarser textured in the subsoil than the Muskellunge soil. Also included, typically surrounding areas of rock outcrops, are areas of shallow Summerville and Insula soils and somewhat poorly drained, moderately deep Matoon soils; some areas of Heuvelton soils on small knolls and on small terraces along the sides of valleys or skirting areas of rock outcrops; and some places, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres. Summerville, Insula, and Matoon soils make up about 15 percent of this unit and other inclusions, about 20 percent.

Important properties of the Muskellunge soil—

Permeability: Moderately slow in the surface layer and slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: From 0.5 to 1.5 feet below the surface from January to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Most areas of this soil are hayland or pasture. A few areas are cultivated or wooded.

This soil is poorly suited to cultivated crops because of rock outcrops, the seasonal high water table, and the hazard of erosion. Scattered rock outcrops distort traffic patterns in fields; consequently, cultivation with modern equipment is difficult. The seasonal high water table can delay planting of crops and interfere with harvesting. Finding or constructing adequate outlets is needed to drain this soil. Rock outcrops and included areas of shallow or moderately deep soils can interfere with drainage installations; it is important to examine an adequate number of test pits before construction. Erosion is a hazard on longer, steeper slopes. Conservation practices, such as conservation tillage, stripcropping, crop rotations that include sod crops, cover crops, and contour plowing help to control erosion. Plowing and cultivating when the soil is moist but not wet help to maintain good tilth.

This soil is fairly suited to pasture. Yields are better when the soil is at least partially drained. In undrained areas forage plants that can withstand seasonal wetness are suited. Scattered rock outcrops disrupt traffic patterns; many fields resemble networks of small cul-de-sacs. Included moderately deep or shallow soils can impede construction of drainage systems. Grazing when the soil is wet causes surface compaction and trampling of pasture seedlings. Overgrazing can deplete vegetation and can increase erosion on steeper slopes. Proper stocking rates help to sustain pasture seedlings for optimum productivity and to control erosion. Adding lime and fertilizer according to soil tests and yearly mowing help to increase productivity on these soils.

Potential productivity for sugar maple on this soil is moderate or high. Wetness causes a moderate equipment limitation; it interferes with machine planting of seedlings and with harvesting operations. Logging is feasible in summer when the soil is dry or in winter when the ground is frozen.

The seasonal high water table and rock outcrops are the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to lower the water table. Adequately sealing foundations helps to prevent wet basements. Rock outcrops and included areas of shallow and moderately deep soils are not feasible as sites for dwellings with basements; digging test pits before excavating basements helps to avoid these soils.

The seasonal high water table, potential for frost action, low strength, and rock outcrops are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to reduce wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action and low strength from damaging pavement. On scattered rock outcrops and included moderately deep and shallow soils, blasting is needed. An alternative is to change the alignment or grade of roads to avoid these limitations.

The seasonal high water table, slow permeability, and rock outcrops are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. Special designs, such as enlarging the absorption field or placing a wide, deep trench below the distribution lines, help to increase performance. Rock outcrops or the included moderately deep and shallow soils should be avoided as sites for septic systems.

The capability subclass is 5s. The forestland ordination symbol is 3W.

MwB—Muskellunge-Adjidaumo complex, undulating

This map unit consists of nearly level and gently sloping soils on valley floors in small basins and on broad flats. The gently sloping, very deep, somewhat poorly drained Muskellunge soil is on slight knolls. The nearly level, very deep, poorly drained and very poorly drained Adjidaumo soils are in small depressions. Slopes are short and complex and range from 0 to 2 percent. Areas of the unit range from 6 to more than 100 acres. The unit is about 45 percent Muskellunge soil, 40 percent Adjidaumo soil, and 15 percent other soils.

Typical sequence, depth, and composition of the layers of the Muskellunge soil—

Surface:
0 to 12 inches, very dark grayish brown silty clay loam

Subsoil:
12 to 17 inches, dark grayish brown clay
17 to 25 inches, brown clay
25 to 37 inches, dark yellowish brown silty clay

Substratum:
37 to 72 inches, brown silty clay

Typical sequence, depth, and composition of the layers of the Adjidaumo soil—

Surface layer:
0 to 8 inches, very dark gray silty clay

Subsoil:
8 to 18 inches, gray silty clay
18 to 27 inches, gray clay

Substratum:
27 to 72 inches, gray clay

Included with this soil in mapping are small areas of rock outcrops and shallow Summerville and Insula soils on knolls. Also included are areas of coarser textured Hailesboro and Swanton soils and moderately well drained Heuvelton soils. Hailesboro soils are on small hills. Swanton soils are in slightly higher topographic positions than the Adjidaumo soil. Heuvelton soils are in convex areas commonly near edges of the map unit. Included areas range to 6 acres and make up about 15 percent of this unit.

Important properties of the Muskellunge soil—

Permeability: Moderately slow in the surface layer and slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From 0.5 to 1.5 feet below the surface from January to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

Important properties of the Adjidaumo soil—

Permeability: Moderately slow in the surface layer, slow in the subsoil, and slow or very slow in the subsoil
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid or neutral in the surface layer, neutral or slightly alkaline in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 0.5 feet from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Moderate
Flooding hazard: None

In most areas, this soil is in pasture. In some areas it is used as woodland.

Unless drained, these soils are poorly suited to cultivated crops. Potholes on this unit impede surface drainage, and natural outlets for drainage are difficult to find. Successful drainage requires a combination of open ditches, subsurface tile lines, and land leveling.

These soils are poorly suited to hay and pasture. Wetness and uneven topography are the main problems. Wetness restricts the choice of plant species. Uneven topography impedes harvesting and limits the possibility of surface drainage. Grazing when the soil is too wet causes surface compaction. Proper stocking rates and deferred grazing when the soil is wet help to increase production of feed and forage.

Potential productivity for trees on these soils is low or moderate. The seasonal high water table restricts use of equipment to summer, when the soil is dry, or to winter, when the soil is frozen. The water table limits root development and windthrow is a moderate hazard. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. On the Adjidaumo soil the rate of seedling mortality is severe because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to reduce the seedling mortality rate.

These soils are poorly suited to dwellings with basements. The seasonal high water table is the main limitation. The Adjidaumo soil is in low-lying areas, and installing footing drains and sealing basement walls may not be adequate in keeping basements dry on this soil. Dwellings could be built on included or nearby, drier soils that are better suited to this use.

The seasonal high water table, low strength, and potential for frost action are limitations to use of these soils as a site for local roads and streets. Providing coarse subgrade to below frost depth helps to prevent frost action and low strength from damaging pavement. Digging roadside ditches, installing culverts where needed, and constructing on raised fill material help to lower the water table.

These soils are not suitable to use as a site for septic tank absorption fields. The seasonal high water table and slow permeability are limitations that are difficult to overcome without resorting to expensive, alternative waste disposal systems that may not meet local health regulations. An alternative is place septic systems on nearby or included, drier soils.

The capability subclass is 3w for the Muskellunge soil and 4w for the Adjidaumo soil. The forestland ordination symbol is 3W for the Muskellunge soil and 2W for the Adjidaumo soil.

Na—Naumburg loamy fine sand

This is a very deep, nearly level, poorly drained soil on low sand plains. Most areas are broad and irregular in shape. Areas range from 6 to more than 200 acres. Typically, slopes are smooth and range from 0 to 2 percent.

Typical sequence, depth, and composition of the layers of the Naumburg soil—

Surface layer:
0 to 5 inches, black, moderately decomposed organic material

Subsurface layer:
5 to 17 inches, pinkish gray loamy fine sand
17 to 19 inches, reddish gray fine sand

Subsoil:
19 to 21 inches, dark reddish brown loamy fine sand
21 to 31 inches, brown sand
31 to 41 inches, yellowish brown sand

Substratum:
41 to 72 inches, light brownish gray sand

Included with these soils in depressions and swales are small areas of very poorly drained Dorval and Searsport soils. Also included are somewhat excessively drained and excessively drained Adams soils and moderately well drained Croghan soils on small hills and ridges; small areas of loamy Malone soils and loamy, moderately well drained Kalurah soils on hummocks and slight knolls; small areas of Stockholm soils, which have a clayey substratum; and small areas of Coveytown soils, which have a loamy substratum. Also included, notably along the border of Jefferson County, are areas where the soils are warmer than normal, usually by less than 2 degrees. Included soils range to 6 acres and make up 30 percent of this unit.

Important properties of the Naumburg soil—

Permeability: Moderately rapid in the surface and subsurface layers and rapid in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and the subsoil and very strongly acid to slightly acid in the substratum
Erosion hazard: Low
Depth to water table: From 0.5 to 1.5 feet from December to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as woodland. Some areas are used as pasture. A few areas are cultivated.

This soil is poorly suited to cultivated crops. Wetness and low natural fertility are the main limitations. Installing subsurface drainage and, in most areas, open ditches help to reduce wetness. In places natural drainage outlets are not available. Adding lime and fertilizer according to soil tests in several small doses helps to decrease leaching of nutrients on this rapidly permeable soil and to increase fertility.

This soil is poorly suited to pasture and hayland. Installing artificial drainage and top dressing with manure and fertilizer increase productivity and help to support shallow-rooted legumes. Grazing in spring when the surface is wet causes surface compaction and loss of pasture seeding. Fencing drainage ditches to exclude animals helps to prevent the ditches from sloughing and filling in.

Potential productivity for sugar maple on this soil is low. The seasonal high water table limits use of heavy equipment in spring and during other wet periods. Logging when the soil is dry or in winter when it is frozen reduces the problems from heavy equipment use. The seedling mortality rate is severe because of wetness. Timely planting when the soil is moist, but not wet, and selecting adaptable varieties help to reduce the seedling mortality rate. The water table limits root development and windthrow is a moderate hazard. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is a severe limitation to use of this soil as a site for dwellings. Drainage systems that carry subsurface water away from cellars, footers, and slab foundations help to lower the water table. Adequately sealing foundations helps to prevent wet basements. An alternative is to build dwellings on any available, adjacent, drier soils.

The seasonal high water table is a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to reduce wetness.

This soil is poorly suited to septic tank absorption fields. The combination of the seasonal high water table and rapid permeability causes a hazard of ground-water contamination or deposition of effluent on the surface. In most areas a septic system with a special design is needed to use this soil as a filter field. An alternative is to place the septic system on nearby or included soils, such as Kalurah soils, that are better suited to septic tank absorption fields.

The capability subclass is 4w. The forestland ordination symbol is 2W.

NhA—Nehasne sandy loam, 0 to 3 percent slopes

This is a moderately deep, nearly level, well drained soil on bedrock-controlled glacial till plains. These soils generally occupy the highest areas of the local landscape, such as tops and shoulders of slight hills, and do not receive runoff from adjacent areas. Most areas are long and narrow and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Nehasne soil—

Surface layer: 0 to 7 inches, very dark grayish brown sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown gravelly fine sandy loam
18 to 23 inches, brown gravelly fine sandy loam
23 to 25 inches, dark brown gravelly fine sandy loam

Bedrock:
25 inches, marble bedrock, tilted and folded

Included with this soil in mapping are small areas of very deep Grenville soils, shallow Summerville and Hannawa soils, and somewhat poorly drained Matoon and Ogdensburg soils. Grenville soils are on tops or side slopes of small hills. Hannawa soils, clayey Matoon soils, and Ogdensburg soils are on small benches or in seep areas. Summerville soils are on shoulders or tops of more pronounced ridges and hills. Also included are small areas of rock outcrops. Matoon, Ogdensburg, and Summerville soils and areas of rock outcrops make up about 15 percent of this unit, and other included areas make up about 10 percent.

Important properties of the Nehasne soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral or slightly alkaline in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet
Depth to bedrock: From 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are cultivated, and a few areas are wooded.

This soil is well suited to cultivated crops. Moderate depth to bedrock limits water available to plants in dry summers. Erosion is a hazard on longer, steeper slopes. Conservation practices help to conserve soil moisture and to maintain or restore tilth; they include conservation tillage, crop rotations that emphasize sod crops, stripcropping, contour plowing, and use of cover crops. Adding of lime and fertilizer according to soil tests helps to improve crop yields. In some areas periodic stone removal is needed to prevent excessive wear on tillage equipment.

This soil is well suited to pasture. Moderate depth to bedrock limits plant species to those with shorter roots. It also limits available water in the soil and causes droughtiness. Overgrazing, especially when moisture available to plants is limited, can damage pasture seedlings. Maintaining proper stocking rates, rotating pastures, deferring grazing when the soil is saturated, applying lime and fertilizer, and yearly mowing help to sustain pasture seedlings and to improve quality and quantity of feed and forage.

Potential productivity for sugar maple on this soil is moderately high. There are no limitations to woodland use and management.

Moderate depth to bedrock is the main limitation to use of this soil as a site for dwellings with basements. Dwellings could be built on nearby or included deeper soils, such as Grenville soils on gentle slopes, that are better suited to this use.

This soil is poorly suited to use as a site for local roads and streets. Moderate depth to bedrock and potential for frost action are the main limitations. Depth to bedrock limits economical excavation for grade control and subgrade preparation. Also, maintaining grade without changing alignment is difficult in some places because of depth to bedrock. Providing coarser subgrade helps to prevent frost action from heaving and buckling pavement.

This soil is poorly suited to use as a site for a septic tank absorption fields because of moderate depth to bedrock. An unconventional sewage treatment system, where code permits, could be used. An alternative is to use nearby or included, deeper soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 2s. The forestland ordination symbol is 3A.

NhB—Nehasne sandy loam, 3 to 8 percent slopes

This is a moderately deep, gently sloping, well drained soil on sides of gentle ridges and hills. Most areas are long and narrow and range from 6 to 40 acres.

Typical sequence, depth, and composition of the layers of the Nehasne soil—

Surface layer:
0 to 7 inches, very dark grayish brown sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown gravelly fine sandy loam
18 to 23 inches, brown gravelly fine sandy loam
23 to 25 inches, dark brown gravelly fine sandy loam

Bedrock:
25 inches, marble bedrock, tilted and folded

Included with this soil in mapping are small areas of very deep Grenville soils, shallow Summerville and Hannawa soils, and somewhat poorly drained Matoon and Ogdensburg soils. Grenville soils are on tops of ridges or on side slopes. Hannawa soils, Matoon soils, and Ogdensburg soils are on small benches or in seep areas. Summerville soils are on shoulders or tops of ridges and hills. Also included are small areas of rock outcrops. Matoon, Ogdensburg, and Summerville soils, and areas of rock outcrop make up about 15 percent of this unit, and other included areas make up about 10 percent.

Important properties of the Nehasne soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral or slightly alkaline in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are cultivated. A few areas are wooded.

This soil is suited to cultivated crops. Moderate depth to bedrock limits water available to plants in dry summers. Erosion is a hazard on longer, steeper slopes. Conservation practices, such as conservation tillage, crop rotations that emphasize sod crops, stripcropping, contour plowing, and use of cover crops, help to control erosion, to reduce nutrient loss, to conserve soil moisture, and to maintain or restore soil tilth. Adding lime and fertilizer according to soil tests helps to improve crop yields. In some areas periodic stone removal is needed to prevent excessive wear on tillage equipment.

This soil is well suited to pasture. Moderate depth to bedrock limits plant species to those with shorter roots. It also limits available water in the soil and causes droughtiness. Overgrazing, especially in dry summers, can damage pasture seedlings and can cause sheet erosion. Erosion is a hazard, especially in summer, when lack of water available to plants diminishes vigor. Maintaining proper stocking rates, rotating pastures, deferring grazing when the soil is saturated, applying lime and fertilizer, and yearly mowing help to sustain pasture seedlings and to improve quality and quantity of feed and forage.

Potential productivity for sugar maple on this soil is moderately high. There are no limitations to woodland use and management.

Moderate depth to bedrock is the main limitation to use of this soil as a site for dwellings with basements. Dwellings could be built on included or nearby deeper soils, such as Grenville soils, that are better suited to this use.

This soil is poorly suited to local roads and streets. Moderate depth to bedrock and potential for frost action are the main limitations. Depth to bedrock limits economical excavation for grade control and subgrade preparation. In places maintaining grade without changing alignment is difficult because of depth to bedrock. Providing coarser subgrade helps to prevent frost action from heaving and buckling pavement.

This soil is poorly suited to use as a site for septic tank absorption fields because of moderate depth to bedrock. An unconventional sewage treatment system, such as a mound system where code permits, could be used. An alternative is to use nearby or included, deeper soils, such as Grenville soils, that are better suited to septic tank absorption fields.

The capability subclass is 2s. The forestland ordination symbol is 3A.

NhC—Nehasne sandy loam, 8 to 15 percent slopes

This is a moderately deep, strongly sloping, well drained soil on sides of ridges and hills. Most areas are long and narrow and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Nehasne soil—

Surface layer:
0 to 7 inches, very dark grayish brown sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown gravelly fine sandy loam
18 to 23 inches, brown gravelly fine sandy loam
23 to 25 inches, dark brown gravelly fine sandy loam

Bedrock:
25 inches, marble bedrock, tilted and folded

Included with this soil in mapping are small areas of very deep Grenville soils, shallow Summerville and Hannawa soils, and somewhat poorly drained Matoon and Ogdensburg soils. Grenville soils are on the tops of ridges or on side slopes. Hannawa soils, clayey Matoon soils, and Ogdensburg soils are on small benches or in seep areas. Summerville soils are on shoulders or tops of ridges and hills. Also included are small areas of rock outcrops. Matoon, Ogdensburg, and Summerville soils and areas of rock outcrops make up about 15 percent of this unit, and other included areas make up about 10 percent.

Important properties of the Nehasne soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral or slightly alkaline in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. A few areas are cultivated or wooded.

This soil is poorly suited to cultivated crops because of the erosion hazard, moderate depth to bedrock, and droughtiness. Conservation practices, such as conservation tillage, crop rotations that emphasize sod crops, stripcropping, contour plowing, and use of cover crops, help to control erosion, to reduce nutrient loss, to conserve soil moisture, and to maintain or restore soil tilth. Natural fertility is medium. Adding lime and fertilizer according to soil tests helps to improve crop yields. In some areas periodic stone removal is needed to prevent excessive wear on tillage equipment.

This soil is fairly well suited to pasture. Moderate depth to bedrock limits plant species to those with shorter roots, limits water available to plants, and causes droughtiness. Overgrazing damages pasture seedlings and increases the hazard of erosion, especially in summer, when lack of available water diminishes plant vigor. Maintaining proper stocking rates, rotating pastures, deferring grazing when the soil is saturated, applying lime and fertilizer, and yearly mowing help to sustain pasture seedlings and to improve quality and quantity of feed and forage.

Potential productivity for sugar maple on this soil is moderately high. There are no limitations to woodland use and management.

Moderate depth to bedrock is the main limitation to use of this soil as a site for dwellings with basements. Dwellings could be built on nearby or included, deeper soils that are better suited to this use.

This soil is poorly suited to use as a site for local roads and streets. Moderate depth to bedrock, excessive slope, and potential for frost action are the main limitations. Depth to bedrock limits economical excavation for grade control and subgrade preparation. Maintaining grade without changing alignment is difficult because of slope and moderate depth to bedrock. Providing coarser subgrade helps to prevent frost action from heaving and buckling pavement.

This soil is poorly suited to septic tank absorption fields because of moderate depth to bedrock. An unconventional sewage treatment system, such as a mound system where code permits, could be used. An alternative is to place the septic system on nearby or included, deeper soils that are better suited to septic tank absorption fields.

The capability subclass is 3e. The forestland ordination symbol is 3A.

NoA—Nicholville very fine sandy loam, 0 to 2 percent slopes

This is a very deep, nearly level, moderately well drained soil on dissected plains. Areas are irregular in shape and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Nicholville soil—

Surface layer:
0 to 8 inches, very dark grayish brown very fine sandy loam

Subsoil:
8 to 14 inches, brown very fine sandy loam
14 to 18 inches, dark yellowish brown very fine sandy loam
18 to 23 inches, brown very fine sandy loam

Substratum:
23 to 39 inches, brown very fine sandy loam
39 to 55 inches, dark grayish brown loamy very fine sand
55 to 72 inches, dark brown very fine sandy loam

Included with this soil in mapping are small areas of sandy Croghan soils, coarser textured Eelweir soils, more clayey Hailesboro soils, poorly drained and somewhat poorly drained Roundabout soils, and well drained Salmon soils. Croghan and Eelweir soils are on tops of knolls. Hailesboro soils are on footslopes of knolls and sides of valleys. Roundabout soils are along streams or in depressions. Salmon soils are on knolls or on upper side slopes. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Nicholville soil—

Permeability: Moderate throughout

Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: Perched at a depth of 1.5 to 2 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. Some areas are used as pasture or woodland.

This soil is suited to cultivated crops. In some years the seasonal high water table delays planting in spring. Drainage of included wet spots allows early tillage and late harvest operations. Low soil reaction limits nutrients available to plants; adding lime helps to improve soil reaction. Adding fertilizer and lime according to soil tests and using crop rotations to limit consecutive years of row crops are needed for high productivity and good soil tilth.

This soil is well suited to hay and pasture. The main limitations are wetness and low soil reaction. The seasonal high water table restricts root growth of some legumes. Grazing when the soil is too wet causes surface compaction. Drainage increases yields and longevity of deep-rooted legumes. Adding lime according to soil tests helps to improve soil reaction. Overgrazing reduces quantity and quality of forage. Deferred grazing, rotational grazing, applying lime and fertilizer, harvesting at the proper stage of plant growth, yearly mowing, and controlling weed and brush help to increase quantity and quality of feed and forage.

Potential productivity for sugar maple on this soil is high. There are no limitations to woodland use and management.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and adequately sealing foundations help to prevent wet basements. An alternative is to build on included areas of Salmon soils, which have few limitations for dwellings.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser subgrade or base material to frost depth helps to prevent frost action from heaving and buckling pavement.

The seasonal high water table is the main limitation to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. An alternative is to place the absorption field on included or nearby soils that generally are in higher areas and are not wet.

The capability subclass is 2w. The forestland ordination symbol is 3A.

NoB—Nicholville very fine sandy loam, 2 to 6 percent slopes

This is a very deep, gently sloping, moderately well drained soil on dissected plains. Areas are irregular in shape and range from 6 to 60 acres.

Typical sequence, depth, and composition of the layers of the Nicholville soil—

Surface layer:
0 to 8 inches, very dark grayish brown very fine sandy loam

Subsoil:
8 to 14 inches, brown very fine sandy loam
14 to 18 inches, dark yellowish brown very fine sandy loam
18 to 23 inches, brown very fine sandy loam

Substratum:
23 to 39 inches, brown very fine sandy loam
39 to 55 inches, dark grayish brown loamy very fine sand
55 to 72 inches, dark brown very fine sandy loam

Included with this soil in mapping are small areas of sandy Croghan soils, coarser textured Eelweir soils, more clayey and somewhat poorly drained Hailesboro soils, poorly drained and somewhat poorly drained Roundabout soils, and well drained Salmon soils. Croghan and Eelweir soils are on tops of knolls. Hailesboro soils are on footslopes of knolls and valley sides. Roundabout soils are along streams or in depressions. Salmon soils are on knolls or upper side slopes. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Nicholville soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Moderate
Depth to water table: Perched at a depth of 1.5 to 2 feet from November to May

Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are cultivated or in hay. Some areas are used as pasture or woodland.

This soil is suited to most crops grown in the county. Erosion is a hazard, and seasonal wetness is a limitation. Erosion is a severe hazard on longer, steeper slopes. Conservation measures, such as cross-slope tillage, stripcropping, crop rotations that stress sod crops, and conservation tillage, help to control erosion and to maintain or restore tilth. In some years wetness delays planting and interferes with harvesting, especially on included Roundabout soils. Installing subsurface drainage and selecting short-season plant species help to compensate for wetness. Adding lime helps to improve soil reaction and increases nutrients available to plants. Adding fertilizer and lime according to soil tests and using crop rotations to limit consecutive years of row crops help to maintain high productivity and good soil tilth.

This soil is well suited to hay and pasture. The seasonal high water table and low soil reaction are the main limitations. Restricting stock in early spring and during other wet periods helps to maintain good soil tilth. Drainage helps to increase productivity and longevity of deep-rooted legumes. Adding lime according to soil tests helps to improve soil reaction and to increase adaptable plant species and productivity. Overgrazing can cause loss of desirable plant species and can cause severe erosion on longer, steeper slopes. Proper stocking rates, rotational grazing, yearly mowing, and additions of lime and fertilizer help to increase quantity and quality of forage.

Potential productivity for sugar maple on this soil is high. There are no limitations to woodland use and management.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and adequately sealing foundations help to prevent wet basements. The included areas of Salmon soils have few limitations for dwellings.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser subgrade or base material to frost depth helps to prevent frost action from heaving and buckling pavement.

The seasonal high water table is the main limitation to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. An alternative is to place the absorption field on included or nearby soils that generally are in higher areas and are not wet.

The capability subclass is 2e. The forestland ordination symbol is 3A.

NoC—Nicholville very fine sandy loam, rolling

This is a very deep, moderately well drained soil on dissected terraces and valley sides. Areas are irregular in shape and range from 6 to 60 acres. Slopes range from 5 to 15 percent and are complex.

Typical sequence, depth, and composition of the layers of the Nicholville soil—

Surface layer:
0 to 8 inches, very dark grayish brown very fine sandy loam

Subsoil:
8 to 14 inches, brown very fine sandy loam
14 to 18 inches, dark yellowish brown very fine sandy loam
18 to 23 inches, brown very fine sandy loam

Substratum:
23 to 39 inches, brown very fine sandy loam
39 to 55 inches, dark grayish brown loamy very fine sand
55 to 72 inches, dark brown very fine sandy loam

Included with this soil in mapping are small areas of sandy Adams soils, coarser textured Eelweir soils, more clayey Hailesboro soils, poorly drained and somewhat poorly drained Roundabout soils, and well drained Salmon soils. Adams and Eelweir soils are on tops of knolls. Hailesboro soils are on footslopes of knolls and valley sides. Roundabout soils are along streams or in depressions. Salmon soils are on tops and the upper side slopes of hills and ridges. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Nicholville soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: Perched at a depth of 1.5 to 2 feet from November to May
Depth to bedrock: More than 60 inches

Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most of this unit is used as pasture or woodland. Some areas are used as hayland.

This soil is poorly suited to most crops grown in the county because of the severe erosion hazard and seasonal wetness. Conservation measures, such as crop rotations that stress sod crops and conservation tillage, help to control erosion and to maintain or restore tilth. Topography is complex, and in most areas contour plowing is not feasible. In some years wetness delays planting and interferes with harvesting, especially on included Roundabout soils. Installing subsurface drainage and selecting short-season plants help to compensate for wetness. Adding lime is needed to raise soil reaction and to increase available nutrients. Adding fertilizer and lime according to soil tests and using crop rotations to limit consecutive years of row crops help to ensure high productivity and good soil tilth.

This soil is fairly suited to pasture and hayland. Erosion is a hazard. The seasonal high water table and low soil reaction are the main limitations. Overgrazing can cause loss of desirable plant species and can cause a severe erosion hazard. Proper stocking rates help to maintain stabilizing vegetation and to control erosion. Rotational grazing, yearly mowing, and adding lime and fertilizer help to increase quantity and quality of forage. Restricting stock from pasture in early spring and during other wet periods helps to maintain good soil tilth. Drainage helps to increase productivity and longevity of deep-rooted legumes. Low soil reaction limits adaptable plant species and productivity. Adding lime according to soil tests helps to improve soil reaction.

Potential productivity for sugar maple on this soil is high. Erosion is a hazard. Building logging roads on the contour, installing water bars to protect roads when not in use, and routing roads and skid trails to less sloping areas help to control erosion.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements. Included areas of Salmon soils have few limitations for dwellings. Erosion is a hazard on construction sites. Siting dwellings in less sloping areas and revegetating disturbed places during or soon after construction help to control erosion.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser subgrade or base material to frost depth helps to prevent frost action from heaving and buckling pavement. Erosion is a hazard on cutbanks and in other scarified areas. Revegetating disturbed areas soon after construction helps to control erosion.

The seasonal high water table is the main limitation to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. An alternative is to place the absorption field on included or nearby soils, such as Salmon soils, that are better suited to septic tank absorption fields.

The capability subclass is 3e. The forestland ordination symbol is 3R.

NrB—Nicholville very fine sandy loam, 0 to 6 percent slopes, rocky

This is a very deep, gently sloping, moderately well drained soil on bedrock-controlled terraces and plains. Rock outcrops, in many places adjacent to included soils, cover 0.1 to 2 percent of the total surface area. Most areas are on slopes of 0 to 3 percent, but the range is 0 to 6 percent. Areas are irregular in shape, and range from 6 to 60 acres.

Typical sequence, depth, and composition of the layers of the Nicholville soil—

Surface layer:
0 to 8 inches, very dark grayish brown very fine sandy loam

Subsoil:
8 to 14 inches, brown very fine sandy loam
14 to 18 inches, dark yellowish brown very fine sandy loam
18 to 23 inches, brown very fine sandy loam

Substratum:
23 to 39 inches, brown very fine sandy loam
39 to 55 inches, dark grayish brown loamy very fine sand
55 to 72 inches, dark brown very fine sandy loam

Included with this soil in mapping are small areas of rock outcrops; sandy Croghan soils; loamy Eelweir soils; more clayey, somewhat poorly drained Hailesboro soils; shallow Insula soils; somewhat poorly drained and poorly drained Roundabout soils; and well drained Salmon soils. Rock outcrops are on tops and sides of small knolls. Hailesboro soils are on footslopes of knolls and valley sides. Roundabout soils are along streams or in depressions. Salmon soils are on knolls or on upper side slopes. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Nicholville soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the subsoil, and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: Perched at a depth of 1.5 to 2 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are in hay. Some areas are cultivated, pastured, or wooded.

This soil is poorly suited to cultivated crops because of rock outcrops, the seasonal high water table, and the hazard of erosion. Scattered rock outcrops distort traffic patterns in fields, and cultivation with modern equipment is difficult. In some years the seasonal high water table delays planting and harvesting of crops. Rock outcrops and included areas of shallow or moderately deep soils interfere with installation of drainage; therefore, an adequate number of test pits need to be examined prior to construction. Erosion is a severe hazard on longer, steeper slopes. Conservation practices, such as conservation tillage, crop rotations that emphasize sod crops, cover crops, and contour plowing, help to reduce runoff and to control erosion. Adding lime helps to improve soil reaction. Adding fertilizer and lime according to soil tests and using crop rotations to limit consecutive years of row crops help to ensure high productivity and good soil tilth.

This soil is fairly suited to hayland and pasture. Scattered rock outcrops disrupt traffic patterns and limit haying operations. The seasonal high water table and low reaction are also limitations. Restricting stock from pasture in early spring and during other wet periods helps to maintain good soil tilth. Drainage helps to increase productivity and longevity of deep-rooted legumes. Adding lime according to soil tests helps to improve soil reaction and to increase adaptable plant species and productivity. Overgrazing can cause loss of desirable plant species and severe erosion on longer, steeper slopes. Proper stocking rates, rotational grazing, yearly mowing, and additions of lime and fertilizer help to increase quantity and quality of forage.

Potential productivity for sugar maple on this soil is moderate. There are no limitations to woodland use and management.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing foundation drains and sealing foundations help to prevent wet basements. An alternative is to avoid included, shallow Insula soils as sites for dwellings and to select included Salmon soils, which have few limitations to this use.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser subgrade or base material to frost depth helps to prevent frost action from heaving and buckling pavement. Included areas of shallow Insula soils and rock outcrops are problems for local roads and streets. Adjusting road alignment or grade helps to minimize these problems on included areas.

The seasonal high water table is the main limitation to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. An alternative is to avoid included areas of shallow Insula soils and to place the absorption field on included or nearby soils that are not wet.

The capability subclass is 6s. The forestland ordination symbol is 3A.

OgA—Ogdensburg loam, 0 to 3 percent slopes

This is a moderately deep, nearly level, somewhat poorly drained soil in shallow basins or troughs. Areas are irregular in shape, and range from 10 to 100 acres.

Typical sequence, depth, and composition of the Ogdensburg soil—

Surface layer:
0 to 9 inches, black loam

Subsoil:
9 to 14 inches, dark yellowish brown fine sandy loam
14 to 21 inches, grayish brown fine sandy loam

Substratum:
21 to 24 inches, gray and grayish brown very gravelly sandy loam

Bedrock:
24 inches, dolomitic sandstone bedrock

Included with this soil in mapping are small areas of shallow, well drained Insula and Summerville soils on slight knolls. Also included are small areas of finer textured Matoon soils; small areas of shallow, poorly drained Hannawa soils in slight depressions; and well drained, very deep Grenville soils on some small ridges or hills. Also included are areas of well drained Nehasne soils on slight knolls. Included soils range to 6 acres and make up about 15 percent of this unit.

Important properties of the Odgensburg soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid or neutral in the upper part of the subsoil, and neutral to moderately alkaline in the lower part of the subsoil and the substratum
Erosion hazard: Low
Depth to water table: At depths of 0.5 to 1.5 feet from November to May
Depth to bedrock: 20 to 40 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland or brushland. Some areas are used for pasture or cultivated crops.

This soil is fairly suited to cultivated crops. The seasonal high water table restricts root growth of some plants. In some years wetness delays planting in spring and interferes with harvesting in fall. Stones in the soil hinder tillage and cause excessive wear on equipment.

This soil is fairly suited to hayland and pasture. The seasonal high water table and moderate depth to bedrock restrict rooting depth and impede growth of legumes. Permitting animals to graze on the soil when wet can cause surface compaction and loss of tilth. Deferred grazing, rotational grazing, regular applications of fertilizer and lime, and yearly mowing help to maintain soil tilth and to sustain productive stands.

Potential productivity for red maple on this soil is moderately low. Wet soil conditions limit equipment use. Restricting heavy equipment use to drier times of the year or to winter, when the soil is frozen, will minimize rutting of the soil and related equipment problems. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable species help to reduce the seedling mortality rate. The water table limits root development and windthrow is a moderate hazard. Minimizing thinning and planting water-tolerant trees help to reduce windthrow.

Seasonal wetness and moderate depth to bedrock are limitations to use of this soil as a site for dwellings with basements. Dwellings without basements are a more suitable use of this soil. Installing subsurface drainage and adequately sealing foundations help to reduce wetness. Deep Grenville soils, which are near most areas of this soil, are more suitable for dwellings with basements.

The seasonal high water and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and using coarser grained subgrade or base material to frost depth help to prevent frost action from damaging pavement. An alternative is to avoid the Ogdensburg soil and to route roads on nearby soils, such as deeper Grenville soils.

Moderate depth to bedrock and the seasonal high water table are the main limitations to use of this soil as a site for septic tank absorption fields. The septic system could be placed on nearby or included soils that are more favorable to this use.

The capability subclass is 3w. The forestland ordination symbol is 3W.

OgB—Ogdensburg loam, 3 to 8 percent slopes

This is a moderately deep, gently sloping, somewhat poorly drained soil in shallow basins or troughs. Areas of this soil are irregular in shape. They range from 6 to 40 acres.

Typical sequence, depth, and composition of the Ogdensburg soil—

Surface layer:
0 to 9 inches, black loam

Subsoil:
9 to 14 inches, dark yellowish brown fine sandy loam
14 to 21 inches, grayish brown fine sandy loam

Substratum:
21 to 24 inches, gray and grayish brown very gravelly sandy loam
24 inches, dolomitic sandstone bedrock

Included with this soil in mapping are small areas of shallow Hannawa soils in slight depressions and Insula and Summerville soils on knolls. Also included are some small areas of Matoon soils, which have a higher clay content than the Ogdensburg soil, and well drained Nehasne soils on small knolls. Included soils range to 6 acres and makeup about 15 percent of this unit.

Important properties of the Ogdensburg soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid or neutral in the upper part of the subsoil, and neutral to moderately alkaline in the lower part of the subsoil and the substratum
Erosion hazard: Moderate

Depth to water table: At depths of 0.5 to 1.5 feet from November to May
Depth to bedrock: 20 to 40 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as woodland or brushland. Some areas are pastured or cultivated.

This soil is fairly suited to cultivated crops. The seasonal high water table and moderate depth to bedrock restrict root growth. In some years wetness delays planting in spring and interferes with harvesting in fall. Depth to bedrock limits root growth and availability of water in dry summers. Erosion is a hazard on longer, steeper slopes. Conservation tillage helps to control erosion.

This soil is fairly suited to hayland and pasture. The seasonal high water table and moderate depth to bedrock limit the root zone and impede growth of legumes. Grazing the soil when wet causes surface compaction and loss of tilth. Deferred grazing, rotational grazing, proper stocking rates, regular applications of lime and fertilizer, and yearly mowing help to increase quantity and quality of forage and to maintain soil tilth.

Potential productivity for maple on this soil is low or moderate. Wet soil conditions limit equipment use. Logging and road building during drier periods or in winter when the soil is frozen help to minimize rutting of the soil and related equipment problems. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to reduce the seedling mortality rate. The water table limits root development and windthrow is a moderate hazard. Minimizing thinning and planting shallow-rooted species help to minimize the windthrow hazard.

Seasonal wetness and moderate depth to bedrock are limitations to use of this soil as a site for dwellings with basements. Dwellings without basements are a more suitable use of this soil. Installing subsurface drains and adequately sealing foundations help to compensate for wetness. An alternative is to use nearby soils, such as Grenville soils, that are more suitable for dwellings with basements.

The seasonal high water table and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to reduce wetness. Providing coarser subgrade or base material to frost depth helps to prevent frost action from heaving and buckling pavement. An alternative is to avoid the Ogdensburg soil and to route roads on nearby deeper, drier soils, such as Grenville soils.

The seasonal high water table and moderate depth to bedrock are the main limitations to use of this soil as a site for septic tank absorption fields. Nearby or included areas of deeper soils, such Grenville soils, have fewer limitations to this use.

The capability subclass is 3w. The forestland ordination symbol is 3W.

Pg—Pits, gravel and sand

This map unit consists of small to large excavations generally on sides of hills and ridges from which sand or sand and gravel have been removed. Most pits have short, steep slopes along the edges. Bottoms of pits generally are nearly level, and in places water is ponded. Units range from 6 to more than 50 acres.

Pits, gravel and sand, are variable in composition; however, pit walls consist mainly of sand or of sand and gravel, generally stratified. Bottoms of pits are generally sandy or sandy and gravelly.

Included with Pits, gravel and sand, in mapping are areas where removed material was loamy or clayey or was all sand and gravel. In both areas walls and floors of pits are loamy or clayey. In some places small areas of bedrock have been excavated and exposed. In places gravel pits have expanded after mapping, are larger, and have a different shape than those shown on soil maps. In other places pits have been filled in, graded, and reclaimed. Some small areas of gravel pits contain piles of refuse. Inclusions range to 6 acres and make up about 10 percent of this unit.

Properties of Pits, gravel and sand, are highly variable; generally, however, permeability of pit bottoms is slow or very slow and slope of pit walls is steep or very steep. Although active pits have no plant cover, older, abandoned pits support drought-tolerant grasses and shrubs. Abandoned pits can be smoothed and reclaimed to help to control erosion.

Pits, gravel and sand, are unsuited to farming because of low fertility and steepness of pit sides. In some places grading pit sides and depositing adequate amounts of topsoil on pits can reclaim these areas for some agricultural uses.

Pits, gravel and sand, are unsuitable for urban uses because of slow permeability, lack of fertility, and steepness of pit sides. After landscaping and adding large deposits of topsoil, some areas could be reclaimed for urban use. Onsite investigation of each site is needed.

Pits, gravel and sand, have not been assigned a capability subclass or a forestland ordination symbol.

Ph—Pits, quarry

This map unit consists of small to large open pit mines from which feldspar, marble, tremolite, hematite, and pyrite were removed. Sides of pits are very steep or, in some places, vertical. Bottoms of pits are nearly level and in most areas water is ponded. Areas range from 6 to 10 acres.

Included with Pits, quarry, in mapping are areas where soil was removed and rock was quarried. In places quarries have expanded after mapping, are larger, and have different shapes than those shown on soil maps. Some places have small areas of refuse. Most areas are unreclaimed, open, shear-sided excavations in bedrock to various depths, and are filled with water. Inclusions range to 6 acres and make up about 20 percent of this unit.

Pits, quarry, are unsuited to most uses because of steep sides and ponding. Swimming in quarry pits can be quite hazardous because of sharp dropoffs, deep water, and no resting places along smooth, shear walls. Diving is particularly dangerous because of submerged abandoned machinery and rock shelves.

Inactive quarries are difficult to reclaim because slopes cannot be smoothed and graded. Not enough soil is available for filling in and reshaping excavated areas. Some bushes and small trees grow in cracks in walls and floors.

Pits, quarry, have not been assigned a capability subclass or a forestland ordination symbol.

PmC—Potsdam very fine sandy loam, 8 to 15 percent slopes

This is a very deep, strongly sloping, well drained soil on side slopes of hills and knolls on glacial till plains. Areas of this soil generally are long and narrow or are irregular in shape, and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Included with this soil in mapping are small areas of moderately well drained Crary soils and poorly drained Lyme soils on footslopes, along drainageways, and in other slightly concave areas. Also included are small areas of moderately deep Tunbridge soils where bedrock is less than 40 inches deep, small areas of rock outcrops, and areas of Berkshire soils where the substratum is less firm and dense than in the Potsdam soil. Also included are areas of sandy Adams soils and gravelly Colton soils where flowing water deposited small pockets of stratified sand and gravel. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some farmed areas are reverting to brushland or woodland.

This soil is moderately suited to cultivated crops. If cultivated crops are grown, intensive management practices are needed to reduce runoff and to control erosion. Conservation tillage, cover crops, contour plowing, and crop rotations that emphasize sod crops help to control erosion and to reduce loss of applied fertilizer in runoff. Low soil reaction has an adverse effect on natural fertility. Applying lime and fertilizer according to soil tests helps to achieve good yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is fairly suited to hay and pasture. Overgrazing can result in a severe hazard of erosion. Rotational grazing, proper stocking rates, regular applications of lime and fertilizer according to soil tests, and yearly mowing help to control erosion, to maintain pasture seedlings, and to sustain productivity.

Potential productivity for sugar maple on this soil is moderate or high. Erosion is a moderate hazard.

Building logging roads and skid trails on the contour and constructing water bars to protect roads and trails when not in use help to control erosion.

The seasonal high water table and excessive slope are moderate limitations to use of this soil as a site for dwellings with basements. Installing drains by footings and shaping the land to move surface water and runoff from dwellings help to lower the water table. Adequately sealing foundations helps to prevent wet basements. Designing the structure to conform to slope or shaping the land helps to overcome slope. Erosion is a hazard in areas cleared during construction. Controlling runoff during construction and establishing a vegetative cover as soon as possible after construction help to control erosion.

The seasonal high water table, slope, and potential for frost action are moderate limitations to use of this soil as a site for local roads and streets. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Constructing roads on the contour and adapting road design to slope help to overcome slope. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Slow permeability in the substratum is the main limitation to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 3e. The forestland ordination symbol is 3R.

PoC—Potsdam-Tunbridge complex, 3 to 15 percent slopes, very bouldery

This map unit consists of well drained, gently sloping to strongly sloping soils formed in glacial till on uplands. Typically, the very deep Potsdam soil is on smooth backslopes of hills and on sides of valleys. The moderately deep Tunbridge soil is on crests of ridges and hills and on bedrock-controlled terraces and knolls. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas of this unit are irregular in shape and 6 to 100 acres, but the range is 6 to 200 acres. The unit is about 50 percent Potsdam soil, 30 percent Tunbridge soil, and 20 percent other soils. The Potsdam and Tunbridge soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong brown silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Included with this soil in mapping are small areas of moderately well drained Crary soils and poorly drained Lyme soils and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of shallow Lyman soils where bedrock is less than 20 inches deep on summits of ridges and hills, areas of rock outcrops in conjunction with included Lyman soils, and areas of very deep, more permeable Berkshire soils where the substratum is less firm and dense than in the Potsdam soil. Also included are areas of sandy Adams soils and gravelly Colton soils where flowing water deposited small pockets of stratified sand and gravel, small areas where slopes are steeper than those of the Potsdam and Tunbridge soils, and a few small areas where the surface is free of boulders and stones. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil Reaction: Extremely acid to moderately acid in the

surface layer, extremely acid in the subsurface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. A few areas are old meadows or clearings.

These soils are poorly suited to cultivated crops because many boulders and stones are on the surface. Rock outcrops and shallow Lyman soils are also limitations.

These soils are poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on these soils is moderate or high. Erosion is a hazard where logging operations or road and trail construction exposes the soil to runoff. Building logging roads and skid trails on the contour and installing water bars to protect roads and trails when not in use help to control erosion. Boulders on the surface hinder machine planting of trees.

Depth to bedrock on the Tunbridge soil, the seasonal high water table on the Potsdam soil, and included steeper areas are the main limitations to use of these soils as a site for dwellings with basements. Onsite investigation is needed to avoid blasting or excessive filling because of moderate depth to bedrock on the Tunbridge soil and to locate alternative sites in less sloping areas. Excessive slope limits building design choices and increases the hazard of erosion on construction sites. Limiting areas disturbed during construction and stabilizing sites as soon as possible after construction is completed help to control erosion. On the Potsdam soil installing drains by footings and shaping the land so subsurface water and runoff are diverted from dwellings help to lower the water table. Adequately sealing foundations helps to prevent wet basements.

Slope, potential for frost action, the seasonal high water table on the Potsdam soil, and moderate depth to bedrock on the Tunbridge soil are moderate limitations to use of these soils as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and using an adapted road design help to overcome slope. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Planning road grades and routes to avoid bedrock is needed.

Slow permeability in the substratum on the Potsdam soil and moderate depth to bedrock on the Tunbridge soil are the main limitations to use of these soils as a site for septic tank absorption fields. On the Potsdam soil enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. On the Tunbridge soil onsite investigations are needed to avoid moderate depth to bedrock.

The capability subclass is 6s for the Potsdam and Tunbridge soils. The forestland ordination symbol is 3R for the Potsdam and Tunbridge soils.

PoD—Potsdam-Tunbridge complex, 15 to 35 percent slopes, very bouldery

This map unit consists of well drained, moderately steep to very steep soils formed in glacial till on uplands. Typically, the very deep Potsdam soil is on smooth backslopes of hills and sides of valleys and the moderately deep Tunbridge soil is on crests of ridges and hills and on bedrock-controlled terraces and knolls. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface of these soils. Most areas are irregular in shape and 6 to 100 acres, but the range is 6 to 200 acres. The unit is about 50 percent Potsdam soil, 30 percent Tunbridge soil, and 20 percent other soils. The Potsdam and Tunbridge soils are intermingled so closely on the landscape that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Potsdam soil—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Included with this soil in mapping are small areas of moderately well drained Crary soils on backslopes and poorly drained Lyme soils and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included, on summits of ridges and hills and on tops of knolls, are small areas of Lyman soils where bedrock is less than 20 inches deep. Also included are areas of rock outcrops near Lyman soils; areas of very deep, more permeable Berkshire soils where the substratum is less firm and dense than in the Potsdam soil; and areas of sandy Adams soils and gravelly Colton soils on terraces and lower side slopes where flowing water deposited small pockets of stratified sand and gravel. Also included are small areas where slopes are steeper than those for Potsdam and Tunbridge soil and small areas where the surface is free of boulders and stones. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Potsdam soil—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil Reaction: Extremely acid to moderately acid in the surface layer, extremely acid in the subsurface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At depths of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland.

These soils are unsuited to cultivated crops because of excessive slope and many boulders and stones on the soil surface.

These soils are poorly suited to pasture. Numerous surface boulders and stones and excessive slope severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on these soils is moderate. Erosion is a severe hazard where logging operations or construction of roads and trails exposes the soil to runoff. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. Boulders on the surface and steepness of slope hinder machine planting of trees. Moderate depth to bedrock limits root development and windthrow is a moderate hazard. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

Depth to bedrock on the Tunbridge soil and excessive slope are the main limitations to use of these soils as a site for dwellings with basements. Excessive slope can limit architectural design and can cause severe erosion on disturbed building sites. On the Tunbridge soil depth to bedrock is moderate and excavation is difficult. Using designs that conform to the natural slope helps to overcome slope. Limiting the area disturbed during construction and stabilizing the site as soon as possible after construction is completed help to control erosion. An alternative is to build dwellings with basements on nearby or included, less sloping, very deep soils. In some areas the surface needs to be cleared of boulders to establish lawns on these soils.

Slope is the main limitation to use of these soils as a site for local roads and streets. Potential for frost action, the seasonal high water table on the Potsdam soil, and moderate depth to bedrock on the Tunbridge soil are also limitations. Planning road grades and locations to avoid bedrock, constructing roads on the contour, land shaping and grading, and adapting road design to slope are needed.

Slow permeability in the substratum of the Potsdam soil, moderate depth to bedrock on the Tunbridge soil, and slope are the main limitations to use of these soils as a site for septic tank absorption fields. The septic system could be placed on included or nearby soils that are more favorable to this use and deeper, more permeable, and less sloping than the Potsdam soil, such as gently sloping or moderately sloping Berkshire soils.

The capability subclass is 7s for the Potsdam and Tunbridge soils. The forestland ordination symbol is 3R for the Potsdam and Tunbridge soils.

PpD—Potsdam and Berkshire soils, 15 to 35 percent slopes, very bouldery

This map unit consists of very deep, moderately steep to very steep soils on glacial till plains. Typically, Potsdam soils are on sides of hills and ridges on uplands and Berkshire soils are on the lower side slopes of valleys and in areas of complex, hilly topography at edges of outwash plains. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of this unit are long and narrow or are irregular in shape and are 6 to 50 acres, but the range is 6 to 200 acres. These soils have similar interpretations for most uses and were not separated in mapping because of steep slopes and many boulders on the surface. Some areas are either almost all Potsdam soils or almost all Berkshire soils, and some areas consist of both soils. The unit is about 50 percent Potsdam soils, 30 percent Berkshire soils, and about 20 percent other soils.

Typical sequence, depth, and composition of the layers of Potsdam soils—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:
6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Typical sequence, depth, and composition of the layers of Berkshire soils—

Surface layer:
0 to 7 inches, dark brown loam

Subsoil:
7 to 11 inches, brown loam
11 to 30 inches, brown gravelly loam

Substratum:
30 to 72 inches, dark yellowish brown sandy loam

Included with this soil in mapping are small areas of moderately well drained Crary and Sunapee soils on benches and areas of poorly drained Lyme soils and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of Tunbridge soils where bedrock is less than 40 inches deep, small areas of rock outcrops near Tunbridge soils, and areas of sandy Adams soils and gravelly Colton soils on terraces where flowing water deposited small pockets of stratified sand and gravel. Also included are a few small areas where the surface is free of boulders and stones. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Potsdam soils—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, extremely acid in the subsurface

layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: Perched at a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of Berkshire soils—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Slight
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. A few areas are old meadows or clearings.

These soils are unsuited to cultivated crops because of steep slopes and many boulders and stones on the surface. Erosion is a severe hazard when the surface of these soils are exposed.

These soils are poorly suited to pasture. Excessive slope and numerous boulders and surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on these soils is moderate or high. Erosion is a hazard where logging operations or construction of roads and trails scarifies and exposes the soils, particularly on Potsdam soils. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. Steep slopes are a moderate limitation to equipment use. Boulders on the surface hinder machine planting.

These soils are poorly suited to dwellings with basements because of steepness of slope. For most dwelling designs excavation and grading are difficult on these soils. Erosion is a hazard on building sites when the soil is exposed. Houses could be built using special designs that accommodate slope. An alternative is to build houses on nearby or included, less sloping areas of this or other soils. Limiting the area that construction activities disturb and establishing stabilizing vegetation on the site as soon as possible help to control erosion.

These soils are poorly suited to local roads and streets. Steepness of slope is the main limitation. Changing the grade and cutting and filling help to overcome slope. Taking special care where culverts empty out helps to prevent formation of gullies. Stabilizing cut and fill slopes with vegetation as soon as possible after construction helps to control erosion. An alternative is to route roads to nearby or included areas of less sloping soils.

These soils are poorly suited to septic tank absorption fields because of slow permeability on Potsdam soils and excessive slope. These limitations can cause the effluent to seep out at the soil surface or to be distributed unequally among the distribution lines. An alternative is to place the septic system on included or nearby soils that are more favorable to this use and that are more permeable and less sloping than Potsdam and Berkshire soils, such as gently sloping or moderately sloping Berkshire soils.

The capability subclass is 7s for the Potsdam and Berkshire soils. The forestland ordination symbol is 3R for Potsdam soils and 9R for Berkshire soils.

PsC—Potsdam and Crary soils, 8 to 15 percent slopes, very bouldery

This map unit consists of very deep, strongly sloping soils on glacial till plains. Typically, the well drained Potsdam soils are on upper side slopes and on convex knolls and hilltops, and the moderately well drained Crary soils are on footslopes, backslopes, and slight benches. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Most areas are irregular in shape and 6 to 50 acres; the range is 6 to 100 acres. The unit is about 40 percent Potsdam soils, 30 percent Crary soils, and 30 percent other soils. Some areas are either mostly Potsdam soils or mostly Crary soils, and some areas consist of both soils. Potsdam and Crary soils were mapped together because they have no major differences in use and management.

Typical sequence, depth, and composition of the layers of Potsdam soils—

Surface layer:
0 to 3 inches, black slightly decomposed leaf litter
3 to 6 inches, black highly decomposed organic matter

Subsurface layer:

6 to 9 inches, pinkish gray very fine sandy loam

Subsoil:
9 to 12 inches, dark reddish brown silt loam
12 to 22 inches, reddish brown and strong silt loam
22 to 34 inches, light olive brown gravelly sandy loam

Substratum:
34 to 72 inches, olive brown gravelly sandy loam

Typical sequence, depth, and composition of the layers of Crary soils—

Surface layer:
0 to 8 inches, dark brown coarse silt loam

Subsoil:
8 to 14 inches, dark brown coarse silt loam
14 to 20 inches, yellowish brown very fine sandy loam
20 to 24 inches, grayish brown very fine sandy loam

Substratum:
24 to 72 inches, brown stony fine sandy loam

Included with this soil in mapping are small areas of poorly drained Lyme soils and very poorly drained Tughill soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of Tunbridge soils where bedrock is less than 40 inches below the soil surface, some small areas of rock outcrops, and areas of Berkshire soils where the substratum is less firm and dense than that in Potsdam and Crary soils. Sandy Adams soils and gravelly Colton soils are included where flowing water deposited small pockets of stratified sand and gravel. Also included are small areas where just stones are on the surface. Included areas range to 6 acres and make up about 30 percent of this unit.

Important properties of Potsdam soils—

Permeability: Moderately slow to moderately rapid in the surface layer, subsurface layer, and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to moderately acid in the surface layer, extremely acid in the subsurface layer, very strongly acid to moderately acid in the upper part of the subsoil, very strongly acid to neutral in the lower part of the subsoil, and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 2 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of Crary soils—

Permeability: Moderate in the surface layer and subsoil and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 1.5 to 2 feet from February to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. A few areas are old meadows or clearings.

These soils are poorly suited to cultivated crops because many boulders and stones are on the surface. Removing boulders and stones would be too costly for crops normally grown in the area.

These soils are poorly suited to pasture. Boulders and stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for sugar maple on these soils is moderate. Erosion is a hazard where logging operations or construction of roads and trails exposes the soil to runoff or where roads and trails are built on grades too steep. Laying out logging roads and skid trails on the contour and building water bars on roads and trails when not in use help to minimize clearcutting and to control erosion. Boulders on the surface hinder machine planting.

Wetness is the main limitation and excessive slope is a moderate limitation to use of these soils as a site for dwellings with basements. Installing drains by footings and shaping the land to move surface water away from dwellings help to reduce wetness. Adequately sealing foundations helps to prevent wet basements. Designing the structure to conform to slope or shaping the land and filling in help to overcome slope. Erosion is a hazard in areas cleared during construction. Establishing a vegetative cover as soon as possible after construction and reducing runoff during construction help to control erosion. In some areas the surface needs to be cleared of boulders to establish lawns.

Potential for frost action and seasonal wetness are severe limitations to use of these soils as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Excessive slope is a moderate limitation. Constructing roads on the contour, land shaping and grading, and adapting road design to slope are suitable management practices.

Wetness and slow permeability in the substratum are the main limitations to use of these soils as a site for septic tank absorption fields. Providing interceptor or curtain drains to divert wetness, enlarging the absorption field, and placing wide, deep trenches below the distribution lines help to reduce wetness and to compensate for the slow permeability. Excessive slope is a moderate limitation. Laying out tile lines on the contour or using serial distribution helps to ensure uniform distribution of effluent throughout the absorption field. An alternative is to place the absorption field on included or nearby soils, such as less sloping Berkshire soils, that do not have these limitations.

The capability subclass is 6s for Potsdam and Crary soils. The forestland ordination symbol is 3R for Potsdam and Crary soils.

PvB—Pyrities fine sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, well drained soil on convex tops and upper side slopes of hills and ridges on glacial till plains. Most areas are irregular in shape and 6 to 20 acres, but the range is 6 to more than 50 acres.

Typical sequence, depth, and composition of the layers of the Pyrites soil—

Surface layer:
0 to 8 inches, dark brown fine sandy loam

Subsoil:
8 to 30 inches, brown fine sandy loam
30 to 40 inches, brown gravelly fine sandy loam

Substratum:
40 to 72 inches, brown gravelly fine sandy loam

Included with this soil in mapping are small areas of moderately well drained Kalurah soils and somewhat poorly drained Malone soils in slightly concave areas. Also included are small areas of moderately deep Nehasne soils and shallow Insula and Summerville soils where bedrock is less than 40 inches deep, areas of rock outcrops near Insula and Summerville soils, and areas of sandy Adams soils and gravelly Waddington soils where flowing water deposited small pockets of sand and gravel. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Pyrities soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flood hazard: None

Most areas of these soils are used for cultivated crops or hay. A few areas are in pasture.

This soil is well suited to cultivated crops. Erosion is a hazard, especially on longer, steeper slopes. Conservation tillage, cover cropping, contour plowing, and a crop rotation that emphasizes sod crops help to control erosion, to reduce nutrient loss, and to maintain or restore soil tilth. Adding lime and fertilizer according to soil tests helps to improve crop yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is well suited to hayland and pasture. Overgrazing can lead to loss of desirable plants, especially in dry summers. Applications of lime and fertilizer, yearly mowing, proper stocking rates, and pasture rotation help to maintain pasture seedlings and to sustain productivity.

Potential productivity for sugar maple on these soils is high. There are few limitations to planting, harvesting, or managing woodlots on this soil.

This soil is well suited to use as dwellings with basements.

Potential for frost action is a moderate limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Slow permeability in the substratum is the main limitation to use of these soils as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 2e. The forestland ordination symbol is 3A.

PvC—Pyrities fine sandy loam, 8 to 15 percent slopes

This is a very deep, strongly sloping, well drained soil on side slopes and knolls on glacial till plains. Most areas are long and narrow or roughly oval and are less than 10 acres, but the range is 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Pyrities soil—

Surface layer:
0 to 8 inches, dark brown fine sandy loam

Subsoil:
8 to 30 inches, brown fine sandy loam
30 to 40 inches, brown gravelly fine sandy loam

Substratum:
40 to 72 inches, brown gravelly fine sandy loam

Included with this soil in mapping are small areas of moderately well drained Kalurah soils and somewhat poorly drained Malone soils on footslopes, along drainageways, and in other, slightly concave areas. Also included are small areas of moderately deep Nehasne soils and shallow Insula and Summerville soils where bedrock is less than 40 inches deep, areas of rock outcrop near Insula and Summerville soils, and areas of sandy Adams soils and gravelly Waddington soils where flowing water deposited small pockets of sand and gravel. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Pyrities soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hay, pasture, or cultivated crops. A few areas are wooded.

This soil is poorly suited to cultivated crops because erosion is a severe hazard. Where it is used for row crops, intensive conservation practices are needed to reduce runoff and to control erosion. Conservation tillage, cover cropping, contour plowing, and a crop rotation that emphasizes sod crops help to control erosion and to reduce loss of applied fertilizer in runoff. Adding lime and fertilizer according to soil tests helps to improve crop yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is fairly suited to hay and pasture. Overgrazing can cause loss of desired plants and can increase the hazard of erosion, particularly in dry summers. Rotational grazing and proper stocking rates, based on careful appraisal of pasture conditions, help to retain desired forage species and to control erosion. Sufficient applications of fertilizer and lime and annual mowing help to maintain productive stands.

Potential productivity for sugar maple on this soil is high. There are few limitations to planting, harvesting, or managing woodlots on this soil.

Slope is a moderate limitation to use of this soil as a site for dwellings with basements. Designing the structure to conform to the natural slope or shaping the land helps to overcome this limitation.

Slope and potential for frost action are moderate limitations to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and adapting road design to slope help to overcome this limitation. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Slow permeability in the substratum is the main limitation to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability.

The capability subclass is 3e. The forestland ordination symbol is 3A.

PxD—Pyrities fine sandy loam, 15 to 25 percent slopes, very stony

This is a very deep, moderately steep, well drained soil on hills and along drainageways on glacial till plains. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. Most areas are long and narrow and less than 10 acres, but the range is 6 to 20 acres.

Typical sequence, depth, and composition of the layers of the Pyrities soil—

Surface layer:

0 to 8 inches, dark brown fine sandy loam

Subsoil:
8 to 30 inches, brown fine sandy loam
30 to 40 inches, brown gravelly fine sandy loam

Substratum:
40 to 72 inches, brown gravelly fine sandy loam

Included with this soil in mapping are small areas of moderately well drained Kalurah soils and somewhat poorly drained Malone soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of moderately deep Nehasne soils and shallow Insula and Summerville soils where bedrock is less than 40 inches deep, small areas of rock outcrops near Insula and Summerville soils, and areas of sandy Adams soils and gravelly Waddington soils where flowing water deposited small pockets of sand and gravel. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Pyrities soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the subsoil
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are wooded. A few areas are used for pasture. Some areas are reverting to brush or woodland.

This soil is poorly suited to cultivated crops or hay. Surface stones severely impede use of tillage, planting, and harvesting equipment. Erosion is a severe hazard.

This soil is poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on this soil is high. Moderately steep slopes and surface stones are moderate limitations for equipment use. Erosion is a hazard where logging or road construction exposes the soil. Constructing skid trails and logging roads on the contour and avoiding clearcutting help to control erosion.

Moderately steep slopes are the main limitation to use of this soil as a site for dwellings with basements. On these excessive slopes, excavation and grading for most dwelling designs are difficult. Erosion is a hazard on building sites where the soil is exposed. Designing the house to conform to steep slopes or siting the house on nearby or included, less sloping areas help to overcome slope. Limiting the area that construction activities disturb and establishing stabilizing vegetation on the site as soon as possible help to control erosion.

Slope is a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and adapting road design to slope help to overcome this limitation. Special care is needed to prevent gullying in areas where culverts empty out. Stabilizing cut and fill slopes with vegetation as soon as possible after construction helps to control erosion. An alternative is to reroute roads to nearby or included, less sloping areas.

Moderately slow permeability and slope are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for moderately slow permeability. Land shaping and installing distribution lines across the slope help to ensure uniform distribution of effluent throughout the absorption field. An alternative is to place the absorption field on nearby or included soils, such as Pyrities soils, that are less sloping than the Pyrites soil.

The capability subclass is 6s. The forestland ordination symbol is 3R.

PyB—Pyrities fine sandy loam, 3 to 8 percent slopes, rocky

This is a very deep, gently sloping, well drained soil on convex tops and upper side slopes of bedrock-controlled hills and ridges on glacial till plains. Rock outcrops cover from 0.1 to 2 percent of the surface. Most areas are irregular in shape and 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Pyrities soil—

Surface layer:
0 to 8 inches, dark brown fine sandy loam

Subsoil:
8 to 30 inches, brown fine sandy loam
30 to 40 inches, brown gravelly fine sandy loam

Substratum:

40 to 72 inches, brown gravelly fine sandy loam

Included with this soil in mapping are small areas of moderately well drained Kalurah soils and somewhat poorly drained Malone soils in slightly concave areas. Also included are moderately deep Nehasne soils and shallow Insula and Summerville soils near rock outcrops and areas of sandy Adams soils and gravelly Waddington soils where flowing water deposited small pockets of sand and gravel. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Pyrities soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for pasture and hay. A few areas are in cultivated crops.

This soil is poorly suited to cultivated crops. Rock outcrops can distort traffic patterns and hinder cultivating, planting, and harvesting equipment. Erosion is a hazard, especially on longer, steeper slopes. Included shallow soils near rock outcrops are droughty and generally unproductive. Conservation tillage, cover cropping, contour plowing, and a crop rotation that emphasizes sod crops help to control erosion, to reduce nutrient loss, and to maintain or restore soil tilth. Adding lime and fertilizer according to soil tests helps to improve crop yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is fairly suited to hay and pasture. Rock outcrops distort traffic patterns and hinder equipment use. Overgrazing can cause loss of desired plants, especially in dry summers. Close monitoring of pasture conditions is needed to determine proper stocking rates and pasture rotations. Sufficient applications of fertilizer and lime and annual, regular mowing help to maintain productive stands.

Potential productivity for sugar maple on this soil is high. Machine planting of seedlings is hampered in areas around rock outcrops. Otherwise, there are few limitations to planting, harvesting, or managing woodlots on this soil.

Rock outcrops and adjacent, shallow inclusions are the main limitations to use of this soil as a site for dwellings with basements. Digging test pits helps in siting dwellings on the deeper Pyrities soil, away from included, shallow Insula and Summerville soils, which have severe limitations. Deeper areas of the Pyrities soil are well suited to dwellings with basements.

Potential for frost action is a moderate limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Routing roads and streets on the deeper soils in this unit and avoiding rock outcrops help to minimize blasting.

Slow permeability in the substratum is the main limitation to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for slow permeability.

Slow permeability in the substratum and shallow inclusions around rock outcrops are the main limitations to use of this soil as a site for septic tank absorption fields. Digging preliminary test pits help in siting septic fields in deeper areas of this unit, away from included areas of Insula and Summerville soils, where depth to bedrock is a severe limitation.

The capability subclass is 6s. The forestland ordination symbol is 3A.

PyC—Pyrities fine sandy loam, 8 to 15 percent slopes, rocky

This is a very deep, strongly sloping, well drained soil on side slopes and rolling tops of bedrock-controlled hills and ridges on glacial till plains. Rock outcrops cover from 0.1 to 2 percent of the surface. Most areas are irregular in shape and are 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Pyrities soil—

Surface layer:
0 to 8 inches, dark brown fine sandy loam

Subsoil:
8 to 30 inches, brown fine sandy loam
30 to 40 inches, brown gravelly fine sandy loam

Substratum:
40 to 72 inches, brown gravelly fine sandy loam

Included with this soil in mapping are small areas of moderately well drained Kalurah soils and somewhat poorly drained Malone soils in slightly concave areas. Also included are moderately deep Nehasne soils and shallow Insula and Summerville soils near rock outcrops and areas of sandy Adams soils and gravelly Waddington soils where flowing water deposited small pockets of sand and gravel. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Pyrities soil—

Permeability: Moderate in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for pasture or hay.

This soil is poorly suited to cultivated crops. Rock outcrops distort traffic patterns and hinder cultivating, planting, and harvesting equipment. Erosion is a severe hazard, especially on longer and steeper slopes. Areas of included shallow soils adjacent to rock outcrops are droughty and generally unproductive. Conservation tillage, stripcropping, contour plowing, and crop rotations that emphasize sod crops help to control erosion, to reduce nutrient loss, and to maintain or restore soil tilth. Adding lime and fertilizer according to soil tests helps to improve crop yields. Periodic stone removal is needed to prevent excessive wear on machinery.

This soil is fairly suited to hayland and pasture. Rock outcrops distort traffic patterns and hinder mechanized operations. Overgrazing can cause loss of stabilizing vegetation and excessive erosion. Close monitoring of pasture conditions is helpful in establishing proper stocking rates and pasture rotations to maintain pasture seedlings and to conserve soil. Sufficient applications of fertilizer and lime and annual, regular mowing help to maintain productive stands.

Potential productivity for trees on this soil is high. Machine planting of seedlings is hampered in areas around rock outcrops. Otherwise, there are few limitations to planting, harvesting, or managing woodlots on this soil.

Excessive slope and rock outcrops are the main limitations to use of this soil as a site for dwellings with basements. Designing structures to conform to the natural slope or land shaping and filling help to overcome slope. Digging test pits is helpful in siting dwellings on the deeper Pyrities soil, away from included, shallow Insula and Summerville soils, which have severe limitations.

Slope and potential for frost action are moderate limitations to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and adapting road design to slope help to overcome this limitation. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Routing roads and streets to deeper areas and avoiding rock outcrops help to minimize blasting.

Slow permeability in the substratum and shallow inclusions around rock outcrops are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. Digging preliminary test pits helps in siting septic fields in deeper areas of this unit, away from included areas of Insula and Summerville soils, where depth to bedrock is a severe limitation.

The capability subclass is 6s. The forestland ordination symbol is 3A.

PzC—Pyrities and Kalurah soils, 8 to 15 percent slopes, very stony

This map unit consists of very deep, strongly sloping soils on glacial till plains. Typically, well drained Pyrities soils are on upper side slopes and on convex knolls and hilltops, and moderately well drained Kalurah soils are on lower side slopes and broad hilltops and benches. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. Most areas are irregular in shape and are 6 to 30 acres, but the range is 6 to 50 acres. Slopes generally are simple. Some areas consist almost entirely of either Pyrities or Kalurah soils, and some areas consist of both. These soils have similar interpretations for most uses because many stones are on the surface, so they were not separated in mapping. The unit is about 50 percent Pyrities soils, 30 percent Kalurah soils, and 20 percent other soils.

Typical sequence, depth, and composition of the layers of Pyrities soils—

Surface layer:
0 to 8 inches, dark brown fine sandy loam

Subsoil:

8 to 30 inches, brown fine sandy loam
30 to 40 inches, brown gravelly fine sandy loam

Substratum:
40 to 72 inches, brown gravelly fine sandy loam

Typical sequence, depth, and composition of the layers of Kalurah soils—

Surface layer:
0 to 11 inches, dark brown fine sandy loam

Subsoil:
11 to 24 inches, brown fine sandy loam
24 to 47 inches, brown gravelly fine sandy loam

Substratum:
47 to 72 inches, dark yellowish brown gravelly fine sandy loam

Included with this soil in mapping are small areas of somewhat poorly drained Malone soils and very poorly drained Runeberg soils on footslopes, along drainageways, and in other concave areas. Also included are small areas of moderately deep Nehasne soils and shallow Insula and Summerville soils where bedrock is less than 40 inches deep, small areas of rock outcrops, and areas of sandy Adams soils and gravelly Waddington soils on knolls and small ridges where flowing water deposited small pockets of sand and gravel. Small areas free of surface stones are scattered throughout this map unit. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Pyrities soils—

Permeability: Moderate in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flood hazard: None

Important properties of Kalurah soils—

Permeability: Moderate in the surface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid or neutral in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: From a depth of 1.5 to 2 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are wooded or are used as unimproved pasture. Some abandoned pastures are reverting to brush or woodland.

These soils are poorly suited to cultivated crops because of numerous surface stones and a severe erosion hazard. Surface stones severely impede use of tillage, planting, and harvesting equipment.

These soils are poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on these soils is high. In some areas surface stones hinder machine planting. Otherwise, these soils have few management concerns.

The seasonal high water table on Kalurah soils is the main limitation and excessive slope is a moderate limitation to use of these soils as a site for dwellings with basements. Installing drains by footings help to lower the water table. Adequately sealing foundations helps to prevent wet basements. In some areas clearing the surface of stones is needed to establish a lawn on this unit. Adopting housing designs that conform to slope helps to overcome this limitation.

Potential for frost action and excessive slope are the main limitations to use of these soils as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Building roads and streets on the contour helps to overcome excessive slope. An alternative is to select as a site for local roads and streets Pyrities soils, which are subject to less frost action than Kalurah soils.

Slow permeability in the substratum on Kalurah and Pyrities soils and the seasonal high water table on Kalurah soils are the main limitations to use of these soils as a site for septic tank absorption fields. Slow permeability and wetness can cause effluent from absorption fields to seep out at the surface. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for slow permeability. Installing a drainage system around the filter field helps to reduce wetness.

The capability subclass is 6s for Pyrities and Kalurah soils. The forestland ordination symbol is 3A for Pyrities soils and 4A for Kalurah soils.

QwB—Quetico-Rock outcrop-Insula complex, 0 to 8 percent slopes

This map unit consists of nearly level to gently sloping soils and areas of Rock outcrop on slight knolls and on bedrock-controlled glacial till plains. Rock outcrops are scattered throughout the unit, but are most prevalent in the higher parts. Areas of this unit are either irregular in shape or are elongated with a northeast-southwest orientation. Areas are 6 to 50 acres, but the range is 6 to more than 100 acres. The unit is about 55 percent very shallow, somewhat excessively drained Quetico soils, 15 percent areas of Rock outcrop, 15 percent shallow Insula soil, and 15 percent other soils. The Quetico soil, areas of Rock outcrop, and the Insula soil are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Quetico soil—

Surface layer:
0 to 1 inch, black moderately decomposed organic matter
1 to 3 inches, brown loam

Subsoil:
3 to 5 inches, dark reddish brown loam
5 to 8 inches, reddish brown loam

Bedrock:
8 inches, sandstone

Rock outcrops in this unit are mostly acidic bedrock; they are sandstone, granite, and their metamorphosed counterparts.

Typical sequence, depth, and composition of the layers of the Insula soil—

Surface layer:
0 to 1 inch, slightly decomposed leaf litter
1 to 3 inches, black highly decomposed organic material

Subsoil:
3 to 16 inches, brown gravelly fine sandy loam

Bedrock:
16 inches

Included with these soils and rock outcrops in mapping are short bedrock escarpments. Also included are small areas of fine-textured Muskellunge, Matoon, and Adjidaumo soils in small troughs where silty and clayey sediments accumulated in stillwater; some areas of high-lime rock outcrops intermingled with acidic rock outcrops; and areas of limestone and marble rock outcrops, shallow, high-lime Summerville soils, and moderately deep Nehasne soils. Also included are areas, notably along the border of Jefferson County, where the soils are warmer, usually by less than 2 degrees. Included areas range to 6 acres and make up about 15 percent of this unit.

Important properties of the Quetico soil—

Permeability: Moderate throughout the mineral soil
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid or strongly acid throughout
Erosion hazard: Moderate
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 4 to 10 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Insula soil—

Permeability: Moderately rapid throughout the mineral soil
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil Reaction: Very strongly acid to slightly acid throughout
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils and rock outcrops are in woodland or brush. Some areas are used for pasture.

These soils are unsuited to cultivated crops. Rock outcrops obstruct use of tillage and harvesting equipment. In addition, the Quetico and Insula soils are very droughty during much of the growing season, and growth of most crops is severely limited.

These soils are poorly suited to hay and pasture. Rock outcrops severely hinder use of most farm equipment. The soils tend to be droughty in summer, and overgrazing is a hazard on pasture. Overgrazing causes loss of desired plants and leads to excessive erosion in more sloping areas of the unit. Proper stocking rates and brush control are management concerns.

Potential productivity for trees on these soils is low. In some areas rock outcrops impede use of planting and logging equipment. The seedling mortality rate is severe because the soils tend to be droughty. Planting seedlings in spring while the soil is still moist helps to increase the rate of seedling survival. Shallow or very shallow depth to bedrock restricts root development of trees, and the windthrow hazard is severe. Minimizing thinning and selecting naturally shallow-rooted trees help to reduce windthrow.

Depth to bedrock is a severe limitation to use of these soils as a site for dwellings with basements. Building above bedrock and landscaping with additional fill help to overcome this limitation. An alternative is to build on included or nearby, deeper soils.

Very shallow or shallow depth to bedrock is a severe limitation to use of these soils as a site for local roads and streets. Laying out grades and routes of roads to avoid rock outcrops helps to minimize rock removal. Some areas, however, need to be blasted.

This soil is unsuitable as a site for conventional septic tank absorption fields because of shallow or very shallow depth to bedrock. The absorption field could be placed on included or nearby soils that are better suited to this use.

The capability subclass is 7s for the Quetico soil. Rock outcrop and the Insula soil were not assigned a capability subclass. The forestland ordination symbol is 2D for the Quetico and Insula soils. Rock outcrop was not assigned an ordination symbol.

RaA—Raquette sandy loam, 0 to 3 percent slopes

This is a very deep, nearly level, somewhat excessively drained soil formed in water-sorted materials on terraces and deltas and on tops of kames and moraines on uplands. Most areas are elongated, have irregular margins, and range from 6 to 25 acres.

Typical sequence, depth, and composition of the layers of the Raquette soil—

Surface layer:
0 to 9 inches, very dark grayish brown and dark brown sandy loam

Subsoil:
9 to 19 inches, brown sandy loam
19 to 25 inches, very dark grayish brown and dark brown gravelly loamy sand

Substratum:
25 to 72 inches, brown very gravelly loamy coarse sand

Included with this soil in mapping are small areas of moderately well drained Heuvelton and Depeyster soils that are on footslopes and that have a higher clay content than Raquette soils. Also included are sandy and gravelly Waddington soils where the gravel content in the surface layer and the subsoil is higher than that in the Raquette soil, some small areas of the less gravelly Adams soils, and small areas of loamy, well drained Grenville soils and moderately well drained Hogansburg soils on side slopes of ridges and hills. In a few places small areas of exposed bedrock are included. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Raquette soil—

Permeability: Moderately rapid or rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the upper part of the subsoil, neutral or slightly alkaline in the lower part of the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet
Depth to rock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are cultivated. Other areas are used for pasture or are wooded. A few areas are mined for sand and gravel.

This soil is suited to cultivated crops. The soil may be droughty during dry periods in summer because of low or moderate water holding capacity. Returning crop residue and adding other organic matter to the soil help to improve water holding capacity. Conservation tillage and crop rotations that include sod crops help to control erosion, to enhance the water holding capacity of the soil, and to improve or restore soil tilth. Adding lime and fertilizer in multiple, small increments according to soil tests helps to maintain or increase productivity of crops.

This soil is well suited to hay and pasture. Plants may be subject to moisture stress during dry periods because of low or moderate water holding capacity. Adding organic matter to the soil helps to improve water holding capacity. Proper stocking rates, rotational grazing, and additions of lime and fertilizer help to maintain populations of desirable plant species.

Potential productivity for white pine on this soil is moderate or high. There are no limitations to woodland use and management.

This soil has few limitations to use as a site for dwellings with basements. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

This soil has few limitations to use as a site for local roads and streets. Very rapid permeability in the substratum is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. An alternative is to place the septic system on included or nearby soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 2s. The forestland ordination symbol is 8A.

RaB—Raquette sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, somewhat excessively drained soil formed in water-sorted materials on terraces and deltas and on tops of kames and moraines on uplands. Most areas are elongated, have irregular margins, and range from 6 to 25 acres.

Typical sequence, depth, and composition of the layers of the Raquette soil—

Surface layer:
0 to 9 inches, very dark grayish brown and dark brown sandy loam

Subsoil:
9 to 19 inches, brown sandy loam
19 to 25 inches, very dark grayish brown and dark brown gravelly loamy sand

Substratum:
25 to 72 inches, brown very gravelly loamy coarse sand

Included with this soil in mapping, on footslopes and benches, are some small areas of moderately well drained Heuvelton and Depeyster soils that have a higher clay content than Raquette soils. Also included are small areas of Waddington soils where the gravel content is higher than that in the Raquette soil; some small areas of less gravelly Adams soils; and areas of loamy, well drained Grenville soils and moderately well drained Pyrities soils on saddles and shoulders of ridges and hills. A few areas of rock outcrops are also included. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Raquette soil—

Permeability: Moderately rapid or rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the upper part of the subsoil, neutral to slightly alkaline in the lower part of the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to rock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are cultivated. Other areas are used for pasture or are wooded. A few areas are mined for sand and gravel.

This soil is suited to cultivated crops. The soil may be droughty during dry periods in summer because of low or moderate water holding capacity. Erosion is a hazard on longer, steeper slopes. Returning crop residues and adding other organic matter to the soil help to improve water holding capacity. Conservation tillage, stripcropping, and crop rotations that emphasize sod crops help to control erosion, to enhance water holding capacity of the soil, and to improve or restore soil tilth. Adding lime and fertilizer in multiple, small increments according to soil tests helps to maintain or increase productivity of crops.

This soil is well suited to hay and pasture. Plants on these soils may be subject to moisture stress during dry periods because of low or moderate water holding capacity. Adding organic matter to the soil helps to improve water holding capacity. Overgrazing can diminish the vegetative cover and can cause an erosion hazard. Close monitoring of pasture conditions, maintaining proper stocking rates, and rotational grazing help to maintain pasture seeding and to control erosion.

Potential productivity for white pine on this soil is moderate or high. There are no limitations to woodland use and management.

This soil has few limitations to use as a site for dwellings with basements. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

This soil has few limitations to use as a site for local roads and streets.

Very rapid permeability in the substratum is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. An alternative is to place the septic system on included or nearby soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 2s. The forestland ordination symbol is 8A.

RaC—Raquette sandy loam, 8 to 15 percent slopes

This is a very deep, strongly sloping, somewhat excessively drained soil formed in water-sorted materials on side slopes of deltas, terraces, kames, and moraines on uplands. Most areas are elongated, have irregular margins, and range from 6 to 25 acres.

Typical sequence, depth, and composition of the layers of the Raquette soil—

Surface layer:
0 to 9 inches, very dark grayish brown and dark brown sandy loam

Subsoil:
9 to 19 inches, brown sandy loam
19 to 25 inches, very dark grayish brown and dark brown gravelly loamy sand

Substratum:
25 to 72 inches, brown very gravelly loamy coarse sand

Included with this soil in mapping, on footslopes and benches, are small areas of moderately well drained Heuvelton and Depeyster soils, which have a higher clay content than Raquette soils. Also included are some small areas of more gravelly Waddington soils; areas of loamy, well drained Grenville soils and moderately well drained Hogansburg soils on backslopes of ridges and hills; and some small areas of exposed bedrock. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Raquette soil—

Permeability: Moderately rapid or rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the upper part of the subsoil, neutral to slightly alkaline in the lower part of the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to rock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hay, pasture, or cultivated crops. Some areas are wooded. A few areas are mined for gravel.

This soil is poorly suited to cultivated crops because erosion is a severe hazard. Crop rotations that emphasize sod crops, conservation tillage, contour tillage, and stripcropping help to control erosion. The soil is droughty because of low or moderate available water capacity. Returning crop residue and adding organic matter to the soil help to improve water-holding capacity. Adding lime and fertilizer according to soil tests helps to improve crop yields.

This soil is fairly well suited to hay and pasture. Erosion is a severe hazard if overgrazing diminishes the vegetative cover. Close monitoring of pasture conditions, maintaining proper stocking rates, and rotational grazing help to maintain pasture seeding and to control erosion. Plants on these soils may be subject to moisture stress during prolonged dry periods. Returning crop residue and adding organic matter to the soil help to improve water holding capacity.

Potential productivity for white pine on this soil is moderate or high. Slope is a moderate limitation for equipment use.

Slope is a moderate limitation to use of this soil as a site for dwellings with basements. Designing the structure to conform to slope and land shaping and grading help to overcome strongly sloping slopes. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Excessive slope is a moderate limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour and land shaping and grading help to overcome this limitation.

Very rapid permeability in the substratum is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. An alternative is to use, if possible, included or nearby soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 3e. The forestland ordination symbol is 8A.

Rd—Redwater fine sandy loam

This is a deep, somewhat poorly drained soil formed in recent alluvium on flood plains along streams where bedrock controls the stream gradient. Slopes range from 0 to 3 percent. Most areas are long and narrow and parallel to streams or are irregular in shape, and range from 6 to 20 acres.

Typical sequence, depth, and composition of the layers of the Redwater soil—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 30 inches, dark brown fine sandy loam
30 to 38 inches, very dark grayish brown and dark brown fine sandy loam

Substratum:
38 to 50 inches, grayish brown and light brownish gray fine sandy loam

Bedrock:
50 inches, hard limestone bedrock

Included with this soil in mapping are small areas of Fluvaquents and Udifluvents at the edge of streams. Also included are small areas of Borosaprists and Fluvaquents in narrow troughs or slackwater areas; finer textured Cornish soils where silt and very fine sand dominate the alluvium; and some places, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Redwater soil—

Permeability: Moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Strongly acid to slightly acid in the surface layer and slightly acid or neutral in the subsoil and the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 0.5 to 1.5 feet from November to May
Depth to bedrock: 40 to 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: Frequent

Most areas of this soil are used for hay and pasture. Some areas are woodland or brushland. A few areas are in cultivated crops.

This soil is poorly suited to cultivated crops because of flooding and the seasonal high water table. Flooding or wet soil conditions frequently delay planting. Some fields are littered with flotsam, stones, or trash left from stranded ice. Cover crops or sod crops in the cropping system help to protect the surface from scouring during flooding. Tree borders and green strips along streams help to stabilize streambanks.

This soil is fairly suited to hay and pasture. Grazing when this soil is wet causes surface compaction. Restricting stock from pasture in early spring and during other wet periods helps to prevent surface compaction and to maintain good soil tilth. The seasonal high water table limits root growth of some legumes. Installing subsurface drainage and selecting naturally shallow-rooted, water-tolerant grasses and legumes help to increase productivity of pasture and hay. Protecting streambanks with fences and tree borders helps to control streambank erosion.

Potential productivity for red maple on this soil is moderate. Flooding and the seasonal high water table can impede heavy equipment use in spring and during other wet periods.

This soil is poorly suited to dwellings with basements. Flooding and wetness are severe limitations to use of this soil as a site for dwellings with basements. An alternative is to use nearby, better-suited soils, such as Adams soils.

Wetness, flooding, and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness and flooding. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

This soil is poorly suited to use as a site for septic tank absorption fields because of flooding, wetness, and rapid permeability in the substratum. In general, an alternative is to place the absorption field on better suited soils, such as nearby Adams soils, that have fewer limitations to this use.

The capability subclass is 3w. The forestland ordination symbol is 3W.

RoA—Roundabout silt loam, 0 to 2 percent slopes

This is a very deep, nearly level, poorly drained soil formed in deposits of silt and very fine sand in low positions in level areas of lake plains or on floors of small valleys surrounded by bedrock-controlled uplands. Most areas of this soil are irregular in shape.

Areas are 6 to 30 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers of the Roundabout soil—

Surface layer:
0 to 10 inches, very dark grayish brown silt loam

Subsoil:
10 to 17 inches, brown silt loam
17 to 31 inches, grayish brown silt loam

Substratum:
31 to 55 inches, light brownish gray silt loam
55 to 72 inches, grayish brown silt loam

Included with this soil in mapping are small areas of finer textured, poorly drained and very poorly drained Wegatchie soils in depressions and along streams. Also included are moderately well drained Nicholville soils on convex knolls and in other high areas of the map unit, small areas of sandier textured Croghan and Naumburg soils in sand deposits, and areas of finer textured Hailesboro soils where the clay content in the subsoil or the substratum is higher than that in the Roundabout soil. Also included, on knolls or hills, are small areas of loamy, moderately well drained Kalurah soils or well drained Pyrities soils that have more rock fragments. Also included are areas of shallow Insula soils on small hills. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Roundabout soil—

Permeability: Moderate or moderately slow in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Very strongly acid to slightly acid in the surface layer and the subsoil, moderately acid to neutral in the substratum within a depth of 40 inches, and moderately acid to moderately alkaline below that depth
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 1 foot from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding Hazard: None

Most areas of this soil are used for hay or pasture. Some areas are used for cultivated crops or are wooded. Some farmed areas are idle and are reverting to brush.

This soil is poorly suited to cultivated crops. The seasonal high water table is a severe limitation for growth of most crops and hinders timely planting and harvesting operations. In some areas a combination of subsurface drainage and diversion ditches to intercept runoff from adjacent higher areas is needed for good yields of cultivated crops. Applying lime and fertilizer according to soil tests helps to increase productivity.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the root zone of some plants, especially legumes. Selecting shallow-rooted, water-tolerant grasses and legumes helps to improve productivity. Grazing the soil when wet can destroy the soil tilth. Restricting grazing during wet periods and rotational grazing help to prevent surface compaction and loss of soil tilth. Surface and subsurface drainage helps to lower the water table enough to permit growth of deeper-rooted forage species and to extend the season when the soil is dry enough to graze without destroying soil tilth.

Potential productivity for white pine on this soil is low or moderate. Wetness hinders equipment use in spring and during other wet periods. Logging is feasible during drier periods or in winter when the ground is frozen. Planting seedlings when the soil is no longer wet but still moist helps to increase the rate of seedling survival. The windthrow hazard is moderate because the water table limits root development. Minimizing thinning and planting shallow-rooted varieties help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Placing drains by footings and shaping the land to move surface water away from the dwelling help to lower the water table. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads and streets on raised fill material and installing a drainage system help to reduce wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for permeability. In some areas a septic system with a special design is needed. An alternative is to place the filter field on included or nearby soils, such as Pyrities soils, that are better suited to this use.

The capability subclass is 4w. The forestland ordination symbol is 9W.

RoB—Roundabout silt loam, 2 to 6 percent slopes

This is a very deep, gently sloping, poorly drained soil formed in deposits of silt and very fine sand on footslopes and terraces of lake plains or on gently dissected floors of small valleys surrounded by bedrock-controlled uplands. Most areas of this soil are irregular in shape. Areas are 6 to 30 acres, but the range is 6 to more than 100 acres.

Typical sequence, depth, and composition of the layers of the Roundabout soil—

Surface layer:
0 to 10 inches, very dark grayish brown silt loam

Subsoil:
10 to 17 inches, brown silt loam
17 to 31 inches, grayish brown silt loam

Substratum:
31 to 55 inches, light brownish gray silt loam
55 to 72 inches, grayish brown silt loam

Included with this soil in mapping are small areas of finer textured, poorly drained and very poorly drained Wegatchie soils in depressions and along streams. Also included are moderately well drained Nicholville soils on convex knolls and in other high areas of the map unit, small areas of sandier textured Croghan and Naumburg soils in sand deposits, and areas of finer textured Hailesboro soils where the clay content in the subsoil or the substratum is higher than that in the Roundabout soil. Also included, on knolls or hills, are small areas of loamy, moderately well drained Kalurah soils and well drained Pyrities soils that both have more rock fragments than those in the Roundabout soil. Also included are areas of shallow Insula soils on small hills and some areas of soils that are dominantly very fine sand in the subsoil. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Roundabout soil—

Permeability: Moderate or moderately slow in the surface layer and subsoil and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Very strongly acid to slightly acid in the surface layer and the subsoil, moderately acid to neutral in the substratum within a depth of 40 inches, and moderately acid to moderately alkaline below that depth
Erosion hazard: Moderate
Depth to water table: From the surface to a depth of 1 foot from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hay or pasture. Some places are used for cultivated crops or are wooded. Some farmed areas are idle and are reverting to brush.

This soil is poorly suited to cultivated crops. The seasonal high water table is a severe limitation to growth of most crops; it hinders timely planting and harvesting operations. Erosion is a hazard on longer, steeper slopes. In some areas a combination of subsurface drainage and diversion ditches to intercept runoff from adjacent higher areas is needed for satisfactory yields of cultivated crops. Conservation tillage and crop rotations that emphasize sod crops help to control erosion. Applying lime and fertilizer according to soil tests helps to increase productivity.

This soil is fairly suited to hay and pasture. The seasonal high water table restricts the root zone of some plants, especially legumes. Draining the soil with tile and open ditches help to improve productivity. Grazing when the soil is wet causes surface compaction and destroys plants. Overgrazing can cause loss of pasture seeding and excessive erosion. Close monitoring of pasture conditions, managing stocking rates, and pasture rotations help to sustain pasture seedlings and to control erosion. Deferred grazing during wet periods; regular, adequate applications of lime and fertilizer; annual mowing; and weed and brush control help to maintain soil tilth and to increase quantity and quality of feed and forage.

Potential productivity for white pine on this soil is moderate. Wetness hinders equipment use in spring and during other wet periods. Logging during drier periods or in winter when the ground is frozen allows use of equipment. Planting seedlings when the soil is no longer wet but still moist helps to increase the rate of seedling survival. The water table limits root development and the windthrow hazard is moderate. Minimizing thinning and planting shallow-rooted species help to minimize windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Placing drains by footings and shaping the land to move surface water away from the dwelling help to lower the water table. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads and streets on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for slow permeability. In some areas a septic system with a special design is needed on this soil. An alternative is to place the filter field on included or nearby soils, such as Pyrities soils, that are better suited to this use.

The capability subclass is 4w. The forestland ordination symbol is 9W.

Rt—Runeberg loam

This is a very deep, poorly drained, nearly level soil formed in glacial till deposits in low positions on till plains and in wet pockets between hills and ridges on uplands. The soil is nearly level and generally is on slightly concave landforms. Slopes range from 0 to 2 percent. Most areas are irregular in shape and 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Runeberg soil—

Surface layer:
0 to 10 inches, very dark brown loam

Subsoil:
10 to 24 inches, grayish brown sandy loam

Substratum:
24 to 72 inches, grayish brown sandy loam

Included with this unit in mapping are small areas of finer textured Adjidaumo and Wegatchie soils where marine or lacustrine silts and clays were deposited in stillwater. Also included are small areas where excessive stones are on the surface, areas of Dorval muck where organic material has accumulated, and areas of somewhat poorly drained Malone soils in slightly higher topographic positions. Also included are well drained Pyrities soils and moderately well drained Kalurah soils on tops and sides of more prominent ridges and hills and areas of sandy Deford and Naumburg soils on broad terraces where flowing water deposited sands. Inclusions range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Runeburg soil—

Permeability: Moderate in the surface layer, moderately slow in the subsoil, and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid or neutral in the surface layer and the subsoil and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 0.5 to 1.0 foot from November to July
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland, mainly of low-quality water-tolerant species. A few areas are used for pasture. Some cleared areas are reverting to brush.

This soil is poorly suited to cultivated crops. The main limitation is the seasonal high water table, which delays planting, interferes with harvesting, and limits the growth of roots. Artificial drainage is needed in managing this soil. Adding lime and fertilizer according to soil tests helps to increase productivity.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the root zone of some plants, especially legumes. Selecting shallow-rooted, water-tolerant forage species helps to improve productivity. Grazing the soil when wet could cause surface compaction and destruction of soil tilth. Restricted grazing during wet periods and rotational grazing help to prevent surface compaction and loss of tilth. Surface and subsurface drainage help to lower the water table enough to permit growth of deeper-rooted forage species and to extend the season when the soil is dry enough to graze without destroying tilth.

Potential productivity for red maple on this soil is low or moderate. The soil is usually too wet for machine planting of seedlings. Operating planting and harvesting equipment on saturated soils causes surface compaction. Logging in late summer when the soil is relatively dry helps to reduce problems from equipment use. The soil is saturated much of the year, and the seedling mortality rate is severe. Planting seedlings in midsummer so plants establish a root system in relatively dry soil conditions helps to improve the seedling survival rate. The seasonal high water table limits the root zone of trees, and increases the windthrow hazard, especially near open areas.

Selecting shallow-rooted species and avoiding clearcutting help to reduce windthrow.

The seasonal high water table is a severe limitation to use of this soil as a site for dwellings with basements. Placing drains by footings and shaping the land to move surface water away from dwellings help to lower the water table. Adequately sealing foundations helps to prevent wet basements. A general alternative is to build dwellings on better suited soils.

The seasonal high water table and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow permeability are severe limitations to use of this soil as a site for septic tank absorption fields. Placing a drainage system around the filter field and installing diversions to intercept water from higher areas help to lower the water table. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the slow permeability. In some areas a specially designed or unconventional system is needed to overcome these limitations. An alternative is to select nearby or included soils, such as Pyrities soils, that are better suited to this use.

The capability subclass is 5w. The forestland ordination symbol is 5W.

Ru—Runeberg loam, very stony

This is a very deep, poorly drained and very poorly drained, nearly level soil formed in glacial till deposits in low positions on till plains and in wet pockets between hills and ridges on uplands. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. The soil is nearly level and generally on slightly concave landforms. Slopes range from 0 to 2 percent. Most areas are irregular in shape and 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Runeberg soil—

Surface layer:
0 to 10 inches, very dark brown loam

Subsoil:
10 to 24 inches, grayish brown sandy loam

Substratum:
24 to 72 inches, grayish brown sandy loam

Included with this soil in mapping are small areas of finer textured Adjidaumo and Wegatchie soils where marine or lacustrine silts and clays were deposited in stillwater. Also included are areas of Dorval muck where organic material has accumulated, areas of somewhat poorly drained Malone soils in slightly higher topographic positions, and well drained Pyrities soils and moderately well drained Kalurah soils on tops and sides of more prominent ridges and hills. Areas of Deford and Naumburg soils are included on terraces where flowing water deposited sands. Also included are a few areas that are extremely stony. Inclusions range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Runeberg soil—

Permeability: Moderate in the surface layer, moderately slow in the subsoil, and moderately slow or slow in the substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Slightly acid or neutral in the surface layer and the subsoil and slightly alkaline or moderately alkaline in the substratum
Depth to water table: At a depth of 0.5 to 1.0 feet from November to July
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland. Some cleared areas are reverting to brush.

This soil is poorly suited to cultivated crops. Numerous surface stones and soil wetness are the main limitations. Stones prohibit use of most farm equipment. The surface layer is saturated throughout spring, and cultivation and planting are very difficult. The seasonal high water table is a severe restriction to the rooting depth of plants, and crops grow poorly at best.

This soil is poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing diminishes quantity and quality of forage.

Potential productivity for red maple on this soil is low or moderate. In some areas numerous stones on the surface hinder machine planting. Operating planting and harvesting equipment on saturated soils causes surface compaction. Logging in late summer when the soil is relatively dry reduces problems from equipment use. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable species help to reduce the seedling mortality rate. The water table limits root development and the windthrow hazard is moderate. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is a severe limitation to use of this soil as a site for dwellings with basements. Placing drains by footings and shaping the land to move surface water away from the dwelling help to lower the water table. Adequately sealing foundations helps to prevent wet basements. A general alternative is to build dwellings on better suited soils.

The seasonal high water table and potential for frost action are severe limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to lower the water table. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and slow permeability are severe limitations to use of this soil as a site for septic tank absorption fields. Placing a drainage system around the filter field and installing diversions to intercept water from higher areas help to lower the water table. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for slow permeability. In some areas a specially designed or other alternate system is needed to overcome wetness and permeability. An alternative is to place the absorption field on nearby or included soils, such as Pyrities soils, that are better suited to this use.

The capability subclass is 5s. The forestland ordination symbol is 3W.

SaB—Salmon very fine sandy loam, 2 to 6 percent slopes

This is a very deep, gently sloping, well drained soil on benches on dissected lake plains and in small valleys surrounded by bedrock-controlled uplands. Areas of this soil are narrow and elongated or are irregular in shape and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Salmon soil—

Surface layer:
0 to 6 inches, dark grayish brown very fine sandy loam

Subsurface layer:
6 to 13 inches, pinkish gray very fine sandy loam

Subsoil:
13 to 19 inches, strong brown very fine sandy loam
19 to 30 inches, yellowish brown silt loam

Substratum:
30 to 72 inches, yellowish brown silt loam

Included with this soil in mapping are small areas of sandy Adams soils on tops of knolls. Also included are areas of moderately well drained Nicholville soils on footslopes of knolls and valley sides and poorly drained and somewhat poorly drained Roundabout soils in some low-lying areas. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Salmon soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. A few areas are wooded.

This soil is well suited to cultivated crops. Erosion is a severe hazard on longer slopes. Conservation measures, such as crossslope tillage, stripcropping, crop rotations that stress sod crops, and conservation tillage, help to control erosion and to maintain or restore tilth. Low soil reaction limits nutrients available to plants; adding lime helps to improve soil reaction. Adding fertilizer and lime according to soil tests helps to increase productivity.

This soil is well suited to hay and pasture. Restricting livestock from pasture in early spring and during other wet periods helps to maintain good soil tilth. Low soil reaction limits adaptability and productivity of plant species; adding lime according to soil tests helps to improve productivity. Overgrazing can diminish desirable plant species and can cause a severe erosion hazard on longer, steeper slopes. Proper stocking rates, rotational grazing, yearly mowing, and adding lime and fertilizer help to increase quantity and quality of forage.

Potential productivity for sugar maple on this soil is high. There are no limitations to woodland use and management.

There are no limitations to use of this soil as a site for dwellings with basements.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing a coarser subgrade helps to prevent frost action from heaving and buckling pavement.

Moderate permeability that results in a slow percolation rate is the main limitation to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the moderate permeability. Some areas where the substratum below a depth of 3 feet consists mainly of very fine sand and fine sand are suited to this use.

The capability subclass is 2e. The forestland ordination symbol is 3A.

SaC—Salmon very fine sandy loam, rolling

This is a very deep, rolling, well drained soil on hummocky benches on dissected lake plains and in small valleys surrounded by bedrock-controlled uplands. Areas of this soil are narrow and elongated or are irregular in shape and are less than 20 acres, but the range is 6 to 50 acres. Slopes are complex and range from 5 to 15 percent.

Typical sequence, depth, and composition of the layers of the Salmon soil—

Surface layer:
0 to 6 inches, dark grayish brown very fine sandy loam

Subsurface layer:
6 to 13 inches, pinkish gray very fine sandy loam

Subsoil:
13 to 19 inches, strong brown very fine sandy loam
19 to 30 inches, yellowish brown silt loam

Substratum:
30 to 72 inches, yellowish brown silt loam

Included with this soil in mapping are small areas of sandy Adams soils on tops of knolls. Also included are areas of moderately well drained Nicholville soils on footslopes of knolls and valley sides, areas of poorly drained and somewhat poorly drained Roundabout soils in low-lying pockets, and small areas that have steeper slopes. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Salmon soil—

Permeability: Moderate throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are in hay or pasture. Some areas are used for cultivated crops. A few areas are wooded.

This soil is poorly suited to cultivated crops because erosion is a severe hazard and the topography is complex. Conservation measures, such as crop rotations that stress sod crops and conservation tillage, help to control erosion and to maintain or restore tilth. In most areas some erosion control practices, such as contour tillage, stripcropping, and terraces, are impractical because of the complex, choppy topography and included, steeper sloping areas. Adding lime and fertilizer according to soil tests helps to raise soil reaction and to increase fertility.

This soil is well suited to hay and pasture. Overgrazing can diminish desirable plant species and can cause a severe erosion hazard. Rotational grazing and proper stocking rates help to sustain quantity and quality of forage and to control erosion. Reseeding using conservation tillage practices also helps to control erosion. Restricting livestock from pasture in early spring and during other wet periods helps to maintain good soil tilth. Low soil reaction limits adaptable plant species and productivity. Adding lime and fertilizer according to soil tests helps to increase soil reaction and fertility.

Potential productivity for sugar maple on this soil is high. Erosion is a hazard. Laying out logging roads on the contour, building water bars to protect roads when not in use, and routing roads and skid trails to less sloping areas help to control erosion.

Excessive slope is a moderate limitation to use of this soil as a site for dwellings with basements. Dwellings can be designed to conform to the natural slope. Land shaping can provide a more accommodating building surface. Erosion is a hazard when vegetation is removed from this soil. Controlling runoff during construction and restoring vegetative cover as soon as possible help to control erosion.

Potential for frost action is the main limitation to use of this soil as a site for local roads and streets. Providing coarser subgrade and revegetating roadsides and cutbanks soon after construction help to prevent frost action from heaving and buckling pavement and sloughing cutbanks.

Moderate permeability and strongly sloping slopes are the main limitations to use of this soil as a site for septic tank absorption fields. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the moderate permeability. Laying out absorption lines on the contour or using serial distribution helps to ensure uniform distribution of effluent throughout the absorption field; however, neither practice is practical on complex topography.

The capability subclass is 3e. The forestland ordination symbol is 3R.

Se—Searsport muck

This is a very deep, very poorly drained, nearly level soil formed in deltaic or beach deposits in low positions on glacial age deltas or beach plains. The soil is nearly level and generally is on slightly concave landforms. Slopes range from 0 to 3 percent. Most areas of this soil are irregular in shape and are 10 to 50 acres, but the range is 6 to 200 acres.

Typical sequence, depth, and composition of the layers of the Searsport soil—

Surface layer:
0 to 6 inches black muck
6 to 10 inches, black mucky fine sand

Subsurface layer:
10 to 12 inches, dark gray loamy fine sand
12 to 22 inches, gray loamy sand

Substratum:
22 to 34 inches, grayish brown loamy fine sand
34 to 72 inches, grayish brown, stratified fine sand, gravely sand, and loamy sand

Included with this soil in mapping are small areas of poorly drained and somewhat poorly drained Roundabout soils where lacustrine silts were deposited in stillwater. Also included are areas of somewhat excessively drained and excessively drained Adams soils, moderately drained Croghan soils, and somewhat poorly drained and poorly drained Naumburg soils on ridges and knolls and in slightly higher areas. Also included are some small areas of well drained Grenville and Potsdam soils on small hills and ridges. Inclusions range to 6 acres and make up about 20 percent of this map unit.

Important properties of the Searsport soil—

Permeability: Moderately slow to moderately rapid in the organic surface layer and rapid or very rapid below
Available water capacity (average for a 40-inch soil profile): Very low to moderate
Soil reaction: Very strongly acid to slightly acid throughout
Erosion hazard: Low
Depth to water table: From 1 foot above the surface to a depth of 1 foot below the surface from September to July
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of this soil are in low-quality woodland. A few areas are used for pasture. Some cleared areas are reverting to brush.

This soil is poorly suited to cultivated crops. Wetness is the main limitation. The surface layer is saturated throughout spring, and cultivation and planting are very difficult. The seasonal high water table also severely restricts the rooting depth of plants, and crops grow either poorly or not at all. Artificial drainage will improve productivity and ease of cultivation of this soil. However, the soil is in low positions on the landscape and draining the soil may be difficult because natural outlets are difficult to find.

This soil is poorly suited to hay and pasture. The surface is saturated for much of the growing season, and in most years stands of hay are not productive. Drainage can improve productivity of this soil. However, the soil is in low positions on the landscape and in places natural outlets are not available. Grazing when the soil is wet causes surface compaction. Restricting stock from pasture when the soil is saturated helps to maintain good tilth in the surface layer. Fertilizing and mowing help to improve quality of forage.

Potential productivity for white pine on this soil is low. The seasonal high water table limits heavy equipment use in spring and during other wet periods. Logging when the surface is dry or in winter when it is frozen reduces the problems from heavy equipment use. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to reduce the seedling mortality rate. The water table limits root development and the windthrow hazard is moderate. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

This soil is unsuitable to use as a site for dwellings with basements because of ponding. Generally, an alternative is to build dwellings on nearby soils, such as excessively drained or somewhat excessively drained Adams soils, that are better suited to this use.

The seasonal high water table is a severe limitation to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing roadside ditches and culverts where needed help to overcome the water table.

This soil is unsuitable to use as a site for septic tank absorption fields. The seasonal high water table and excessive permeability are the main limitations. In some places a specially designed system incorporating alternative technologies is needed to overcome these limitations. An alternative is to select included or nearby soils, such as Grenville soils, that are better suited to this use.

The capability subclass is 5w. The forestland ordination symbol is 6W.

Sg—Stockholm loamy fine sand

This is a very deep, nearly level, poorly drained soil formed in a sandy mantle overlying clayey sediments in low positions on lake and marine plains and at the base of ridges and gentle rises where water-deposited materials occupy the lower parts of glacial till plains. Most areas of this soil are broad and irregular in shape. Areas are 6 to 50 acres, but the range is 6 to more than 100 acres. Slopes are simple and range from 0 to 3 percent.

Typical sequence, depth, and composition of the layers of the Stockholm soil—

Surface layer:
0 to 10 inches, dark brown loamy fine sand

Subsoil:
10 to 20 inches, dark reddish brown and yellowish brown loamy fine sand and fine sand
20 to 23 inches, light brownish gray fine sand
23 to 30 inches, gray clay

Substratum:
30 to 58 inches, gray clay
58 to 72 inches, dark brown clay loam

Included with this soil in mapping are small areas of very poorly drained, mucky Deford, Munuscong, and Searsport soils in low pockets and along streams. Also included are moderately well drained Flackville soils on convex knolls and in other high areas of the map unit; areas of Naumburg soils where clayey layers are more than 40 inches deep; and areas of fine textured Adjidaumo soils, which do not have a sandy mantle. Also included are small areas of loamy Hogansburg, Kalurah, and Malone soils on small hills or knolls. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Stockholm soil—

Permeability: Moderately rapid in the surface layer and upper, sandy layers of the subsoil and very slow in the lower, clayey layer of the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer, strongly acid to slightly acid in the subsoil, and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Perched above the clayey substratum at a depth of 0 to 1.0 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low in the surface layer and the sandy layers in the subsoil and moderate in the clayey layer of the subsoil and the substratum
Flooding hazard: None

Most areas of this soil are used for hay or pasture. Some areas are wooded or cultivated. Some cleared areas are idle and are reverting to brush.

This soil is poorly suited to cultivated crops. The seasonal high water table and low natural fertility are the main limitations. The water table interferes with timely planting and harvesting and limits root development needed to sustain plant growth. Artificial drainage helps to lower the seasonal high water table and to improve productivity. Adding lime and fertilizer according to soil tests helps to improve fertility and to raise soil reaction. Applying lime and fertilizer in small doses at regular intervals rather than all at once helps to prevent leaching in the moderately permeable soil layers and to reduce nutrient loss.

This soil is fairly suited to hay and pasture. The seasonal high water table restricts the rooting depth of some plants, especially legumes. Draining the soil with tile and open ditches and selecting shallow-rooted, water-tolerant grasses help to improve productivity. Applying lime and fertilizer help to raise reaction and to improve fertility. Applying supplements in small increments at regular intervals helps to prevent leaching in permeable, sandy layers and to reduce nutrient loss. Overgrazing diminishes pasture seedlings. Rotational grazing, restricting grazing during wet periods, and yearly mowing help to enhance quality and quantity of feed and forage.

Potential productivity for red maple on this soil is moderate. The seasonal high water table limits use of heavy equipment in spring and during other wet periods. Logging when the surface is dry or in winter when the ground is frozen reduces the problems from heavy equipment use. In most years the surface is saturated in spring and the seedling mortality rate can be excessive. Planting seedlings when the soil is no longer wet but still moist will increase the seedling survival rate. The windthrow hazard is moderate because the water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. The seedling mortality rate can be excessive because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable species help to reduce the seedling mortality rate.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Placing drains by footings helps to lower the water table. Adequately sealing foundations helps to prevent wet basements. A possible alternative is to build dwellings on included or nearby soils, such as moderately well drained Hogansburg soils, that are better suited to this use.

The seasonal high water table and low strength are the main limitations to use of this soil as a site for local roads and streets. Constructing roads and streets on raised fill material and installing a drainage system help to lower the water table. Providing suitable base material and using special construction for adequate support help to increase the strength and stability of this soil.

The seasonal high water table and very slow permeability are the main limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for very slow permeability. In some areas a specially designed system is needed on this soil. An alternative is to place the absorption field on included or nearby soils, such as Kalurah soils, that are better suited to this use.

The capability subclass is 4w. The forestland ordination symbol is 3W.

ShB—Summerville fine sandy loam, 0 to 8 percent slopes

This is a shallow, nearly level to gently sloping, well drained soil on slight knolls and glacial till plains on a high-lime bedrock controlled landscape. Most areas of this soil are irregular in shape and range from 6 to 20 acres.

Typical sequence, depth, and composition of the layers of the Summerville soil—

Surface layer:
0 to 6 inches, dark yellowish brown fine sandy loam

Subsoil:
6 to 10 inches, strong brown fine sandy loam
10 to 12 inches, dark brown fine sandy loam

Bedrock:
12 inches, dolomitic limestone

Included with this soil in mapping are small areas of very shallow Gouverneur soils adjacent to rock outcrops. Also included are small areas of very deep Grenville and Pyrities soils on side slopes and backslopes of hills, areas of moderately deep Nehasne soils on footslopes, and areas of Hannawa and Ogdensburg soils in concave areas. Also included are small areas where numerous stones are on the surface and adjacent areas of acidic rock outcrops, areas of very shallow, acidic Quetico soils, and areas of acidic Insula soils. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Summerville soil—

Permeability: Moderately rapid in the surface layer and moderate in the subsoil
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Slightly acid to slightly alkaline in the surface layer and slightly acid to moderately alkaline in the subsoil
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are used for pasture or hay. Other areas are woodland or brush.

This soil is poorly suited to cultivated crops because of shallow depth to bedrock and low available water capacity. Productivity on this soil depends on erosion control because loss of any of the thin soil mantle over bedrock is critical. The soil has very little water available to plants during much of the growing season; shallow depth to bedrock impairs growth of most crops. Returning crop residue to the soil and using a crop rotation that emphasizes sod crops help to improve water holding capacity and to improve or restore soil tilth in the surface layer.

This soil is poorly suited to hay and pasture. Shallow depth to bedrock restricts the root zone of many plants. Selecting naturally shallow-rooted legumes and grasses help to improve the productivity of stands. The soil tends to be droughty in summer. Adding crop residue and other organic matter to the soil helps to increase water holding capacity and to improve or restore soil tilth. Overgrazing can diminish desired plants and can cause an excessive erosion hazard on longer, steeper slopes. Close management of pasture conditions, rotational grazing, and proper stocking rates help to sustain forage plants and to control erosion.

Potential productivity for sugar maple on this soil is low. Shallow depth to bedrock and included areas of excess stones and rock outcrops limit machine planting of seedlings. The seedling mortality rate can be excessive because of droughtiness. Timely planting when the soil is moist helps to reduce the seedling mortality rate. The water table limits root development and the windthrow hazard is moderate. Minimizing thinning and planting shallow-rooted species help to minimize the windthrow hazard.

Depth to bedrock is the main limitation to use of this soil as a site for dwellings with basements. Building above bedrock and landscaping with additional fill help to overcome this limitation. A possible alternative is to build on included or nearby, deep soils.

Shallow depth to bedrock is a severe limitation to use of this soil as a site for local roads and streets. Planning grades and routes of roads is needed to avoid rock outcrops. Some areas need to be blasted.

Depth to bedrock is a severe limitation to use of this soil as a site for septic tank absorption fields. The layer of soil above bedrock is thin, and effluent seeping to the surface or percolating downward through highly fissured bedrock and contaminating ground water is a hazard. Some areas require a specially designed mound or other system. A possible alternative is to place the absorption field on included or nearby soils, such as very deep Grenville soils, that are better suited to this use.

The capability subclass is 3s. The forestland ordination symbol is 2D.

SkB—Summerville-Gouverneur complex, 0 to 8 percent slopes, rocky

This map unit consists of nearly level and gently sloping, shallow and very shallow soils on slight knolls and on glacial till plains on a high-lime, bedrock-controlled landscape. Rock outcrops cover from 0.1 to 2 percent of the surface, generally in higher positions on the landscape. Areas are either irregular in shape or are elongated with a northeast-southwest orientation. They are 6 to 50 acres, but the range is 6 to more than 100 acres. The unit is about 45 percent shallow, well drained Summerville soil; 35 percent very shallow, excessively drained and somewhat excessively drained Gouverneur soil; and 20 percent other soils and rock outcrops. The Summerville and Gouverneur soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Summerville soil—

Surface layer:
0 to 6 inches, dark yellowish brown fine sandy loam

Subsoil:
6 to 10 inches, strong brown fine sandy loam
10 to 12 inches, dark brown fine sandy loam

Bedrock:
12 inches, dolomitic limestone

Typical sequence, depth, and composition of the Gouverneur soil—

Surface layer:
0 to 7 inches, very dark gray channery loam

Subsoil layer:
7 to 9 inches, dark brown channery fine sandy loam

Bedrock:
9 inches, dolomitic sandstone bedrock

Included with this soil in mapping are small areas of moderately deep Nehasne soils and very deep Grenville soils on broad backslopes. Also included are finer textured Muskellunge, Matoon, and Adjidaumo soils in small troughs where silty and clayey sediments accumulated in stillwater; a few concave areas of somewhat poorly drained Ogdensburg soils and poorly drained Hannawa soils; and areas of more acid, very shallow Quetico soils and more acid, shallow Insula soils. Also included are small areas of steeper sloping soils, mainly on short scarps, many of which spot symbols mark on soil maps. Included areas range to 6 acres and make up about 19 percent of this unit.

Important properties of the Summerville soil—

Permeability: Moderately rapid in the surface layer and moderate in the subsoil
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Slightly acid to slightly alkaline in the surface layer and slightly acid to moderately alkaline in the subsoil
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Gouverneur soil—

Permeability: Moderate throughout

Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Moderately acid to slightly alkaline throughout
Erosion Hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: 1 to 9 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding Hazard: None

Many areas of this soil are used as unimproved pasture. Some areas are used as woodland or brush.

These soils are unsuited to cultivated crops. The very shallow Gouverneur soil and rock outcrops impede use of tillage and harvesting equipment. Also, the Gouverneur and Summerville soils have very low available water capacity, and droughtiness during much of the growing season impairs the growth of most crops. In places, short bedrock escarpments limit the shape or size of fields.

These soils are poorly suited to hayland and pasture. The rock outcrops and included escarpments severely hinder the use of most farm equipment.

These soils are suited to unimproved pasture. When they are droughty in summer, pastures are sensitive to overgrazing, which can cause loss of desirable plants and excessive erosion in the more sloping areas. Proper stocking rates and brush control are management concerns.

Potential productivity for sugar maple on these soils is low. In some areas rock outcrops and included scarps impede use of planting and logging equipment. The Summerville and Gouverneur soils tend to be droughty and the seedling mortality rate is severe. Planting seedlings in spring, when the soil is still moist, helps to improve the rate of seedling survival. The windthrow hazard is severe because shallow and very shallow depth to bedrock limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow. Shallow depth to bedrock on these soils restricts root development, and windthrow is a severe hazard. Minimizing thinning and selecting naturally shallow-rooted trees help to reduce windthrow.

Depth to bedrock is the main limitation to use of these soils as a site for dwellings with basements. Building above bedrock and landscaping with additional fill help to overcome this limitation. An alternative is to build on included or nearby soils, such as deep Grenville soils, that are better suited to this use.

Shallow depth to bedrock on both the Summerville and Gouverneur soils are severe limitations to use of these soils for local roads and streets. Grades and routes for roads can be planned to avoid rock removal. In some areas blasting is needed.

This soil is unsuited to use as a site for septic tank absorption fields. The thin layer of soil above bedrock is a poor filter of effluent, which can seep to the surface or percolate downward through highly fissured bedrock and contaminate ground water. Some areas require a septic system with a special design, such as a mound system. An alternative is to select included or nearby soils, such as very deep Grenville soils, that are better suited to this use.

The capability subclass is 7s for the Summerville and Gouverneur soils. The forestland ordination symbol is 2D for the Summerville and Gouverneur soils.

SID—Summerville-Rock outcrop complex, hilly

This map unit consists of soils on complex networks of hills and ridges on marble, bedrock-controlled landscapes. In most areas the Summerville soil is on steep side slopes and tops of hills. Rock outcrop is scattered throughout this unit, but most areas are in the higher parts. Slopes are complex and range from 15 to 35 percent. Areas are generally elongated with a northeast-southwest orientation. They are 6 to 50 acres, but the range is 6 to more than 100 acres. The unit is about 40 percent shallow, well drained Summerville soil, 30 percent Rock outcrop, and 30 percent other soils. The Summerville soil and areas of Rock outcrop are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Summerville soil—

Surface layer:
0 to 6 inches, dark yellowish brown fine sandy loam

Subsoil:
6 to 10 inches, strong brown fine sandy loam
10 to 12 inches, dark brown fine sandy loam

Bedrock:
12 inches, dolomitic limestone

Rock outcrop consists mostly of marble.

Included with this soil in mapping are small areas of very shallow Gouverneur soils adjacent to rock outcrops. Also included are moderately deep Nehasne soils and very deep Grenville soils on lower side slopes; fine-textured Muskellunge, Matoon, and Adjidaumo soils in small troughs between ridges, where silty and clayey sediments accumulated in stillwater; and some areas, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Also included, scattered throughout the map unit, are small bedrock scarps; some areas of acid bedrock intermingled with the marble bedrock-controlled areas; and, near inclusions of acid bedrock, small areas of very shallow, acid Quetico soils and shallow Insula soils. Included areas range to 6 acres and make up about 30 percent of this unit.

Important properties of the Summerville soil—

Permeability: Moderately rapid in the surface layer and moderate in the subsoil
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Slightly acid to slightly alkaline in the surface layer and slightly acid to moderately alkaline in the subsoil
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland or brush. A few areas are used as unimproved pasture.

This soil is unsuited to cultivated crops. Rock outcrops and steep slopes obstruct use of tillage and harvesting equipment.

This soil is poorly suited to pasture. Uneven topography, rock outcrops, excessive slope, and included scarps and wetter soils severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on this soil is low. If the vegetative cover is removed, erosion is a hazard. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. The windthrow hazard is moderate because the water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce the windthrow hazard. On the droughty Summerville soil the seedling mortality rate is severe. Planting seedlings in spring while the soil is still moist helps to improve the seedling survival rate. The water table limits root development and the windthrow hazard is moderate. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

Excessive slope, shallow depth to bedrock on the Summerville soil, and numerous rock outcrops are severe limitations to use of this soil as a site for dwellings with basements. An alternative is to build on included soils, such as less sloping, deeper Grenville soils, that are more suitable for this use.

Shallow depth to bedrock and excessive slopes are severe limitations to use of this soil as a site for local roads and streets. Planning grades and routes of roads to avoid rock removal, land shaping and grading, and adapting road design to slope are needed. In some areas blasting is needed.

This soil is unsuited to use as a site for septic tank absorption fields because of excessive slope, shallow depth to bedrock on the Summerville soil, and areas of exposed bedrock. The septic system could be placed on inclusions of deeper soils, such as Grenville soils where slope is not excessive, that are better suited to this use.

The capability subclass is 7s for the Summerville soil and 8 for Rock outcrop. The forestland ordination symbol is 2R for the Summerville soil. Rock outcrop was not assigned a forestland ordination symbol.

SmC—Summerville-Rock outcrop-Nehasne complex, rolling

This map unit consists of soils on knolls and ridges on rolling landforms on uplands on marble bedrock-controlled landscapes. Typically, the Summerville soil is on tops and shoulders of knolls and ridges. Most rock outcrops are in higher positions, but are scattered throughout. The Nehasne soil is on side slopes. Slopes are complex and range from 5 to 15 percent. Areas of this soil are either irregular in shape or are elongated with a northeast-southwest orientation. They are 6 to 50 acres, but the range is 6 to more than 100 acres. The unit is about 35 percent shallow, well drained Summerville soil; 25 percent high-lime Rock outcrop; 20 percent moderately deep, well drained Nehasne soil; and 20 percent other soils. The Summerville soil, Rock outcrop, and the Nehasne soil are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Summerville soil—

Surface layer:
0 to 6 inches, dark yellowish brown fine sandy loam

Subsoil:
6 to 10 inches, strong brown fine sandy loam

10 to 12 inches, dark brown fine sandy loam

Bedrock:
12 inches, dolomitic limestone

Rock outcrop in this unit is mostly marble.

Typical sequence, depth, and composition of the layers of the Nehasne soil—

Surface layer:
0 to 7 inches, very dark grayish brown sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown gravelly fine sandy loam
18 to 23 inches, brown gravelly fine sandy loam
23 to 25 inches, dark brown gravelly fine sandy loam

Bedrock:
25 inches, marble

Included with these soils in mapping are small areas of very shallow Gouverneur soils near rock outcrops. Also included are areas of fine-textured Muskellunge, Matoon, and Adjidaumo soils in small troughs between ridges where silty and clayey sediments accumulated in stillwater; areas of very deep Grenville soils on side slopes; and some places, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Some small areas of acid rock outcrops are included with the high-lime Rock outcrop. Also included are small areas of acid, very shallow Quetico soils; areas of shallow Insula soils near included areas of acid bedrock; small areas of steeper soils; and small areas of bedrock escarpments. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Summerville soil—

Permeability: Moderately rapid in the surface layer and moderate in the subsoil
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Slightly acid to slightly alkaline in the surface layer and slightly acid to moderately alkaline in the subsoil
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 10 to 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Nehasne soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Moderately acid or slightly acid in the surface layer, slightly acid or neutral in the subsoil, and neutral or slightly alkaline in the substratum
Erosion hazard: Severe
Depth to water table: More than 60 inches
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of these soils are used as unimproved pasture. Other areas are used as woodland or brush.

These soils are poorly suited to cultivated crops. Rock outcrops and included bedrock escarpments limit use of tillage and harvesting equipment. Also, droughtiness on the Summerville soil during much of the growing season impairs growth of most crops.

These soils are poorly suited to pasture. The uneven topography and included scarps and wet soils severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for trees on these soils is low on the Summerville soil and moderately high on the Nehasne soil. In some areas rock outcrops limit use of planting and logging equipment. Seedling mortality is a severe hazard on the droughty Summerville soil. Planting seedlings in spring while the soil is still moist will enhance the rate of seedling survival. On the Summerville soil shallow depth to bedrock restricts root growth and windthrow is a severe hazard. Minimizing clearcutting and selecting naturally shallow-rooted trees help to reduce windthrow losses.

Depth to bedrock is the main limitation to use of these soils as a site for dwellings with basements. Building above bedrock and landscaping with additional fill are needed. An alternative is to build on deeper included or nearby soils, such as Grenville soils, that are better suited to this use.

Shallow depth to bedrock on the Summerville soil, moderate depth to bedrock on the Nehasne soil, numerous rock outcrops, and included scarps are severe limitations to use of these soils as a site for local roads and streets. An alternative is to build roads and streets on nearby or included soils, such as Grenville soils, that are better suited to this use.

These soils are poorly suited to septic tank absorption fields because of shallow depth to bedrock on the Insula soil and rock outcrops. Nearby or included deeper soils, such as Grenville soils on gentler slopes, are better suited to this use.

The capability subclass is 6s for the Summerville soil, 8 for Rock outcrop, and 6s for the Nehasne soil. The forestland ordination symbol is 2D for the Summerville soil and 3A for the Nehasne soil. Rock outcrop was not assigned a forestland ordination symbol.

SpB—Sunapee fine sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, moderately well drained soil on slightly convex tops, shoulders, and side slopes of ridges and hills. Most areas of this soil are elliptical and 6 to 20 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Sunapee soil—

Surface layer:
0 to 1 inch, black moderately decomposed forest litter
1 to 4 inches, black fine sandy loam

Subsoil:
4 to 13 inches, dark reddish brown fine sandy loam
13 to 17 inches, reddish brown fine sandy loam
17 to 23 inches, dark yellowish brown fine sandy loam

Substratum:
23 to 72 inches, light brownish gray fine sandy loam

Included with this soil in mapping are small areas of poorly drained Lyme soils in depressions along drainageways. Also included are well drained Berkshire soils on knolls and in other high areas; areas of moderately deep Tunbridge soils and shallow Lyman soils where depth to bedrock is less than 40 inches; and areas of Lyman and Tunbridge soils near small, included areas of rock outcrops. Also included are somewhat excessively drained and excessively drained, sandy Adams soils and excessively drained, gravelly Colton soils on small knolls or ridges. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Sunapee soil—

Permeability: Moderate in the mineral part of the surface layer and subsoil and moderate or moderately rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to strongly acid in the surface layer and the subsoil and extremely acid to moderately acid in the substratum
Erosion hazard: Moderate
Depth to water table: At a depth of 1.5 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are woodland. Some areas are in pasture. A small acreage is used for cultivated crops.

This soil is suited to crops. Low natural fertility, low soil reaction, and the seasonal high water table are limitations. Erosion is a moderate hazard. Adding lime and fertilizer according to soil tests helps to improve fertility and soil reaction. In some years the seasonal high water table delays plowing and planting in spring. Draining included wet spots facilitates early tillage and late harvest operations. Erosion is a hazard on longer, steeper slopes. Crop rotations that emphasize sod crops, conservation tillage, contour plowing, and stripcropping help to control erosion.

This soil is well suited to use as hayland and pasture. The seasonal high water table, low natural fertility, and low reaction are the main limitations. Grazing the soil when wet causes surface compaction and loss of soil tilth. Restricting stock from pasture in early spring and during other wet periods helps to prevent surface compaction and to maintain good soil tilth. Overgrazing can diminish desirable plants and can cause an erosion hazard on longer, steeper slopes. Proper stocking rates, rotational grazing, and yearly mowing help to maintain quantity and quality of forage and to control erosion. Adding lime and fertilizer according to soil tests helps to raise soil reaction and to improve fertility.

Potential productivity for sugar maple on this soil is high. Mechanical or chemical site preparation can reduce plant competition on tree plantations. There are few limitations to planting, harvesting, or managing woodlots on this soil.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Installing drains by footings helps to reduce the water table. Adequately sealing foundations helps to prevent wet basements. Erosion is a hazard, especially on longer, steeper slopes. Minimizing disturbance of vegetation on construction sites and revegetating disturbed areas as soon as possible help to control erosion.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material and constructing ditches and road culverts to improve soil drainage near roads help to prevent the seasonal high water table and frost action from buckling, slumping, and heaving pavement.

The seasonal high water table is the main limitation to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to lower the water table. An alternative is to place the absorption field on included or nearby soils, such as Berkshire soils, that are not as wet as the Sunapee soil.

The capability subclass is 2w. The forestland ordination symbol is 3A.

SsB—Sunapee and Berkshire soils, 3 to 8 percent slopes, very bouldery

This map unit consists of very deep, gently sloping soils on glacial till plains. Typically, Sunapee soils are on backslopes or on benches and Berkshire soils are on shoulders, tops, and upper backslopes of hills and ridges. Boulders about 10 to 70 feet apart and stones cover 0.1 to 3 percent of the surface. Areas of these soils are irregular in shape and 20 to 60 acres, but the range is 10 to 200 acres. The unit is about 45 percent moderately well drained Sunapee soils, 25 percent well drained Berkshire soils, and 30 percent other soils. Some areas consist almost entirely of either Sunapee soils or Berkshire soils, and other areas consist of both Sunapee and Berkshire soils. Sunapee and Berkshire soils both have numerous boulders on the surface, are very similar in use and interpretation, and were not separated in mapping.

Typical sequence, depth, and composition of the layers of Sunapee soils—

Surface soil:
0 to 1 inch, black moderately decomposed forest litter
1 to 4 inches, black fine sandy loam

Subsoil:
4 to 13 inches, dark reddish brown fine sandy loam
13 to 17 inches, reddish brown fine sandy loam
17 to 23 inches, dark yellowish brown fine sandy loam
Substratum:
23 to 72 inches, light brownish gray fine sandy loam

Typical sequence, depth, and composition of the layers of Berkshire soils—

Surface layer:
0 to 7 inches, dark brown loam

Subsoil:
7 to 11 inches, brown loam
11 to 30 inches, brown gravelly loam
Substratum:
30 to 72 inches, dark yellowish brown sandy loam

Included with these soils in mapping are Potsdam and Crary soils, which have a very firm, dense substratum. Also included are small areas of very poorly drained Tughill soils and poorly drained Lyme soils in drainageways and sloughs, moderately deep Tunbridge soils on bedrock-controlled benches and knolls, and small areas of sandy Adams soils and gravelly Colton soils. Included soils range to 6 acres and make up about 30 percent of the unit.

Important properties of Sunapee soils—

Permeability: Moderate in the mineral part of the surface layer and subsoil and moderate or moderately rapid in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Extremely acid to strongly acid in the surface layer and the subsoil and extremely acid to moderately acid in the substratum
Erosion hazard: Severe
Depth to water table: At a depth of 1.5 to 3 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Important properties of Berkshire soils—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Most areas of these soils are in woodland. Some areas are in pasture.

These soils are poorly suited to cultivated crops. The main limitation is numerous boulders and stones on the surface. The cost of clearing the surface is prohibitive for most crops grown in the area.

This soil is poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction.

Overgrazing can diminish the quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for trees on these soils is high. On Sunapee soils mechanical or chemical site preparation can reduce plant competition on tree plantations.

These soils are fairly suited to use as a site for dwellings with basements. Slope and, on Sunapee soils, wetness are the main limitations. Installing foundation drains and sealing foundations help to prevent wet basements on Sunapee soils. Dwellings could be placed on the better drained Berkshire soils. Land shaping and grading help to overcome slope. Erosion is a hazard in areas cleared for construction; designing dwellings to conform to the natural slope and setting helps to minimize earthwork. Revegetating the soil during or soon after construction is completed also helps to control erosion. In some areas scattered, large boulders on the surface impede excavation.

These soils are fairly suited to use as a site for local roads and streets. Potential for frost action and, on Sunapee soils, wetness are the main limitations. Providing coarser grained subgrade or base material and constructing ditches and road culverts to drain the sites of roads and streets help to prevent wetness and frost action from buckling and heaving pavement.

Wetness on Sunapee soils is a limitation to use of these soils as a site for septic tank absorption fields. Placing a tile line around the absorption field and using such special designs as an enlarged absorption field help to reduce wetness. An alternative is to place the septic system on Berkshire soils, which are more suitable to this use.

The capability subclass is 6s for Sunapee and Berkshire soils. The forestland ordination symbol is 3A for Sunapee soils and 9A for Berkshire soils.

Sw—Swanton fine sandy loam

This is a very deep, nearly level soil formed in a loamy mantle over clayey sediments. The soil is dominantly poorly drained but is also somewhat poorly drained. It is in basins and concave areas on broad lake or marine plains. Most areas are irregular in shape. Areas are 6 to 30 acres, but the range is 6 to more than 100 acres. Slopes range from 0 to 3 percent.

Typical sequence, depth, and composition of the layers of the Swanton soil—

Surface layer:
0 to 8 inches, very dark brown fine sandy loam

Subsoil:
8 to 16 inches, olive brown fine sandy loam
16 to 26 inches, grayish brown fine sandy loam

Substratum:
26 to 41 inches, brown silty clay loam
41 to 72 inches, dark grayish brown silty clay

Included with this soil in mapping are small areas of very poorly drained Munuscong soils in low pockets and along streams. Also included are moderately well drained Elmwood soils on small terraces and convex knolls and in other high areas, areas of Mino soils where the clayey substratum is deeper than 40 inches, and some small areas of sandy Naumburg and Deford soils. Finer-textured Wegatchie and Adjidaumo soils are included in some places where the loamy mantle is absent. Also included on hills and knolls are small areas of Hogansburg, Kalurah, and Malone soils that have more rock fragments than the Swanton soil. Included areas range up to 6 acres and make up about 20 percent of this unit.

Important properties of the Swanton soil—

Permeability: Moderately rapid in the loamy surface layer and subsoil and very slow or slow in the clayey layer in the substratum
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer and the subsoil and moderately acid to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: At a depth of 0 to 1.5 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low in the coarse loamy mantle and moderate in the substratum
Flooding hazard: None

Most areas of this soil are used as hayland or pasture. Some areas are used for cultivated crops or as woodland. Some cleared areas are now idle and are reverting to brush.

This soil is poorly suited to cultivated crops. However, if intensive drainage, generally a combination of surface and subsurface drainage, is installed, the soil will be productive. Additions of fertilizer and lime according to soil tests and crop rotations that limit consecutive years of row crops are needed for this soil to be highly productive and in good tilth.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the root zone of some plants, especially legumes. Grazing the soil when wet causes surface compaction and loss of tilth. Installing artificial drainage and selecting shallow-rooted, water-tolerant species help to improve productivity. Applying lime and fertilizer according to soil tests, restricting grazing during wet periods, and yearly mowing help to prevent surface compaction, to preserve tilth, and to enhance quality and quantity of feed and forage.

Potential productivity for white pine on this soil is low. The seasonal high water table limits use of heavy equipment in spring and during other wet periods. Logging when the surface is dry or in winter when it is frozen allows heavy equipment use. The seedling mortality rate is severe because of wetness. Timely planting when the soil is moist but not wet and selecting adaptable varieties help to lower the seedling mortality rate. The water table limits root development and windthrow is a moderate hazard. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

The seasonal high water table is the main limitation to use of this soil as a site for dwellings with basements. Placing drains by footings helps to lower the water table. Adequately sealing foundations helps to prevent wet basements.

The seasonal high water table, potential for frost action, and low strength are limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Providing suitable base material and using special construction for adequate support help to increase the strength and stability of this soil.

The seasonal high water table and very slow or slow permeability in the substratum are severe limitations to use of this soil as a site for septic tank absorption fields. Installing a drainage system around the filter field helps to reduce wetness. Enlarging the absorption field and placing a wide, deep trench below the distribution lines help to compensate for the very slow or slow permeability. An alternative is to place the absorption field on nearby or included soils, such as Kalurah soils, that are more favorable to this use.

The capability subclass is 4w. The forestland ordination symbol is 7W.

TdA—Trout River loamy sand, 0 to 3 percent slopes

This is a very deep, nearly level, excessively drained soil on tops and upper side slopes of gentle ridges. Most areas of this soil are elliptical and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Trout River soil—

Surface layer:
0 to 8 inches, very dark grayish brown loamy sand

Subsoil:
8 to 14 inches, brown very gravelly loamy sand
14 to 22 inches, dark yellowish brown very gravelly loamy sand
22 to 33 inches, dark yellowish brown gravelly loamy sand

Substratum:
33 to 72 inches, pale brown very gravelly loamy sand

Included with this soil in mapping are small areas of very poorly drained and poorly drained Cook soils, somewhat poorly drained Coveytown soils, and moderately well drained Fahey soils. Also included are areas of Cook and Coveytown soils in low-lying depressions, areas of Fahey soils on benches and backslopes on slight ridges below the Trout River soil, and small areas of sandy Adams soils that have few rock fragments. Also included are areas of moderately well drained, loamy Kalurah soils and well drained, loamy Pyrities soils on some hills and knolls. Included soils range to 6 acres and make up about 25 percent of this unit.

Important properties of the Trout River soil—

Permeability: Rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid or strongly acid in the surface layer, strongly acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for pasture or hay production or have been abandoned to forest succession. Some areas are forested or cultivated.

This soil is poorly suited to cultivated crops because it is excessively droughty and has low natural fertility. Growing green manure crops and adding organic matter help to improve water holding capacity. Conservation tillage creates a mulch layer of unincorporated plant residue on the surface and helps to seal in and to conserve soil moisture. Although irrigation is needed to overcome droughtiness, generally it is not cost effective except when used on specialty crops. Adding organic matter, lime, and fertilizer helps to improve fertility. Applying fertilizer and lime in frequent, small increments rather than all at once helps to prevent substantial losses from leaching in this rapidly permeable soil.

This soil is fairly suited to hay and pasture. Soil amendments help to improve fertility and to sustain beneficial plant species. Proper stocking rates and pasture rotation help to protect desirable plant species especially vulnerable to overgrazing in summer, when water available for plants is low.

Potential productivity for white pine on this soil is low or moderate. The soil is well adapted to machine planting of seedlings. The hazard of seedling mortality is severe because the soil is droughty. Seedlings need to be planted in early spring or in late fall, when water is most available in the soil.

The Trout River soil is suited to use as a site for dwellings with basements. In some areas large stones hinder excavation and disposition of the soil.

The Trout River soil is suited to local roads and streets. In some areas large stones hinder earthwork.

Rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. In some places a special or unconventional design for a septic system, where code permits, could be used. An alternative is to place the septic system on nearby or included soils, such as Pyrities soils, that are more favorable to this use.

The capability subclass is 3s. The forestland ordination symbol is 8S.

TdB—Trout River loamy sand, 3 to 8 percent slopes

This is a very deep, gently sloping, excessively drained soil on tops and upper side slopes of gentle ridges. Most areas of this soil are elliptical and range from 6 to 30 acres.

Typical sequence, depth, and composition of the layers of the Trout River soil—

Surface layer:
0 to 8 inches, very dark grayish brown loamy sand

Subsoil:
8 to 14 inches, brown very gravelly loamy sand
14 to 22 inches, dark yellowish brown very gravelly loamy sand
22 to 33 inches, dark yellowish brown gravelly loamy sand

Substratum:
33 to 72 inches, pale brown very gravelly loamy sand

Included with this soil in mapping are small areas of very poorly drained and poorly drained Cook soils, somewhat poorly drained Coveytown soils, and moderately well drained Fahey soils. Also included are areas of Cook and Coveytown soils in low-lying depressions; areas of Fahey soils on benches and backslopes on slight ridges, below the Trout River soil; and small areas of sandy Adams soils that do not have many rock fragments. Also included are areas of moderately well drained, loamy Kalurah soils and well drained, loamy Pyrities soils on some hills and knolls. Included soils range to 6 acres and make up about 25 percent of this unit.

Important properties of the Trout River soil—

Permeability: Rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid and strongly acid in the surface layer, strongly acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: Below 6 feet
Depth to bedrock: Below 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used as pasture or hayland or have been abandoned to forest succession. Some areas are forested or cultivated.

This soil is poorly suited to cultivated crops because it is excessively droughty and has low natural fertility. Growing green manure crops and adding organic matter help to improve water holding capacity. Although irrigation is needed to overcome droughtiness, generally it is not cost effective except when used on specialty crops. Adding organic matter, lime, and fertilizer helps to improve fertility. Applying fertilizer and lime in frequent, small increments rather than all at once helps to avoid substantial losses from leaching on this rapidly permeable soil. Erosion is a hazard on longer, steeper slopes. Conservation practices, such as contour tillage, stripcropping, and conservation tillage, help to reduce soil loss. Conservation tillage creates a mulch layer of unincorporated plant residue on the surface and helps to seal in and to conserve soil moisture.

This soil is suited to hay and pasture. Amending the soil helps to improve fertility and to sustain beneficial plants. Proper stocking rates and pasture rotation help to protect desirable plant varieties especially vulnerable to overgrazing in summer, when water available for plants is low.

Potential productivity for white pine on this soil is low or moderate. Machine planting of seedlings is feasible on this soil; however, the soil is droughty and the seedling mortality rate is severe. Plantings need to be made in early spring or in late fall when soil moisture is most available for plants.

The Trout River soil is suited to use as a site for dwellings with basements. In some areas large stones interfere with excavation and disposition of spoil.

The Trout River soil is suited to use as a site for local roads and streets. In some areas large stones interfere with earthwork.

Rapid permeability is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. In some areas a special or unconventional design for a septic system, where code permits, could be used. An alternative is to place the septic system on nearby or included soils, such as Pyrities soils, that are more favorable to this use.

The capability subclass is 3s. The forestland ordination symbol is 8S.

TfB—Trout River and Fahey soils, 0 to 8 percent slopes, very stony

This map unit consists of very deep, nearly level to gently sloping soils on beach ridges. Typically, excessively drained Trout River soils are on crests of low ridges and moderately well drained Fahey soils are on backslopes or broad ridgetops. Stones 3 to 25 feet apart and boulders cover 0.1 to 3 percent of the surface. Most areas are elliptical. Areas are 6 to 30 acres, but the range is 6 to 40 acres. Some areas consist almost entirely of Trout River or Fahey soils, and some areas consist of both. These soils both have many stones on the surface, have similar interpretations for most uses, and were not separated in mapping. The unit is about 45 percent Trout River soils, 35 percent Fahey soils, and about 20 percent other soils.

Typical sequence, depth, and composition of the layers of Trout River soils—

Surface layer:
0 to 8 inches, very dark grayish brown loamy sand

Subsoil:
8 to 14 inches, brown very gravelly loamy sand
14 to 22 inches, dark yellowish brown very gravelly loamy sand
22 to 33 inches, dark yellowish brown gravelly loamy sand

Substratum:
33 to 72 inches, pale brown very gravelly loamy sand

Typical sequence, depth, and composition of the layers of Fahey soils—

Surface layer:
0 to 7 inches, very dark grayish brown loamy fine sand

Subsoil:
7 to 27 inches, brown very gravelly loamy fine sand
27 to 31 inches, dark brown very gravelly loamy sand

Substratum:
31 to 39 inches, yellowish brown gravelly loamy sand
39 to 72 inches, dark yellowish brown very gravelly loamy sand

Included with these soils in mapping are small areas of somewhat poorly drained Coveytown soils and very poorly drained and poorly drained Cook soils on footslopes, along drainageways, and in other concave areas. Also included are some small areas of loamy, well drained Pyrities soils on some hills and knolls and some small areas free of surface stones. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Trout River soils—

Permeability: Rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid and strongly acid in the surface layer, strongly acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: Below 6 feet
Depth to bedrock: Below 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Important properties of Fahey soils—

Permeability: Rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Very strongly acid to moderately acid in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum
Erosion hazard: Moderate

Depth to water table: At a depth of 1.5 to 2 feet from November to May
Depth to bedrock: More than 60 inches
Potential for frost action: Low
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are used as woodland or unimproved pasture. Some abandoned pastures are reverting to brush or woodland.

These soils are poorly suited to cultivated crops because surface stones and low available water capacity are severe limitations. Surface stones impede use of most farm equipment, and low available water capacity limits growth of cultivated crops.

These soils are poorly suited to pasture. Surface stones severely hinder use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard on longer, steeper slopes.

Potential productivity for white pine on these soils is low or moderate. On droughty Trout River soils the seedling mortality rate is severe. Plantings need to be made in early spring or in late fall when soil moisture is most available for plants. In some areas surface stones hinder machine planting.

The seasonal high water table on Fahey soils is a limitation to use of these soils as a site for dwellings with basements. Installing drains by footings helps to reduce wetness. Adequately sealing foundations helps to prevent wet basements. In some areas large stones and boulders hinder excavation and disposition of the soil. In some areas the surface needs to be cleared of stones to establish a lawn.

These soils are suited to local road and streets. In some areas, however, large stones and boulders hinder earthwork.

Rapid permeability is a severe limitation to use of these soils as a site for septic tank absorption fields. The soils are a poor filter of effluent, and ground-water contamination is a hazard. An alternative is to place the absorption field on included or nearby soils, such as Pyrities soils, that are better suited to this use.

The capability subclass is 6s for the Trout River and Fahey soils. The forestland ordination symbol is 3S for Trout River soils and 8A for Fahey soils.

TuD—Tunbridge-Lyman complex, 15 to 35 percent slopes, very rocky

This map unit consists of soils on hills and ridges on uplands on granitic bedrock-controlled landscapes. Typically, the Tunbridge soil is on side slopes and shoulders of hills and ridges and the Lyman soil is on summits and shoulders. Scattered rock outcrops take in about 2 to 10 percent of the surface area of this map unit. Most areas are irregular in shape. Areas range from 6 to more than 200 acres. The unit is about 45 percent moderately deep, well drained Tunbridge soil, 30 percent shallow, somewhat excessively drained Lyman soil, and 25 percent other soils and rock outcrops. The Tunbridge soils and Lyman soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Included with these soils in mapping are small areas of very shallow mineral soils that are less than 10 inches deep over bedrock, generally near rock outcrops. Also included are areas of very shallow to moderately deep, organic Ricker soils; some areas of very poorly drained Tughill soils and poorly drained Lyme soils in low-lying parts of the unit; and mucky, very poorly drained Loxley soils and silty, very poorly drained Wegatchie soils in narrow troughs. Also included are areas of sandy Adams soils and gravelly Colton soils along streams, areas of very deep Potsdam and Berkshire soils on lower backslopes where the bedrock is deeper than 60 inches, and areas of soils and rock outcrops that have significantly steeper slopes. Included areas range to 6 acres and make up about 25 percent of this unit.

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: Between 10 and 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of these soils are forested.

These soils are unsuited to row crops because of steep slopes, rock outcrops, low available moisture capacity on the Lyman soil, and low soil fertility. Erosion is a serious hazard.

These soils are poorly suited to pasture. Uneven topography, rock outcrops, slope, and included scarps and wetter soils are severe limitations to use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for sugar maple on these soils is moderate or high on the Tunbridge soil and low on the Lyman soil. In exposed areas erosion is a hazard. Laying out logging roads and skid trails on the contour and building water bars to protect roads and trails when not in use help to control erosion. In some areas rock outcrops impede use of planting and logging equipment. The seedling mortality rate is moderate on the droughty Lyman soil. Planting seedlings in spring while the soil is still moist is needed to enhance seedling survival. On the Lyman soil shallow depth to bedrock limits root development and the windthrow hazard is severe. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

Slope and depth to bedrock on both the Tunbridge and Lyman soils are the main limitations to use of these soils as a site for dwellings with basements. Adapting designs for structures to steep slopes is needed. Building above bedrock and landscaping with additional fill will provide a suitable building site. An alternative is to build on deep, included or nearby soils, such as Potsdam soils, that are better suited to this use.

Shallow depth to bedrock on the Lyman soil and slope are severe limitations to use of these soils as a site for local roads and streets. Grades and routes of roads can be planned to avoid rock removal. In some areas, however, blasting is needed. Constructing roads on the contour and adapting road design to slope help to overcome slope.

These soils are unsuitable for septic tank absorption fields because of slope and depth to bedrock. An alternative is to place the absorption field on included or nearby soils, such as very deep Berkshire soils, that are better suited to this use.

The capability subclass is 7s for the Tunbridge and Lyman soils. The forestland ordination symbol is 3R for the Tunbridge soil and 2D for the Lyman soil.

TwC—Tunbridge-Lyman-Dawson complex, rolling, very rocky

This map unit consists of soils on rolling landforms on uplands on granitic bedrock-controlled landscapes. Typically, the Tunbridge soil is on side slopes and footslopes, the Lyman soil is on tops and shoulders of knolls and ridges, and the Dawson soil is in intervening basins. Scattered rock outcrops make up about 2 to 10 percent of the total surface area of this unit. Slopes are complex and range from 5 to 15 percent on the Tunbridge and Lyman soils; they range from 0 to 2 percent on the flatter, basin-like Dawson soil. Most areas are irregular in shape. Areas range from 6 to more than 200 acres. The unit is about 40 percent moderately deep, well drained Tunbridge soil; 20 percent shallow, somewhat excessively drained Lyman soil; 20 percent Dawson soil; and 20 percent other soils and rock outcrops. The Tunbridge, Lyman, and Dawson soils are intermingled so closely that they could not be separated at the scale selected for mapping.

Typical sequence, depth, and composition of the layers of the Tunbridge soil—

Surface layer:
0 to 2 inches, dark reddish brown silt loam

Subsurface layer:
2 to 3 inches, brown silt loam

Subsoil:
3 to 19 inches, dark reddish brown and dark brown silt loam
19 to 30 inches, dark yellowish brown gravelly very fine sandy loam

Bedrock:
30 inches, granitic bedrock

Typical sequence, depth, and composition of the layers of the Lyman soil—

Surface layer:
0 to 3 inches, black silt loam

Subsurface layer:
3 to 4 inches, pinkish gray silt loam

Subsoil:
4 to 14 inches, reddish brown silt loam

Bedrock:
14 inches, granitic bedrock

Typically the sequence, depth, and composition of the layers of the Dawson soil—

Surface layer:
0 to 5 inches, yellowish brown peat

Subsurface layer:
5 to 30 inches, black muck

Substratum:
30 to 72 inches, gray loamy sand

Included with these soils in mapping are small areas of very shallow mineral soils, generally near rock outcrops, that are less than 10 inches deep over bedrock. Also included, on similar landforms, are areas of very shallow, organic Ricker soils; small areas of very poorly drained, loamy Tughill soils and somewhat poorly drained Lyme soils in basins and swales; and areas of silty, very poorly drained Wegatchie soils or very poorly drained, highly variable Borosaprists and Fluvaquents in narrow troughs. Also included are areas of sandy Adams soils and gravelly Colton soils along streams; some areas of deep soils along lower backslopes; areas of very deep Berkshire and Potsdam soils; and areas of steeper sloping soils and bedrock scarps. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Tunbridge soil—

Permeability: Moderate or moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Moderate
Soil reaction: Extremely acid to moderately acid in the surface layer and the subsoil and strongly acid to slightly acid in the substratum
Erosion hazard: Severe
Depth to water table: More than 6 feet
Depth to bedrock: 20 to 40 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Lyman soil—

Permeability: Moderately rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Extremely acid to moderately acid throughout
Erosion hazard: Severe
Depth to water table: More than 6 feet throughout the year
Depth to bedrock: Between 10 and 20 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Important properties of the Dawson soil—

Permeability: Moderate or moderately rapid in the surface layer, moderately slow to moderately rapid in the underlying organic layers, and rapid in the sandy substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Extremely acid in the organic material and very strongly acid to slightly acid in the substratum
Erosion hazard: Slight
Depth to water table: From 1 foot above the surface to 1 foot below from September to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are woodland. Some areas are pasture.

These soils are poorly suited to cultivated crops. Rock outcrops and complex slopes obstruct use of tillage and harvesting equipment. Also, the Lyman soil is very droughty during most of the growing season and the Dawson soil is very wet during most of the year.

These soils are poorly suited to pasture. The uneven topography, shallow depth to bedrock on the Lyman and Tunbridge soils, wetness on the Dawson soil, and included scarps and rock outcrops are severe limitations to use of equipment needed to improve and maintain pasture. Proper stocking rates and brush control are management concerns. Grazing these soils when wet causes surface compaction. Overgrazing can diminish quantity and quality of forage plants and can cause an erosion hazard.

Potential productivity for trees on these soils is low or moderate. In some areas wetness on the Dawson soil, uneven terrain, rock outcrops, and scarps limit use of planting and logging equipment. The seedling mortality rate is moderate on the droughty Lyman soil. It is high on the Dawson soil. The high water table on the Dawson soil and shallow depth to bedrock on the Lyman soil cause a severe windthrow hazard on these soils. On the Lyman soil planting seedlings in spring while the soil is still moist helps to decrease seedling survival. Minimizing clearcutting and selecting naturally shallow-rooted trees help to reduce windthrow.

Depth to bedrock on the Tunbridge and Lyman soils and the high water table on the Dawson soil are the main limitations to use of these soils as a site for dwellings with basements. On the Lyman and Tunbridge soils blasting or depositing additional fill materials is needed because of shallow or moderate depth to bedrock. On the Dawson soil footing drains help to reduce wetness. An alternative is to select included or nearby soils that are better suited to this use.

Shallow depth to bedrock on the Lyman soil, wetness on the Dawson soil, and moderate depth to bedrock on the Tunbridge soil are severe limitations to use of these soils as a site for local roads and streets. Grades and routes of roads can be planned to avoid rock removal. In some areas blasting is needed. Because ponding, wetness, subsidence, and excessive potential for frost action are severe limitations on the Dawson soil, this soil is to be avoided for roads and streets.

These soils are poorly suited to use as a site for septic tank absorption fields. Depth to bedrock on the Tunbridge and Lyman soils and ponding and wetness on the Dawson soil are the main limitations. An alternative is to place the absorption field on included or nearby soils, such as Berkshire soils, that are better suited to this use.

The capability subclass is 7s for the Tunbridge and Lyman soils and 7w for the Dawson soil. The forestland ordination symbol is 3A for the Tunbridge soil, 2D for the Lyman soil, and 2W for the Dawson soil.

Ua—Udipsamments, smoothed

This map unit consists of very deep, nearly level to steep, moderately well drained to excessively drained, mostly neutral and alkaline sandy materials dredged from the St. Lawrence River during construction of the St. Lawrence Seaway. It also consists of areas where the soils formed in sandy materials that were deposited or that remained after excavation, some of which were shaped and smoothed. The topography of these areas ranges from slightly concave, nearly level areas to large, convex hills. Slopes range from 0 to 25 percent. Areas are irregular in shape and range from 6 to 100 acres. The soils in this map unit are classified above the series level because of their variable characteristics and properties.

Typical sequence, depth, and composition of the layers of Udipsamments, smoothed—

Surface layer:
Very dark grayish brown sand to sandy loam, 2 to 10 inches thick

Substratum:
Gray, grayish brown, brown, and dark reddish brown sand or fine sand, more than 20 inches thick

Included with Udipsamments, smooth, in mapping are areas of deep, loamy, well drained Grenville soils and moderately well drained Hogansburg soils on undisturbed knobs and crests of small hills. Also included are areas of loamy over clayey, poorly drained, very deep Swanton soils in undisturbed depressions; undisturbed areas of very deep, somewhat poorly drained Muskellunge soils; and some places, notably along the border of Jefferson County, where the soils are warmer than normal, usually by less than 2 degrees. Also included are small areas of loamy or clayey Udorthents. Included areas range to 6 acres, and make up about 20 percent of this unit.

Important properties of Udipsamments, smooth—

Permeability: Moderately slow to rapid in the surface layer and rapid below
Available water capacity (average for a 40-inch soil profile): Very low
Soil reaction: Slightly acid to moderately alkaline throughout
Erosion hazard: Moderate

Depth to water table: From 1.5 feet to more than 6 feet from November to May
Depth to bedrock: Generally more than 60 inches
Potential frost action: Low
Shrink swell potential: Low
Flooding hazard: None

The smooth, nearly barren areas of these soils are in sparse brush or grassland or in low-quality woodland.

These soils are not suited to agriculture. They are too alkaline and droughty and are infertile. Also, heavy grading equipment created a traffic pan on these soils. Onsite investigation is needed to define limitations and capabilities on a site-by-site basis.

These soils have a highly variable suitability for forest management. In most areas low water holding capacity and high reaction are limitations.

Before undergoing intensive management these soils require onsite investigation to evaluate areas for urban development.

The capability subclass is 6s. A forestland ordination symbol was not assigned.

Ue—Udorthents, loamy

This map unit consists of very deep, nearly level to steep, moderately well drained and well drained, mostly neutral and alkaline loamy materials dredged from the St. Lawrence River during construction of the St. Lawrence Seaway (fig. 10). It also consists of areas where the soils formed in loamy soil materials that were deposited or that remained after scalping for road building; most of these areas were shaped and smoothed. The topography of these areas ranges from slightly concave, nearly level areas to large, convex hills. Most areas near the St. Lawrence River slope steeply to the water's edge. Slopes range from 0 to 25 percent. Areas are irregular in shape and range from 6 to 100 acres. The soils in this map unit are classified above the series level because their characteristics and properties are variable.

Udorthents, loamy, consists mainly of a thin, dark grayish brown sandy loam to silt loam surface layer that overlies a grayish brown, loamy substratum of highly variable texture.

Included with these soils in mapping are deep, loamy, well drained Grenville soils and moderately well drained Hogansburg soils on undisturbed knobs and crests of small hills. Also included are areas of loamy over clayey, somewhat poorly drained and poorly drained, very deep Swanton soils in undisturbed depressions, undisturbed areas of very deep, somewhat poorly drained Muskellunge soils, and small areas of coarser textured Udipsamments or finer textured, clayey Udorthents. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Udorthents, loamy—

Permeability: Slow or moderately slow throughout
Available water capacity (average for a 40-inch soil profile): Very low to moderate
Soil reaction: Neutral to strongly alkaline throughout
Erosion hazard: Moderate or severe
Depth to water table: Generally more than 2 feet below the surface from November to May
Depth to bedrock: Generally more than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Areas of these soils are nearly barren, are in sparse brush or grassland, or are in low-grade woodland.

These soils are not suited to agriculture because reaction is too high. Also, in most areas the traffic pan that heavy grading equipment created restricts rooting depth and available water capacity. In steeper areas erosion is hazard, particularly near the St. Lawrence River. These soils require onsite investigation to define limitations and capabilities site by site.

This map unit has a highly variable suitability for forest management. These soils require onsite investigation before undergoing intensive management.

These soils require onsite investigations to evaluate areas for urban development.

The capability subclass is 6s. A forestland ordination symbol was not assigned.

Uf—Udorthents, clayey

This map unit consists mainly of very deep, nearly level to strongly sloping, moderately well drained to well drained, mostly neutral and alkaline silt and clay materials dredged from the St. Lawrence River during construction of the St. Lawrence Seaway. It also includes areas of materials deposited in large shaped and smoothed piles. In other areas the materials were deposited as a slurry into dike settling basins. The topography of these areas ranges from concave, nearly level, basin-like areas to networks of convex, strongly sloping hills and scattered, short, steep sloping areas. Slopes range from 0 to 15 percent. Areas are irregular in shape and range from 6 to 100 acres. The soils in this map unit are classified above the series level because their characteristics and properties are variable.

Figure 10.—An area of Udorthents, loamy, along the mainland of the St. Lawrence Seaway. These soils formed in dredgings from the seaway project.

Udorthents, clayey, generally consist of a thin very dark grayish brown or very dark gray silt loam to clay surface layer that overlies a grayish brown to gray substratum (fig. 11).

Included with these soils in mapping are deep, loamy, well drained Grenville soils and moderately well drained Hogansburg soils on undisturbed knobs and crests of small hills. Also included are some small areas of poorly drained and very poorly drained clayey soils that consist mainly of man-deposited materials; areas of loamy over clayey, somewhat poorly drained and poorly drained, very deep Swanton soils in undisturbed depressions; and some small areas, generally on short, steep slopes, where slopes are steeper than for Udorthents, clayey. Also included are undisturbed areas of very deep, somewhat poorly drained Muskellunge soils and small areas of sandy Udorthents. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Udorthents, clayey—

Permeability: Very slow to moderately slow
Available water capacity (average for a 40-inch soil profile): Moderate or high
Soil reaction: Slightly acid to strongly alkaline
Erosion hazard: Moderate
Depth to water table: Generally more than 2 feet below the surface from November to May
Depth to bedrock: Generally more than 60 inches
Potential for frost action: High
Shrink swell potential: Moderate
Flooding hazard: Variable

Areas of these soils are not well suited to agriculture because reaction is generally too high and heavy grading equipment created a traffic pan. Onsite investigation is needed to define limitations and capabilities of these soils site by site.

This map unit has a highly variable suitability for forest management.

Onsite investigation is needed to evaluate areas of this map unit for urban development.

The capability subclass is 6s. A forestland ordination symbol was not assigned.

Ug—Udorthents, mine waste, acid

This map unit consists mainly of very deep, nearly level to very steep, moderately well drained to excessively drained acid tailings from lead, feldspar, zinc, or iron mines. In places soil reaction is so low that the soil releases heavy metals that contaminate ground and surface water. The topography of this map unit, which is mainly piles and dumps, is irregular in shape. Some areas have open pits and abandoned mine shafts. Some areas are dangerously subject to collapse, especially near subsurface mines. Areas are irregular in shape and range from 6 to 100 acres. Slopes range from 0 to 50 percent. The soils in this map unit are classified above the series level because their characteristics and properties are variable.

These soils are highly variable; they do not have a typical sequence, depth, or composition of layers. In most areas, however, the soils are either sandy loam, loamy sand, or loam, and have highly variable amounts of rock fragments, ranging from gravel to stones.

Figure 11.—An area of Udorthents, clayey, along the St. Lawrence Seaway.

Included with these soils in mapping are shallow, well drained Insula soils on undisturbed knobs and crests of small hills. Also included are areas of loamy over clayey, somewhat poorly drained and poorly drained, very deep Swanton soils in undisturbed depressions and areas of unstabilized, actively eroding mine spoils. Well drained, loamy Pyrities soils are included in undisturbed, convex areas.

Important properties of Udorthents, mine waste, acid—

Permeability: Very slow to rapid throughout
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Extremely acid to strongly acid throughout
Erosion hazard: Moderate or severe
Depth to water table: Perched on the surface in places, but ranges from 2 feet to more than 6 feet below the surface between November and May
Depth to bedrock: Dominantly more than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Areas of these soils are nearly barren or are in sparse brush or low grade woodland.

These soils are not suited to agriculture. They are too acid, infertile, often droughty, and commonly on untraversable topography.

These soils have a highly variable suitability for forest management. In some places, trees grow well and logging equipment is accessible; in other places they grow slowly, if at all, and are inaccessible because of open pits and open mine shafts.

These soils are suitable for urban use in places; however, in most areas they are unsuitable because of the broken topography and hazards posed by open pits and shafts. Onsite investigation is needed to evaluate areas for urban development.

The capability subclass is 8. A forestland ordination symbol was not assigned.

Uh—Udorthents, mine waste, nonacid

This map unit consists mainly of very deep, nearly level to steep, moderately well drained to excessively drained neutral and alkaline tailings from marble quarries or talc mines. The topography of this map unit is irregular in shape; it consists mainly of piles and dumps. Some areas have open pits and abandoned mine shafts. Some areas are dangerously subject to collapse, especially near subsurface mines. Areas are irregular in shape and range from 6 to 100 acres. Slopes range from 0 to 50 percent. The soils in this map unit are classified above the series level because their characteristics and properties are variable.

These soils are highly variable; they do not have a typical sequence, depth, or composition of layers. In most areas, however, they are either sandy loam, loamy sand, or loam and have highly variable amounts of rock fragments, ranging from gravel to stones.

Included with these soils in mapping are shallow, well drained Summerville soils on undisturbed knobs and crests of small hills. Also included are areas of loamy over clayey, somewhat poorly drained and poorly drained, very deep Swanton soils in undisturbed depressions and well drained, loamy Pyrities soils in undisturbed, convex shaped areas. Included areas range to 6 acres and make up about 15 percent of this unit.

Important properties of Udorthents, mine waste, nonacid —

Permeability: Very slow to rapid throughout
Available water capacity (average for a 40-inch soil profile): Low or moderate
Soil reaction: Neutral to strongly alkaline throughout
Erosion hazard: Moderate or severe
Depth to water table: Perched on the surface in places, but ranges from 2 feet to more than 6 feet below the surface between November and May
Depth to bedrock: Dominantly more than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Areas of these soils are nearly barren, are in sparse brush, or are in low-quality woodland.

These soils are not suited to agriculture. They are infertile, are often droughty, and are on generally untraversable topography.

These soils have a highly variable suitability for forest management. In some places trees grow well and logging equipment is accessible; in other places trees grow slowly, if at all, and are inaccessible because of open pits and open mine shafts.

These soils are suitable for urban use in some places; however, in most areas it is unsuitable because of the broken topography and the hazardous open pits and shafts. Onsite investigation is needed to define areas for urban development.

The capability subclass is 7s. A forestland ordination symbol was not assigned.

Un—Udorthents, refuse substratum

This map unit consists of well drained soils formed mainly on sanitary landfills. These soils are highly variable because the material used as the final cover for the landfill often was mixed with refuse. Most areas have been smoothed and graded.

A short, steep slope demarcates the perimeters of many of these units. Slopes range from 0 to 5 percent. Areas are irregular in shape and range from 6 to 25 acres. The soils in this map unit are classified above the series level because their characteristics and properties are variable.

Typical sequence, depth, and composition of the layers of Udorthents, refuse substratum, are highly variable; they consist of mineral soil of various textures and colors, overlying refuse.

Included with these soils in mapping are areas of deep, loamy, well drained Grenville and Pyrities soils and sandy, somewhat excessively drained Adams soils on undisturbed knobs and crests of small hills. Also included are undisturbed areas of loamy over clayey, somewhat poorly drained and poorly drained, very deep Swanton soils and undisturbed areas of very deep, somewhat poorly drained Muskellunge soils. Also included are small areas of rock outcrops and many areas of short, steep slopes encircling at least part of the perimeter. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of Udorthents, refuse substratum—

Permeability: Very slow to rapid throughout
Available water capacity (average for a 40-inch soil profile): Very low to moderate
Soil reaction: Strongly acid to moderately alkaline throughout
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to bedrock: More than 60 inches
Potential for frost action: Moderate
Shrink swell potential: Low
Flooding hazard: None

Areas of these soils are nearly barren or are in sparse brush or grassland.

These soils are poorly suited to agriculture. They are possibly contaminated, sometimes droughty, and infertile. Also, heavy grading equipment has created a traffic pan on these soils. Onsite investigation is needed to define limitations and capabilities site by site.

These soils have a highly variable suitability for forest management. Slopes generally are favorable for tree planting; however, the density of the compacted layer and the fertility of these soils vary widely. Also, these soils often have little available water for plants. Onsite investigation is needed before these soils undergo intensive forest management.

Onsite investigations are needed to evaluate areas for urban development.

The capability subclass is 7s. A forestland ordination symbol was not assigned.

Ur—Urban land

This map unit consists of areas where asphalt, concrete, or other impervious building material cover at least 85 percent of the surface. Most areas are parking lots, shopping centers, industrial parks, or institutional sites. Many areas are in business centers of villages and cities. Most areas are nearly level; some are gently sloping. A few small areas are strongly sloping. Areas are irregular in shape, generally with straight sides and angular corners, and range from about 6 to 60 acres.

Included with these soils in mapping are small areas of soils that are mostly unaltered or do not have an impervious cover. Areas are mainly in lawns or other landscaped areas. Also included are some areas of well drained loamy Pyrities and Grenville soils on strongly sloping knolls or hills and small areas of somewhat poorly drained, clayey Muskellunge soils in nearly level places. Included areas range to 6 acres and make up about 15 percent of this unit.

In many areas rapid or very rapid runoff prevents adequate discharge of runoff from intense rainstorms to safe outlets. A few areas are in low spots, where seasonal wetness sometimes causes temporary flooding or frost heaving that breaks up pavement.

A capability class was not assigned. A forestland ordination symbol was not assigned.

WaA—Waddington gravelly sandy loam, 0 to 3 percent slopes

This is a very deep, nearly level, somewhat excessively drained soil formed in water-sorted materials on terraces and tops of kames and moraines. Most areas are elongated with irregular margins. Areas are 6 to 25 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers of the Waddington soil—

Surface layer:
0 to 8 inches, dark brown gravelly sandy loam

Subsoil:
8 to 12 inches, strong brown gravelly loam
12 to 19 inches, brown very gravelly sandy loam

Substratum:
19 to 36 inches, dark grayish brown and dark brown very gravelly loamy sand
36 to 72 inches, grayish brown and dark grayish brown extremely gravelly sandy loam

Included with this soil in mapping are small areas of moderately well drained Heuvelton and Depeyster soils on footslopes and benches. These soils have a higher clay content than that of the Waddington soil. Also included are small areas of Raquette soils where the gravel content is lower than that in the Waddington soil; areas of Adams soils where deposits are mostly sand and very little gravel; and, on saddles and shoulders of ridges and hills, areas of Grenville and Pyrities soils that formed in glacial till, contain less gravel than the Waddington soil, and are loamy throughout the subsoil. Also included are a few small areas where excessive stones and cobbles are on the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Waddington soil—

Permeability: Moderate in the surface layer, moderately rapid in the upper part of the subsoil, and rapid or very rapid in the lower part of the subsoil and the substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Slightly acid or neutral in the surface layer, neutral or slightly alkaline in the upper part of the subsoil, neutral to moderately alkaline in the lower part of the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: More than 6 feet
Depth to rock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. Other areas are used for pasture or are wooded. A few areas are mined for gravel.

This soil is suitable for most crops. It tends to be droughty during dry periods in summer because of the low available water holding capacity. Returning crop residue and other organic matter to the soil helps to improve water holding capacity. Conservation tillage and crop rotations that include sod crops help to increase water holding capacity and to improve or restore soil tilth. These soils respond well to lime and fertilizer applied according to soil tests. Applying fertilizer and lime in small increments help to prevent excessive losses from leaching.

This soil is well suited to hay and pasture. Available water capacity is low, and in some years plants on this soil are subject to moisture stress during prolonged dry periods. Overgrazing is a concern, especially during dry periods. Returning crop residue and other organic matter to the soil helps to improve water holding capacity. Close monitoring of pasture conditions, maintaining proper stocking rates, and rotational grazing help to maintain populations of desirable plant species. On pasture applying lime and fertilizer according to soil tests and yearly mowing are needed.

Potential productivity for red oak on this soil is moderate. The soil can be droughty, and seedling mortality is a management concern. Planting seedlings in spring while the soil is still moist will increase the seedling survival rate.

There are few limitations to the use of this soil as a site for dwellings with basements. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Potential for frost action is a moderate limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Very rapid permeability in the substratum is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. In many areas a special or unconventional design for a septic system, where code permits, could be used. An alternative is to place the absorption field on included or nearby soils, such as Grenville soils, that are better suited to this use.

Most areas of this soil are excellent sources of gravel and sand.

The capability subclass is 3s. The forestland ordination symbol is 3F.

WaB—Waddington gravelly sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, somewhat excessively drained soil formed in water-sorted materials on terraces and tops of kames and moraines. Most areas are elongated with irregular margins. Areas are 6 to 25 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers of the Waddington soil—

Surface layer:
0 to 8 inches, dark brown gravelly sandy loam

Subsoil:
8 to 12 inches, strong brown gravelly loam
12 to 19 inches, brown very gravelly sandy loam

Substratum:
19 to 36 inches, dark grayish brown and dark brown very gravelly loamy sand
36 to 72 inches, grayish brown and dark grayish brown extremely gravelly sandy loam

Included with this soil in mapping, on footslopes and benches, are some small areas of moderately well drained Heuvelton and Depeyster soils that have a higher clay content than that in the Waddington soil. Also included, on saddles and shoulders of ridges and hills, are small areas of Raquette soils where the gravel content is lower than that in the Waddington soil; areas of Adams soils where deposits are mostly sand and very little gravel; and areas of Grenville and Pyrities soils that formed in glacial till, contain less gravel, and are loamy throughout the subsoil. Also included are small areas where excessive stones or cobbles are on the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Waddington soil—

Permeability: Moderate in the surface layer, moderately rapid in the upper part of the subsoil, and rapid or very rapid in the lower part of the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Slightly acid to neutral in the surface layer, neutral to slightly alkaline in the upper part of the subsoil, neutral to moderately alkaline in the lower part of the subsoil, and slightly alkaline to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to rock: More than 60 inches

Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for cultivated crops or hay. Other areas are used for pasture or are wooded. A few areas are mined for gravel.

This soil is fairly suited to most crops. It tends to be droughty during dry periods in summer. Returning crop residue and other organic matter to the soil adds a mulch layer and helps to improve water holding capacity. If the soil has an insufficient vegetative cover, erosion is a hazard on longer, steeper slopes. Contour tillage, conservation tillage, and crop rotations that include sod crops help to control erosion, to increase water holding capacity, and to improve or restore soil tilth. These soils respond well to lime and fertilizer applied according to soil tests. Applying fertilizer and lime in small increments helps to prevent leaching and to reduce nutrient loss.

This soil is well suited to hay and pasture. In some years plants on these soils are subject to moisture stress during prolonged dry periods. Returning crop residue and other organic matter to the soil helps to improve water holding capacity. Overgrazing can diminish vegetative cover and can cause an erosion hazard. Close monitoring of pasture conditions, maintaining proper stocking rates, and rotational grazing help to control erosion and to maintain populations of desirable plant species. Applying lime and fertilizer according to soil tests and yearly mowing are needed on pasture.

Potential productivity for red oak on this soil is moderate. The soil can be droughty, and seedling mortality is a management concern. Planting seedlings in spring while the soil is still moist will enhance the rate of seedling survival.

This soil has few limitations to use as a site for dwellings with basements. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Potential for frost action is a moderate limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

Very rapid permeability in the substratum is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. In many areas a special or unconventional design for a septic system, where code permits, could be used. An alternative is to place the absorption field on included or nearby soils, such as Grenville soils, that are better suited to this use.

Most areas of this soil are excellent sources of gravel and sand.

The capability subclass is 3s. The forestland ordination symbol is 3F.

WaC—Waddington gravelly sandy loam, rolling

This is a very deep, rolling, somewhat excessively drained soil formed in water-sorted materials on tops and side slopes of terraces, kames, and moraines. Most slopes are complex and range from 5 to 15 percent. Most areas are elongated with irregular margins. Areas are 6 to 25 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers of the Waddington soil—

Surface layer:
0 to 8 inches, dark brown gravelly sandy loam

Subsoil:
8 to 12 inches, strong brown gravelly loam
12 to 19 inches, brown very gravelly sandy loam

Substratum:
19 to 36 inches, dark grayish brown and dark brown very gravelly loamy sand
36 to 72 inches, grayish brown and dark grayish brown extremely gravelly sandy loam

Included with this soil in mapping, on footslopes and benches, are small areas of moderately well drained Heuvelton and Depeyster soils that have a higher clay content than the Waddington soil. Also included are small areas of Raquette soils in small deposits where the gravel content is lower than that in the Waddington soil; areas of Adams soils where deposits are mostly sand and very little gravel; and, on tops and side slopes of small hills and ridges, areas of Grenville and Pyrities soils that have fewer rock fragments in the solum than the Waddington soil. Also included are a few small areas where excessive stones or cobbles are on the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Waddington soil—

Permeability: Moderate in the surface layer, moderately rapid in the upper part of the subsoil, and rapid or very rapid in the lower part of the subsoil and substratum

Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Slightly acid or neutral in the surface layer, neutral or slightly alkaline in the upper part of the subsoil, neutral to moderately alkaline in the lower part of the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to rock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hay and pasture. Some areas are in cultivated crops or are wooded. A few areas are mined for gravel.

This soil is poorly suited to cultivated crops because erosion is a severe hazard. Crop rotations that emphasize sod crops, conservation tillage, contour tillage, and stripcropping help to control erosion. The soil is droughty because of low available water capacity. Returning crop residue and adding organic matter to the soil help to improve water holding capacity. Adding lime and fertilizer according to soil tests helps to improve crop yields.

This soil is fairly well suited to hay and pasture. Overgrazing can diminish vegetative cover and can cause a severe erosion hazard. Close monitoring of pasture conditions, maintaining proper stocking rates, and rotational grazing help to maintain pasture seeding and to control erosion. In some years plants on these soils are subject to moisture stress during prolonged dry periods. Returning crop residue and adding organic matter to the soil help to improve water holding capacity.

Potential productivity for red oak on this soil is moderate. The soil can be droughty; thus, seedling mortality is a management concern. Planting seedlings in spring while the soil is still moist helps to improve the seedling survival rate. Slope is a moderate limitation to equipment use.

Slope is a moderate limitation to use of this soil as a site for dwellings with basements. Designing the structure to conform to the natural slope and cutting and filling to shape the land help to overcome this limitation. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Potential for frost action and slope are moderate limitations to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Constructing roads on the contour and land shaping and grading help to overcome this limitation.

Very rapid permeability in the substratum is a severe limitation to use of this soil as a site for septic tank absorption fields. The soil is a poor filter of effluent, and ground-water contamination is a hazard. An alternative is to build the absorption field on included or nearby soils, such as Grenville soils, that are better suited to this use.

Many areas of this soil are excellent sources of gravel and sand.

The capability subclass is 3e. The forestland ordination symbol is 3F.

WaD—Waddington gravelly sandy loam, 15 to 35 percent slopes

This is a very deep, moderately steep and steep, somewhat excessively drained soil formed in water-sorted materials on tops and side slopes of terraces, kames, and moraines. Most areas are elongated. Areas are 6 to 25 acres, but the range is 6 to 100 acres.

Typical sequence, depth, and composition of the layers of the Waddington soil—

Surface layer:
0 to 8 inches, dark brown gravelly sandy loam

Subsoil:
8 to 12 inches, strong brown gravelly loam
12 to 19 inches, brown very gravelly sandy loam

Substratum:
19 to 36 inches, dark grayish brown and dark brown very gravelly loamy sand
36 to 72 inches, grayish brown and dark grayish brown extremely gravelly sandy loam

Included with this soil in mapping, on footslopes and benches, are some small areas of moderately well drained Heuvelton and Depeyster soils, which have a higher clay content than the Waddington soil. Also included are small areas of Raquette soils where the gravel content is lower than that in the Waddington soil; areas of Adams soils where deposits are mostly sand and very little gravel; and, on benches and on shoulders of ridges and hills, areas of Grenville and Pyrities soils, which formed in glacial till and are loamy throughout the subsoil. Also included are a few small areas where excessive stones or cobbles are on the surface. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Waddington soil—

Permeability: Moderate in the surface layer, moderately rapid in the upper part of the subsoil, and rapid or very rapid in the lower part of the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Slightly acid or neutral in the surface layer, neutral or slightly alkaline in the upper part of the subsoil, neutral to moderately alkaline in the lower part of the subsoil, and slightly alkaline to moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to rock: Greater than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are used for hay and pasture. Some areas are wooded. A few areas are mined for gravel.

This soil is unsuited to cultivated crops. Slopes are moderately steep and steep, and erosion is a hazard. A continuous sod cover helps to control erosion.

This soil is fairly suited to hay and pasture. Moderately steep and steep slopes hinder use of farm equipment. Overgrazing can diminish vegetative cover and can cause a severe erosion hazard. Closely monitoring pasture conditions, maintaining proper stocking rates, and rotational grazing help to control erosion and to maintain populations of desirable plant species. In some years plants are subject to moisture stress during prolonged dry periods. Returning crop residue and other organic matter to the soil helps to improve water holding capacity.

Potential productivity for red oak on this soil is moderate. Moderately steep and steep slopes hinder use of heavy equipment. The soil can be droughty, and seedling mortality is a management concern. Planting seedlings in spring while the soil is still moist helps to enhance the seedling survival rate.

Slope is a severe limitation to use of this soil as a site for dwellings with basements. Designing the structure to conform to slope and cutting and filling to shape the land help to overcome this limitation. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Slope is the main limitation to use of this soil as a site for local roads and streets. Constructing roads on the contour, land shaping and grading, and adapting road design to slope help to overcome this limitation.

This soil is unsuitable for septic tank absorption fields because of very rapid permeability in the substratum and moderately steep and steep slopes. An alternative is to place the absorption field on included or nearby soils, such as Grenville soils, that are better suited to this use.

Most areas of this soil are excellent sources of gravel and sand.

The capability subclass is 6e. The forestland ordination symbol is 3F.

WdB—Waddington very cobbly sandy loam, 3 to 8 percent slopes

This is a very deep, gently sloping, somewhat excessively drained soil formed in water-sorted materials on terraces and on tops of kames and moraines. Most areas are elongated with irregular margins. Areas are 6 to 25 acres, but the range is 6 to 50 acres.

Typical sequence, depth, and composition of the layers of the Waddington soil—

Surface layer:
0 to 8 inches, dark brown very cobbly sandy loam

Subsoil:
8 to 12 inches, strong brown gravelly loam
12 to 19 inches, brown very gravelly sandy loam

Substratum:
19 to 36 inches, dark grayish brown and dark brown very gravelly loamy sand
36 to 72 inches, grayish brown and dark grayish brown extremely gravelly sandy loam

Included with this soil in mapping, on footslopes and benches, are some small areas of moderately well drained Heuvelton and Depeyster soils, which have a higher clay content than the Waddington soil. Also included are small areas of Raquette soils where gravel content is lower than that in the Waddington soil; areas of Adams soils where deposits are mostly sand and very little gravel; and, on saddles and shoulders of ridges and hills, areas of Grenville and Pyrities soils, which have less gravel than that in the Waddington soil. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Waddington soil—

Permeability: Moderate in the surface layer, moderately rapid in the upper part of the subsoil, and rapid or very rapid in the lower part of the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): Very low or low
Soil reaction: Slightly acid or neutral in the surface

layer, neutral or slightly alkaline in the upper part of the subsoil, neutral to moderately alkaline in the lower part of the subsoil, and slightly alkaline or moderately alkaline in the substratum
Erosion hazard: Moderate
Depth to water table: More than 6 feet
Depth to rock: More than 60 inches
Potential for frost action: Moderate
Shrink-swell potential: Low
Flooding hazard: None

Many areas of this soil are used for hay or pasture. A few areas are used for cultivated crops or as woodland or are mined for gravel.

This soil is poorly suited to most crops. Numerous cobbles in the surface layer cause excessive wear on tillage equipment and diminish soil productivity. The soil can be very droughty during dry periods in summer. Returning crop residue and other organic matter to the soil helps to improve water holding capacity. Erosion is a hazard on longer, steeper slopes. Conservation tillage and crop rotations that emphasize sod crops help to control erosion, to reduce wear on machinery, to enhance water holding capacity, and to improve or restore soil tilth.

This soil is fairly suited to hay and pasture. In some years plants on these soils are subject to severe moisture stress during prolonged dry periods. Returning crop residue and other organic matter help to improve water holding capacity. Overgrazing can diminish vegetative cover and can cause an erosion hazard. Proper stocking rates and rotational grazing help to control erosion and to maintain populations of desirable plant species. Numerous cobbles in the surface layer cause excessive wear on machinery during reseeding operations.

Potential productivity for trees on this soil is moderate. The soil can be droughty, and seedling mortality is a management concern. Planting seedlings in spring while the soil is still moist helps to enhance the seedling survival rate.

Excavating and disposing of large stones are needed if this soil is used as a site for dwellings with basements. Cutbanks caving in is a hazard during construction. For personal safety, before deep, narrow excavations are entered cutbanks need to be shored up and buttressed to prevent cave-ins.

Potential for frost action is a moderate limitation to use of this soil as a site for local roads and streets. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement. Excavating and disposing of large stones is a problem on this soil.

This map unit is unsuitable for septic tank absorption fields because of very rapid permeability in the substratum. An alternative is to place the absorption field on included or nearby soils, such as Grenville soils, that are better suited to this use.

Most areas of this soil are excellent sources of gravel and sand.

The capability subclass is 3s. The forestland ordination symbol is 3F.

Wg—Wegatchie silt loam

This is a very deep, nearly level, poorly drained soil formed in clayey sediments in low-lying basins or along streams. Most areas are irregular in shape. Areas are 6 to 30 acres, but the range is 6 to more than 100 acres. Slopes are smooth and range from 0 to 3 percent.

Typical sequence, depth, and composition of the layers of the Wegatchie soil—

Surface layer:
0 to 8 inches, very dark gray silt loam

Subsoil:
8 to 13 inches, gray clay loam
13 to 19 inches, dark gray silty clay loam
19 to 40 inches, dark gray silt loam

Substratum:
40 to 72 inches, yellowish brown silt loam

Included with this soil in mapping are small areas of Dorval soils in wetter depressions where organic matter accumulates on the surface. Also included are moderately well drained Depeyster soils on convex knolls and in other higher areas; areas of somewhat poorly drained Hailesboro soils and somewhat poorly drained and poorly drained, coarse loamy over clayey Swanton soils in slightly higher places in the map unit; and some small areas of finer-textured Adjidaumo soils. Also included are small areas of loamy, well drained Grenville and Pyrities soils; small areas of moderately well drained Hogansburg and Kalurah soils; and small areas of somewhat poorly drained Malone soils on small hills and knolls. Included areas range to 6 acres and make up about 20 percent of this unit.

Important properties of the Wegatchie soil—

Permeability: Moderate in the surface layer and moderately slow in the subsoil and substratum
Available water capacity (average for a 40-inch soil profile): High
Soil reaction: Moderately acid to neutral in the surface layer, slightly acid to slightly alkaline in the subsoil,

and neutral to moderately alkaline in the substratum
Erosion hazard: Slight
Depth to water table: From the surface to a depth of 1 foot below the surface from November to June
Depth to bedrock: More than 60 inches
Potential for frost action: High
Shrink-swell potential: Low
Flooding hazard: None

Most areas of this soil are used for hay and pasture. Many areas are wooded. Some areas are used for cultivated crops. Some cleared areas are idle and are reverting to brush.

This soil is poorly suited to cultivated crops because of seasonal wetness. In some places suitable outlets for artificial drainage are difficult to find. Conservation tillage, crop residue on and in the soil, and cover crops improve tilth.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the rooting depth of some plants, especially legumes. Grazing the soil when wet causes surface compaction and loss of tilth. Installing artificial drainage and selecting shallow-rooted, water-tolerant species helps to improve productivity. Applying lime and fertilizer according to soil tests, restricting grazing during wet periods, and yearly mowing help to prevent surface compaction, to preserve tilth, and to enhance quality and quantity of feed and forage.

Potential productivity for red maple on this soil is low. In some years wet soil conditions hinder heavy equipment use in spring and during other wet periods. Logging during drier periods or in winter when the ground is frozen helps to overcome wetness. Planting seedlings while the soil is no longer wet but still moist will optimize the seedling survival rate. The windthrow hazard is moderate because the water table limits root development. Minimizing thinning and planting shallow-rooted species help to reduce windthrow.

Seasonal wetness is the main limitation to use of this soil as a site for dwellings with basements. An alternative is to build dwellings on more suitable, included or nearby soils, such as Depeyster soils, which are better drained than the Wegatchie soil.

The seasonal high water table and potential for frost action are the main limitations to use of this soil as a site for local roads and streets. Constructing roads on raised fill material and installing a drainage system help to compensate for wetness. Providing coarser grained subgrade or base material to frost depth helps to prevent frost action from damaging pavement.

The seasonal high water table and moderately slow permeability are severe limitations to use of this soil as a site for septic tank absorption fields. An alternative is to place the absorption field on nearby or included soils, such as Grenville or Pyrities soils, that are more favorable to this use.

The capability subclass is 5w. The forestland ordination symbol is 2W.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 320,000 acres in the survey area, or nearly 18 percent of the total acreage, meets the soil requirements for prime farmland. Areas of this land are scattered throughout the county, but most are in the northern parts of the county.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not corrective measures have overcome the hazard or limitation. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Over 3,200 acres of the prime farmland consists of well drained and moderately well drained soils on ridgetops and benches on uplands. Nearly 16,000 acres consists of poorly drained, somewhat poorly drained, moderately well drained, and well drained soils on terraces, on flood plains, and on footslopes, toe slopes and fans at the base of hillsides.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Neil J. Cheney, district conservationist, Natural Resources Conservation Service, helped to prepare this section.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed for each soil, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Farmland took in more than 456,000 acres in St. Lawrence County in 1987, according to the Census of Agriculture. Of farmland, about 243,000 acres was cropland. The rest was woodland and other farmland. The acreage in cropland had declined by about 6 percent since the 1982 Census of Agriculture.

Soil erosion is a severe hazard on about 10 percent of the cropland in St. Lawrence County, according to the 1975 Erosion and Sediment Inventory (USDA 1975). The hazard of erosion is related to slope, the erodibility of the soil, the amount and intensity of rainfall, and the type of plant cover.

Loss of soil to erosion is damaging for several reasons, including loss of nutrients and water, formation of gullies on hillsides, deterioration of soil tilth, detrimental sedimentation downslope, and pollution of streams and water reservoirs. Soil productivity is reduced when the surface layer is diminished and increasing amounts of the subsoil are incorporated into the plow layer. This reduction in productivity occurs especially if the subsoil is fine or moderately fine textured, such as in Muskellunge and Huevelton soils, or if the substratum is compact and restricts roots, such as that in Potsdam and Crary soils. Erosion also reduces productivity on soils that tend to be droughty, for example, Waddington and Adams soils, by further decreasing organic matter content and therefore moisture holding capacity. Summerville, Gouverneur, and Nehasne soils are examples of very shallow to moderately deep soils that erosion can permanently damage through loss of effective rooting depth for plants. On soils that have a high silt or very fine sand content, like Salmon and Hailesboro soils, erosion is a severe hazard.

Erosion control measures that work best in St. Lawrence County are providing a protective cover, reducing runoff, and increasing water infiltration. Conservation practices, including conservation tillage, no till, cover crops, crop residue mixed into the surface layer, and a cropping system that emphasizes sod crops, are effective in controlling erosion on soils that have short, irregular slopes, such as Heuvelton, Nicholville, and Adams soils. Contour farming, stripcropping, terraces, and diversions are suitable on soils that have smooth, long, uniform slopes, such as Pyrities and Hogansburg soils.

Erosion control measures generally are needed on slopes of more than 3 percent. Depeyster, Salmon, Nicholville, and other soils are very susceptible to erosion because of high silt or very fine sand content and lack of rock fragments.

Soil blowing, or wind erosion, is a hazard on such soils as the sandy Adams soils or on areas of dune land, particularly if the surface is dry. Planting windbreaks and maintaining plant cover can effectively control soil blowing.

Combinations of conservation practices differ in effectiveness on different soils. Moreover, different combinations can be equally effective on the same soil. The local office of the Natural Resources Conservation Service can assist in planning an effective combination of practices to reduce the hazard of erosion.

Drainage is a major management concern on about 475,000 acres of potential cropland in the survey area. Of this acreage, about 15,000 acres has subsurface drainage. Crops common to the area generally cannot be grown unless extensive drainage is installed on some wet soils. Wet soils include poorly drained and very poorly drained Carbondale, Adjidaumo, Dorval, Roundabout, Deford, Adirondack, and Loxley soils. In most areas of these soils establishing drainage outlets is difficult and expensive because these soils are in low positions on the landscape.

The seasonal high water table limits early planting, plant growth, and harvesting of most crops on somewhat poorly drained soils, such as Muskellunge soils. Where these soils are pattern drained, crop yields commonly are nearly as high as on naturally well drained soils.

Some areas of Grenville, Kalurah, Lovewell, Pyrities, and Berkshire soils, which are well drained or moderately well drained, include small areas of wetter soils where random subsurface drainage is needed to facilitate more uniform management of fields.

Some gently sloping soils, such as Malone, Muskellunge, and Swanton soils, have a seasonal high water table. On these soils installing diversion drains that intercept surface runoff and installing subsurface drains help to lower the water table.

A drainage system varies in design with the kind of soil. A combination of surface and subsurface drainage is needed on most poorly drained and very poorly drained soils. Surface drainage includes open ditches, grassed waterways, land smoothing, diversions, or a bedding system. Subsurface drainage consists mainly of plastic tubing installed randomly or as a pattern system spaced according to soil permeability and the needs of the cropping system.

Drains must be more closely spaced in slowly permeable soils than in more permeable soils. Subsurface drainage is slow on such soils as Muskellunge, Adjidaumo, and Hailesboro soils. In some areas of these soils surface drainage is also needed. On rapidly permeable soils, such as Deford and Naumburg soils, crops respond well to subsurface drainage if adequate outlets are available.

Information on drainage systems is available at the St. Lawrence County Soil and Water Conservation District office.

In many areas stones and boulders on the surface and rock outcrops are limitations to equipment use on cropland and pasture. Stones, boulders, and rock outcrops limit fertilizing, reseeding, and mowing. Areas where many stones and boulders are on the surface, for example, some map units of Kalurah and Pyrities soils, are suited only to permanent pasture.

On some soils clearing the surface of larger stones and boulders is feasible if the soils do not have more limitations, such as seasonal wetness. Insula-Rock outcrop complex, rolling, for example, has these limitations. Generally, the limitation of rock outcrops cannot be overcome.

Available water capacity is important in growing crops. Some soils in the county tend to be droughty. Sandy and gravelly soils; soils that have a layer that restricts roots, such as a substratum of dense basal till; and shallow or moderately deep soils tend to have a fairly low capacity to store water available for plant growth. Sandy and gravelly Trout River soils, sandy Adams soils, and shallow Summerville soils have low or very low available water capacity. On droughty soils green manure crops, crop residue from conservation tillage, cover crops, and manure help to increase the organic matter content, to improve soil tilth, and to increase available water capacity. On droughty soils in dry years irrigation is needed for best crop yields.

Soil tilth is an important factor in the germination of seedlings, the infiltration of water, and the ease of cultivation. Soils in good tilth generally are granular and porous. Tillage practices strongly influence soil tilth. Excessive tillage tends to reduce organic matter content and to break down soil structure. Some soils that are deep, well drained to excessively drained, and coarse textured or moderately coarse textured, such as Adams, Trout River, and Waddington soils, can be tilled without much deterioration of soil tilth. Wetter and finer textured soils, however, such as Nicholville, Wegatchie, Cornish, Matoon, and Heuvelton soils, must be tilled at the proper moisture content to prevent deterioration of natural structure. Plowing or cultivating when these soils are wet causes puddling, a hard surface crust, and clods when the soils dry.

Cultivation at proper soil moisture content, cover crops, green manure crops, sod crops in the crop rotation, crop residue mixed into the surface, and manure help to keep the soils granular and porous.

Soil fertility is critical for crop production. Soils should be tested for lime and fertilizer requirements for a specific crop. Too little fertilizer will result in poor plant growth; too much is uneconomical and will result in pollution of surface or ground water. Crops require different applications of fertilizer and lime depending on the specific soil.

Organic matter content is important in assessing soil fertility. It averages about 3.5 percent in the surface layer of the soils in St. Lawrence County. Poorly drained and very poorly drained soils, such as Adjidaumo soils, have a somewhat higher organic matter content. Nitrogen is released from organic matter, much of it in complex forms that plants cannot use until micro-organisms digest it. A supplement of nitrogen fertilizer is needed. Management practices that increase organic matter content, such as green manure crops, hay crops, and crop residue mixed into the soil, help to improve nitrogen content.

Timely nitrogen fertilization is important for plants to utilize nitrogen to the maximum. Nitrogen is lost to leaching in rapidly permeable soils, such as Raquette soils, or by denitrification in wetter and less permeable soils, such as Muskellunge soils. Best results are obtained if small amounts of nitrogen are applied at timely intervals, at planting, and then as a side dressing while the crop is growing. The soils in St. Lawrence County are generally low in natural phosphorous content (Cooperative Extension Service 1990). Coarse textured soils, such as Trout River and Raquette soils, and acid soils, such as Potsdam and Crary soils, in particular tend to be very low in phosphorous. Adding appropriate amounts of phosphate in the form of commercial fertilizer also is essential for good plant growth.

Most of the soils are low or medium in natural potassium content (Cooperative Extension Service 1990). Fine textured soils, such as Heuvelton, Muskellunge, and Matoon soils, tend to have a higher potassium content than coarser textured soils because of the presence of finely divided potassium silicates in their physical makeup.

Lime is needed on most soils in the survey area to raise the pH to an acceptable level for best yields of most crops. Less lime is needed on such soils as Grenville and Hogansburg soils, which formed in high-lime parent material.

Additions of lime and fertilizer to the soil are based on soil tests. For assistance in obtaining soil tests and recommendations, farmers and other land users should consult the local Cooperative Extension agent. New research findings and fertilizer recommendations are available in the current edition of Cornell Recommends for Field Crops, prepared by the College of Agriculture and Life Sciences, Cornell University, Ithaca, New York. Even without soils tests, Cornell Recommends for Field Crops and this soil survey together can be useful guides in determining lime and fertilizer needs.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals 1 to 8. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation.

Class 7 soils have very severe limitations that make them unsuitable for cultivation.

Class 8 soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w,* or *s,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w* or *s* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The acreage of soils in each capability class and subclass is shown in table 7. The capability classification of the map units in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Forestland Management and Productivity

The forests of St. Lawrence County are the result of disturbances beginning with glaciers scraping the land thousands of years ago. The receding glaciers generated a forest rich in species diversity.

Land disturbance began again in the 1800s and culminated in the 1880s, when most of the northern part of the county and large areas in the southern part were cleared for agriculture. Since then, forest regeneration has reclaimed large areas of marginal land and old abandoned fields.

While land was cleared for agriculture, rugged, remote areas were being logged. The early loggers high-graded the forests, taking only the best quality trees. In leaving the rest amid piles of debris, they created a hazard of wildfire. Wildfires laid bare and blackened thousands of acres of forestland in the Adirondack Mountains. They also destroyed large areas in the southern part of St. Lawrence County.

Weather, insects, disease, wildlife, and possibly pollution also have disturbed and impacted the forests of the county, although perhaps less dramatically.

Today, a maturing forest principally of northern hardwoods and associated forest types cover the county. Variations include red and white oak in the northern part of the county and abundant spruce and fir in the southern part. In 1980, when forests covered 71 percent of St. Lawrence County, commerical forestland took in 1,118,000 acres and reserved forest, 140,500 acres. Of the commerical forest land, 816,000 acres was northern hardwoods; 204,600 acres, softwoods; and 97,500 acres, oak types. From 1970 to 1980, total volume of saw timber increased 36 percent to a total of 2,259 million board feet. Of the 1980 total, maples comprised 696 million board feet of the softwood total; and all other softwoods, 357 million board feet (Consodine 1982).

Table 8 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for an indicator tree species. The number indicates the volume, in cubic meters per hectare per year, which the indicator species can produce in a pure stand under natural conditions. The number 1 indicates low potential productivity; 2 or 3, moderate; 4 or 5, moderately high; 6 to 8, high; 9 to 11, very high; and 12 to 39, extremely high. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *R* indicates steep slopes; *X*, stoniness or rockiness; *W*, excess water in or on the soil; *T*, toxic substances in the soil; *D*, restricted rooting depth; *C*, clay in the upper part of the soil; *S*, sandy texture; *F*, a high content of rock fragments in the soil; *L*, low strength; and *N*, snowpack. The letter *A* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: R, X, W, T, D, C, S, F, L, and N.

In the table, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Windthrow hazard is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a seasonal high water table and depth to bedrock, a fragipan, or other limiting layers. A rating of *slight* indicates that under normal conditions no trees are blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of *moderate* indicates that some trees can be blown down during periods when the soil is wet and winds are moderate or strong. A rating of *severe* indicates that many trees can be blown down during these periods.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species.

Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index* and as *volume of wool fiber.* The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. It applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings and select for their growth rate, quality, value, and marketability.

The *volume*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil and is the one that determines the ordination class.

Trees to manage are those that are suitable for commercial wood production.

Recreation

The soils of the survey area are rated in table 9 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 9, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in table 9 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 12 and interpretations for dwellings without basements and for local roads and streets in table 11.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Kermit Morgan, Canton College of Technology, helped to prepare this section.

St. Lawrence County has a varied wildlife population reflective of a varied habitat. Seven ecological zones have been identified in St. Lawrence County based on natural and social factors (Will 1982). In general, these ecological zones fit into the two physiographic provinces that make up the county: the St. Lawrence Lowlands in the north and the Adirondack Mountains in the south. A fringe area of changing land use patterns separates the two provinces.

The St. Lawrence Lowlands is an area of low relief and relatively slow surface drainage. Low ridges and hills separate abundant wetlands. Dairy farming supported by meadow and cropland is the major land use in this area. Also, much of this area is wooded and, because of trends in agriculture, a large and growing part of this area is in various stages of forest succession. Although major rivers and streams are well distributed, lakes and ponds are clustered in the western part of this area. As result of varied physical elements, the area presents mosaical plant communities with striking transitional zones called ecotones.

Wetlands provide nesting habitat for many varieties of shore birds and waterfowl, including blue heron, black duck, merganser, mallard duck, wood duck, and Canada goose. Many more varieties stop during seasonal migrations to the Atlantic Flyway. To preserve wetlands for wildlife use, the New York State Department of Environmental Conservation manages two major waterfowl areas in this region: Upper and Lower Lakes near Canton and Wilson Hill near Massena. Wetlands provide habitat for muskrat and beaver and help support a valuable fur industry.

Birds that dwell in openland, generally at the edge of wetlands, include bobolink, meadowlark, redwing blackbird, kestrel, and northern harrier. Woodcock, goldfinch, song sparrow, and robins inhabit early stages of forest succession.

Turkey, bluejay, chickadee, ruffed grouse, Great horned owl, and red-tailed hawk all inhabit upland forest.

The St. Lawrence Lowlands, because of its ecological diversity and ecotones, provides excellent habitat for varied terrestrials, such as coyote, white-tailed deer, red fox, various hares, cottontail, grey squirrel, and raccoon.

Streams and lakes in the St. Lawrence Lowlands support mainly warmwater species, such as bass, walleye pike, northern pike, and muskellunge. Some of the deeper lakes support speckled trout, rainbow trout, and lake trout.

The heavily forested Adirondack Mountains have moderate or strong relief, large areas of upland hardwoods, and smaller areas of low-lying wetlands generally supporting a spruce-fir type of forest. They have numerous small lakes and ponds typical of the Canadian Shield, to which the Adirondack Mountains are related.

White-tailed deer, black bear, fisher, coyote, mink, and red fox inhabit all quarters of this physiographic province. Small numbers of pine marten inhabit mature hardwood or coniferous vegetation. The three-toed woodpecker and sparse populations of the rare spruce grouse inhabit lowland areas of the spruce-fir type of forest. Beaver are abundant in small lakes and low-gradient streams. This region also supports a modest population of river otter, generally associated with beaver (Ontario Ministry of Natural Resources 1987).

Loons populate lakes and ponds in the Adirondacks. Other migratory waterfowl nest in wetlands.

The white-throated sparrow is emblematic of the songbirds that inhabit the area.

The waters of this region support such cold-water species as speckled trout, lake trout, and rainbow trout. Bass and northern pike inhabit most rivers and lakes.

The ecological separation of the St. Lawrence Lowlands and the Adirondack Mountains is a fringe area, a chronological transition zone. This zone was once evenly cleared for agriculture, and is now reverting to forest. As forest succession proceeds in this region, it will take on more aspects of the habitat of the Adirondacks and will lose corresponding elements of the habitat of the St. Lawrence Lowlands. Like the change in plant species, the mix of animal species inhabiting this area likely also will evolve (Will 1982).

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 10, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the “Soil Properties” section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 11 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, potential for frost action, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 12 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil to subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 13 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics. These results are reported in table 20.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 15 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 to A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 16 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. A broad class is clay.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 16, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 16, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 16 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Soil Features

Table 18 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air to the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Water Features

Table 19 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 19 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 19 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Engineering Index Test Data

Table 20 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are representative of the series described in the section “Soil Series and Their Morphology.” The New York State Department of Transportation, Bureau of Soil Mechanics, tested the soil samples.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487-00 (ASTM); Mechanical analysis—T 88 (AASHTO), D 422 (ASTM), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 4318 (ASTM); Plasticity index—T 90 (AASHTO), D 4318 (ASTM); Moisture density—T 99 (AASHTO), D 698 (ASTM); Specific gravity—T 100 (AASHTO), D 854 (ASTM); and Shrinkage—T 92 (AASHTO), D 427 (ASTM).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff 1975 and 1990). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 21 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haplaquents (*Hapl*, meaning minimal horizonation, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Mollic* identifies a subgroup of the great group. An example is Mollic Haplaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is sandy over loamy, mixed, nonacid, frigid Mollic Haplaquents.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series (Cline 1963, Jenny 1941, Simonson 1959). A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff 1975) and in “Keys to Soil Taxonomy” (Soil Survey Staff 1990). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section “Detailed Soil Map Units.”

Adams Series

The Adams series consists of very deep, somewhat excessively drained and excessively drained soils formed in sandy deposits on outwash plains, deltas, lake plains, moraines, terraces, and eskers. Slopes range from 0 to 35 percent.

Adams soils are in a drainage sequence with moderately well drained Croghan soils, somewhat poorly drained and poorly drained Naumburg soils, and very poorly drained Searsport soils. They are also near Berkshire, Colton, Flackville, Raquette, and Waddington soils. Adams soils have coarser textures and fewer rock fragments than Berkshire soils. They have less gravel content than Colton, Waddington, and Raquette soils and have a coarser textured substratum than that in Flackville soils.

Typical pedon of Adams sand, 2 to 8 percent slopes, in the town of Brasher, 2,000 feet northwest of intersection of Vice Road and Paxton Road:

Ap—0 to 7 inches; dark brown (7.5YR 4/2) sand; weak fine granular structure; very friable; strongly acid; abrupt smooth boundary.
E—7 to 8 inches; pinkish gray (7.5YR 6/2) sand; single grain; friable; strongly acid; abrupt irregular boundary.
Bh—8 to 9 inches; dark brown (7.5YR 3/2) loamy sand; single grain; some weakly cemented parts (20 percent), friable; strongly acid; clear irregular boundary.
Bs—9 to 13 inches; yellowish red (5YR 4/6) loamy sand; single grain; strongly acid; gradual wavy boundary.
BC—13 to 20 inches; strong brown (7.5YR 5/6) sand; single grain; loose; strongly acid; gradual wavy boundary.
C—20 to 72 inches; light yellowish brown (10YR 6/4) sand; single grain; loose; moderately acid.

Thickness of the solum ranges from 16 to 30 inches. Depth to bedrock is more than 72 inches. Rock fragments, mostly gravel, range from 0 to 5 percent above a depth of 20 inches and from 0 to 20 percent below that depth.

Reaction is very strongly acid to moderately acid in the A and B horizons and is very strongly acid to slightly acid in the C horizon. Some pedons have contrasting very gravelly deposits below a depth of 40 inches.

Some pedons have an O horizon, which is neutral or has hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 2.

The A or Ap horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 1 to 4. Texture is loamy fine sand, loamy sand, fine sand, or sand. Structure is weak or moderate, fine or medium, granular.

The E horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 1 to 3. Texture is loamy fine sand, loamy sand, fine sand, or sand. Structure is granular or the horizon is single grain.

The Bhs or Bh horizon has hue of 2.5YR to 7.5YR, value of 2 or 3, and chroma of 1 to 4. Texture is loamy fine sand, loamy sand, fine sand, or sand. Structure is weak or moderate, fine or medium, granular, or the horizon is massive or single grain. Some pedons have massive bodies 1/2 to 8 inches across.

The Bs horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8. Texture is loamy fine sand, loamy sand, fine sand, or sand in the fine-earth fraction. Structure is weak or very weak, or granular or subangular blocky; or the horizon is massive or single grain.

The BC horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6. Texture is fine sand to coarse sand in the fine-earth fraction.

The C horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 2 to 6. Texture is fine sand to coarse sand in the fine-earth fraction.

Adirondack Series

The Adirondack series consists of somewhat poorly drained and poorly drained loamy soils that are shallow or moderately deep to compact glacial till and very deep to bedrock. These soils are in shallow depressions or along drainageways on till planes on uplands. Slopes are dominantly 0 to 7 percent, but the range is 0 to 15 percent.

Adirondack soils are near well drained Potsdam and Berkshire soils and moderately well drained Crary and Sunapee soils in higher topographic positions. They are also near very poorly drained Tughill soils and poorly drained Lyme soils that both have a more friable substratum than that in Adirondack soils.

Typical pedon of Adirondack fine sandy loam, in an area of Adirondack-Tughill-Lyme complex, 0 to 8 percent slopes, very bouldery, in the town of Clifton, 50 feet west of a point on a road in the woods 1.3 miles west of New York Route 3, 7.1 miles east of the village of Cranberry Lake:

Oi—0 to 2 inches; dark reddish brown (5YR 2/2) slightly decomposed forest litter, dark brown (7.5YR) dry; many fine roots; very strongly acid; abrupt wavy boundary.
Oa—2 to 3 inches; black (N 2/0) highly decomposed organic material, very dark gray (5YR 3/1) dry; moderate medium and fine granular structure; friable, slightly sticky; many fine and few medium and coarse roots; extremely acid; abrupt wavy boundary.
A—3 to 8 inches; black (N 2/0) fine sandy loam, very dark gray (5YR 3/1) dry; weak fine and medium subangular blocky structure; friable; many fine and medium roots; 10 percent rock fragments, mostly cobbles and stones; very strongly acid; abrupt distinct boundary.
E—8 to 10 inches; gray (5YR 6/1) stony fine sandy

loam; many fine distinct reddish brown (5YR 5/4) mottles; weak medium subangular blocky structure; friable; common fine roots; 25 percent rock fragments, mostly stones; strongly acid; clear distinct boundary.

Bh—10 to 13 inches; dark reddish brown (5YR 3/2) stony fine sandy loam; many fine faint reddish brown (5YR 5/4) mottles; weak medium subangular blocky structure; friable; many fine and common medium roots; many fine vesicular pores; 25 percent rock fragments, mostly stones; strongly acid; clear wavy boundary.

Bhs—13 to 17 inches; dark reddish brown (5YR 3/3) stony loam; few fine distinct brown (7.5 YR 5/4) mottles; weak medium subangular blocky structure; friable; few fine and few medium roots; few fine vesicular pores; 25 percent rock fragments; strongly acid; gradual wavy boundary.

Bs—17 to 22 inches; reddish brown (5YR 4/4) stony sandy loam; few fine faint dark reddish brown (5YR 3/2) mottles; weak medium subangular blocky structure; friable; few fine roots; few fine vesicular pores; 25 percent rock fragments, mostly stones; strongly acid; clear wavy boundary.

Cdg—22 to 72 inches; dark grayish brown (10YR 4/2) stony sandy loam; massive; very firm; 20 percent rock fragments, mostly stones; strongly acid.

The thickness of the solum ranges from 15 to 30 inches. Rock fragments range from 5 to 35 percent throughout.

Some pedons have an O horizon that ranges from fibric to sapric material. Reaction is extremely acid or very strongly acid.

The A horizon is neutral or has hue of 5YR to 10YR, value of 1 to 3, and chroma of 0 to 3. Texture is sandy loam to silt loam. Reaction ranges from extremely acid to strongly acid.

The E horizon, where it occurs, has hue of 5YR to 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is sandy loam to silt loam. Reaction ranges from extremely acid to strongly acid.

The Bh horizon has hue of 5YR or 7.5YR, value of 2 or 3, and chroma of 1 or 2. Texture is sandy loam to silt loam. Reaction ranges from extremely acid to strongly acid. Consistence is friable or very friable.

The Bhs horizon has hue of 5YR or 7.5YR and value and chroma of 3. Texture is sandy loam to silt loam. Reaction ranges from extremely acid to strongly acid. Consistence is friable or very friable.

The Bs horizon has hue of 5YR or 7.5YR, value of 3 to 5, and chroma of 3 or 4. Texture is sandy loam to silt loam. Reaction ranges from extremely acid to strongly acid. Consistence is friable or very friable.

The BC horizon, where it occurs, has hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 1 to 4. Texture is sandy loam to silt loam. Reaction is strongly acid or very strongly acid. Consistence is friable or firm.

The Cdg horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2. Texture is fine sandy loam to loamy sand. Reaction is strongly acid or moderately acid. The horizon is massive or platy. Consistence is firm or very firm.

Adjidaumo Series

The Adjidaumo series consists of very deep, poorly drained and very poorly drained soils formed in fine sediments deposited in marine environments. These soils are on marine plains and in basins on uplands. Slopes range from 0 to 2 percent.

Adjidaumo soils are in a drainage sequence with moderately well drained Heuvelton soils and somewhat poorly drained Muskellunge soils. They are also near Wegatchie, Swanton, Stockholm, Runeberg, Dorval, Ogdensburg, Hannawa, and Guff soils. Adjidaumo soils have finer textures than Wegatchie, Swanton, Stockholm, Runeberg, Ogdensburg, and Hannawa soils. Adjidaumo soils are mineral, but Dorval soils are organic. Unlike Adjidaumo soils, Guff soils are moderately deep.

Typical pedon of Adjidaumo silty clay, in the town of Dekalb, 80 feet northeast of a point on Gibbons Street, 180 feet south of junction of U.S. Route 11 and Gibbons Street:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silty clay; gray (10YR 5/1) mottles; weak fine subangular blocky structure; friable, sticky; many very fine and medium interstitial pores; less than 1 percent rock fragments; neutral abrupt smooth boundary.

Bg1—8 to 18 inches; gray (N 6/0) silty clay; many coarse prominent yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure; friable, sticky; few fine and very fine roots; few medium vesicular pores, and few fine and medium interstitial pores; less than 1 percent rock fragments; neutral; gradual wavy boundary.

Bg2—18 to 27 inches; gray (N 5/0) clay; many medium prominent yellowish brown (10YR 5/4) and many coarse faint grayish brown (10YR 5/2) mottles; weak fine subangular blocky structure; friable, sticky; few fine roots; common fine and very fine vesicular and few fine tubular pores; less than 1 percent rock fragments; neutral; clear wavy boundary.

Cg—27 to 72 inches; gray (N 5/0) clay; many coarse prominent dark brown (10YR 4/3) and few medium prominent yellowish brown (10YR 5/4) mottles; massive; firm, sticky; very few fine roots; very few fine vesicular pores; less than 1 percent rock fragments; very slightly effervescent; slightly alkaline.

Depth to carbonates ranges from 24 to 60 inches. Rock fragments range from 0 to 2 percent in the solum and from 0 to 20 percent in the C horizon.

The A horizon has hue to 10YR, value of 2 or 3, and chroma of 0 to 2. In most pedons texture is silty clay loam or silty clay, but the range includes silt loam and clay and in some pedons their analogs. Reaction is slightly acid or neutral.

The B horizon is neutral or has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 2. Texture is silty clay loam, silty clay, or clay. Reaction is neutral or slightly alkaline.

The C horizon is neutral or has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 0 to 3. Texture is silty clay loam, silty clay, or clay. In some pedons the horizon has thin layers of silt loam, very fine sand, or fine sand. In many pedons it is varved. It is massive or structure is platy. Reaction is slightly alkaline or moderately alkaline.

Berkshire Series

The Berkshire series consists of very deep, well drained soils formed in loamy glacial till on valley sides and uplands. Slopes range from 3 to 35 percent.

Berkshire soils are in a drainage sequence with moderately well drained Sunapee soils and poorly drained Lyme soils. They are also near Adams, Colton, Lyman, Potsdam, and Tunbridge soils. Berkshire soils have less sand than Adams soils have and less sand and gravel than Colton soils have. Berkshire soils are deeper to bedrock than Tunbridge and Lyman soils. The substratum in Berkshire soils is less firm and dense than that in Potsdam soils.

Typical pedon of Berkshire loam, in an area of Sunapee and Berkshire soils, 3 to 8 percent slopes, very bouldery, in the town of Lawrence, 650 feet south-southwest of bend in Savage Road on power line, near boundary of Franklin County:

Ap—0 to 7 inches; dark brown (7.5YR 3/2) loam; weak fine granular structure; friable; 5 percent rock fragments; strongly acid; abrupt smooth boundary.

Bs—7 to 11 inches; brown (7.5YR 5/4) loam; weak medium subangular blocky structure; friable, slightly smeary; 10 percent rock fragments; strongly acid; clear wavy boundary.

Bw—11 to 30 inches; brown (10YR 5/3) gravelly loam; weak fine subangular blocky structure; friable; 20 percent rock fragments; strongly acid; clear irregular boundary.

C—30 to 72 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; friable; 10 percent rock fragments; strongly acid.

The thickness of the solum ranges from 16 to 36 inches. The A horizon is, by volume, 5 to 20 percent gravel or channers, 0 to 10 percent cobbles, and 0 to 10 percent stones or boulders. The B and C horizons are, by volume, 10 to 20 percent gravel or channers, 0 to 10 percent cobbles, and 0 to 5 percent stones or boulders. In unlimed areas reaction ranges from extremely acid to moderately acid.

The A horizon is neutral or has hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 3. The Ap horizon has hue of 5YR to 10YR and value and chroma of 2 to 4. Texture in the A or Ap horizon ranges from sandy loam to silt loam.

The E horizon, where it occurs, is neutral or has hue of 2.5YR to 2.5Y, value of 4 to 6, and chroma of 0 to 2. Texture ranges from sandy loam to silt loam.

The Bhs horizon, where it occurs, has hue of 2.5YR to 7.5YR, value of 2 to 4, and chroma of 3 or 4. Texture is fine sandy loam, sandy loam, loam, or silt loam.

The Bh horizon, where it occurs, is up to 4 inches thick and has value and chroma of 3 or less. Texture is similar to that of the Bhs horizon.

The Bs horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 4 to 8. Texture is fine sandy loam, sandy loam, loam, or silt loam.

The Bw horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 2 to 4. Texture is fine sandy loam, sandy loam, or loam.

The B horizon has weak granular or subangular blocky structure. Maximum combined thickness of the spodic horizon is 16 inches.

The BC horizon, where it occurs, is as much as 5 inches thick.

The C horizon has hue of 10YR to 5Y, value of 3 to 6, and chroma of 2 to 4. Texture ranges from sandy loam to loam. In some pedons it has individual layers of coarse sand or loamy coarse sand below a depth of 40 inches. The horizon is dominantly friable, but in some pedons it has some discrete firm masses or strata.

Borosaprists

Borosaprists consist of shallow to very deep, very poorly drained organic soils that formed in dark reddish brown, well decomposed plant remains. These soils, which are inundated with shallow water throughout much of the year, are called freshwater marsh. They are in depressions near open bodies of water or where beavers have dammed water courses. Slopes range from 0 to 1 percent.

Borosaprists are in a soil complex that has components of Tunbridge and Ricker soils or in an undifferentiated group that has a component of Fluvaquents. They are near Adjidaumo, Colton, Searsport, and Wegatchie soils. Borosaprists are organic, but Adjidaumo, Colton, Searsport, Tunbridge, and Wegatchie soils are mineral. Borosaprists are similar to Ricker soils but unlike Ricker soils they are lower on the landscape, are subject to frequent flooding, and have an aquic moisture regime.

Borosaprists are highly variable, and thus a typical pedon is not provided. Depth to bedrock is variable but is generally below a depth of 60 inches. The organic material is dominantly herbaceous sapric material but includes woody sapric material in the subsurface tier.

Borosaprists have organic material more than 16 inches thick that overlies mineral soil deposits. Woody fragments make up as much as 10 percent of the volume in the lower layers. Reaction ranges from extremely acid to neutral.

The organic tiers have hue of 2.5YR to 5Y, value of 2 or 3, and chroma of 0 to 2. They are, to a depth of about 10 inches, well decomposed woody or herbaceous plant remains that have less than 15 percent rubbed fiber content. Below a depth of about 10 inches the organic tiers are not well decomposed.

The mineral substratum is neutral or has hue of 5YR to 10YR, value of 3 to 5, and chroma of 1 or 2. Texture is silty clay loam to loamy sand.

Carbondale Series

The Carbondale series consists of very deep, very poorly drained soils in depressions on till plains, outwash plains, and lake plains. These soils formed in organic deposits. Slopes range from 0 to 2 percent.

Carbondale soils are very near Dorval soils. In places, they are also near Borosaprists; Fluvaquents; Hogansburg, Kalurah, and Malone soils; and Udifluvents. Unlike Carbondale soils, Borosaprists, Fluvaquents, and Udifluvents are not subject to frequent flooding. Unlike Carbondale soils, Hogansburg, Kalurah, and Malone soils are mineral.

Typical pedon of Carbondale muck, in the town of Rossie, 1,200 feet northeast of Butler Road, 400 feet southeast of Rossie-Hammond townline, in a woodlot:

Oa1—0 to 12 inches; dark reddish brown (5YR 2/2) broken face and rubbed, sapric material (muck); about 30 percent fibers, 10 percent after rubbing; weak fine and medium granular structure; very friable; primarily woody and herbaceous fibers; many fine, common medium, and few coarse roots; neutral; clear wavy boundary.

Oa2—12 to 40 inches; dark reddish brown (5YR 2/2) broken face and rubbed sapric material (muck); about 45 percent fibers, 15 percent after rubbing; massive; very friable; primarily woody and herbaceous fibers; few fine, medium, and coarse roots; neutral; clear wavy boundary.

Oe1—40 to 74 inches; black (5YR 2/1) broken face and dark reddish brown (5YR 2/2) rubbed hemic material (mucky peat); about 90 percent fibers, 55 percent after rubbing; massive; very friable; primarily woody and herbaceous material; neutral; clear wavy boundary.

Oe2—74 to 99 inches; dark reddish brown (5YR 2/2) broken face and dark reddish brown (5YR 3/2) rubbed, hemic material (mucky peat); about 70 percent fibers, 30 percent after rubbing; massive; very friable; primarily woody and herbaceous materials; neutral; clear wavy boundary.

The organic layers are more than 51 inches thick. Organic material has hue of 10YR, 7.5YR, or 5YR, or is neutral; value is 2 or 3 and chroma is 0 to 2. Some pedons have woody fragments that range from 1 to several inches in diameter, throughout.

The surface tier contains either sapric (muck) or hemic (mucky peat) materials, or both. In some pedons it is a thin, 1- to 3-inch fibric layer. It generally has granular structure, but in some pedons the primary structure is weak or moderate coarse blocky or prismatic. It commonly is derived from herbaceous plants, but in some pedons it has some woody material. Below a depth of 12 inches woody materials typically have a small amount of recognizable fiber.

More than one-half the volume of the subsurface tier is sapric material (muck). Where this layer contains sapric (muck), fibric (peat), and hemic materials (mucky peat), sapric material (muck) is the largest component. The subsurface tier dominantly has pH of 6.5 to 7.5 in calcium chloride and pH of 5.5 to 7.0 in water, and the full range is from pH of 5.5 to less than 7.8 in calcium chloride. It is commonly massive, but some of it breaks into thick to thin plates that reflect the mode of deposition.

In most pedons the bottom tier is dominantly hemic material (mucky peat), and in some pedons it is entirely hemic material (mucky peat). More than 10 inches of the subsurface and bottom tiers are hemic material (mucky peat). Most of the bottom tier is massive; some of it breaks into thick to thin, possibly depositional plates.

Colton Series

The Colton series consists of very deep, excessively drained soils formed in glacial fluvial deposits on glacial outwash plains, eskers, and kames. Slopes range from 0 to 35 percent.

Colton soils are near, and have a higher gravel content than, Adams, Duxbury, Berkshire, and Croghan soils. In places they are also near, and have a higher gravel content than, Potsdam and Crary soils.

Typical pedon of Colton gravelly loamy sand, in an area of Colton-Duxbury complex, 2 to 8 percent slopes, in Town of Pitcairn, 330 feet south of a point on New York Route 3 that is 3,700 feet east of junction of New York Route 3 and Jayville Road:

Ap—0 to 6 inches; dark reddish brown (10YR 3/2) gravelly loamy sand; weak fine and medium granular structure; very friable; common fine and medium roots; 25 percent rock fragments (5 percent cobbles, 20 percent gravel); very strongly acid; abrupt wavy boundary.

Bhs—6 to 7 inches; dark reddish brown (5YR 3/3) very gravelly sand; weak fine granular structure; very friable; few fine and medium roots; 40 percent rock fragments (35 percent gravel, 5 percent cobbles); strongly acid; clear wavy boundary.

Bs—7 to 14 inches; reddish brown (5YR 4/4) very gravelly sand; weak medium subangular blocky structure parting to single grain; very friable; few fine and medium roots; 50 percent rock fragments; strongly acid; diffuse wavy boundary.

BC—14 to 20 inches; brown (7.5YR 4/4, 10YR 4/3, and 10YR 5/3) and pale brown (10YR 6/3) very gravelly sand; single grain; loose; few fine and medium roots; 50 percent rock fragments; strongly acid; diffuse wavy boundary.

C—20 to 72 inches; brown (10YR 5/3 and 10YR 4/3) and pale brown (10YR 6/3) very gravelly sand; single grain; loose; 40 percent rock fragments; strongly acid.

Thickness of the solum ranges from 18 to 45 inches. Rock fragments range, by volume, from 15 to 35 percent in the A horizon, 15 to 55 percent in the B horizon, and 35 to 70 percent in the C horizon.

The Ap horizon has hue of 10YR to 5YR, value of 3 to 5, and chroma of 2 to 4. Texture is sand or loamy coarse sand to fine sandy loam in the fine-earth fraction. Structure is granular or the horizon is structureless. In unlimed areas reaction is extremely acid to moderately acid. Some unplowed pedons have a thin A horizon and chroma of 3.

The E horizon, where it occurs, has hue of 5YR to 10YR, value of 4 to 7, and chroma of 1 or 2. Texture is coarse sand to loamy fine sand in the fine-earth fraction. Some pedons have layers that range to fine sandy loam. Reaction is extremely acid to moderately acid.

The Bh horizon, where it occurs, has hue of 2.5YR to 10YR, value of 2 or 3, and chroma of 1 or 2. Texture ranges from coarse sand to loamy fine sand in the fine-earth fraction. Some pedons have layers that range to fine sandy loam. Structure is granular, or the horizon is massive and very friable or friable and in places has cemented masses. Reaction is extremely acid to moderately acid. Some pedons have a Bhs horizon that has value and chroma of 3 or less.

The Bs horizon has hue of 2.5YR to 10YR, value of 3 to 6, and chroma of 3 to 8. Texture ranges from coarse sand to loamy fine sand in the fine-earth fraction. Some pedons have thin layers that range to fine sandy loam. Structure is granular or subangular blocky or the horizon is massive or single grain. Reaction is extremely acid to strongly acid.

The BC horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 6. Texture ranges from coarse sand to loamy fine sand in the fine-earth fraction. Reaction is extremely acid to moderately acid. Some pedons have a CB horizon.

The C horizon has hue of 7.5YR to 5Y, value of 3 to 7, and chroma of 2 to 6. It consists of gravel, cobbles, or stones with loamy sand, sand, or coarse sand in the interstices. It has varying degrees of stratification. Reaction is very strongly acid to slightly acid.

Cook Series

The Cook series consists of very deep, very poorly drained and poorly drained soils on beaches and glacial till plains. These soils formed in sandy sediments overlying loamy sediments. Slopes range from 0 to 2 percent.

Cook soils are in a drainage sequence with somewhat poorly drained Coveytown, moderately well drained Fahey, and excessively drained Trout River soils. Cook soils are near Adams, Croghan, Dorval, Munuscong, Naumburg, and Searsport soils. Unlike Cook soils, Adams, Croghan, Naumburg, and Searsport soils are not sandy below a depth of 37 inches; Dorval soils are organic; and Munscong soils have a loamy subsoil and a clayey substratum.

Typical pedon of Cook loamy fine sand, in the town of Lawrence, 75 feet east of Winn Road, 1.1 miles north of Hallahan Road:

A—0 to 7 inches; very dark gray (10YR 3/1) loamy fine sand, gray (10YR 5/1) dry; few fine prominent reddish brown (5YR 4/4) mottles; weak fine and medium granular structure; friable; many fine and medium roots; 10 percent rock fragments (mostly stones); moderately acid; clear wavy boundary.

Cg1—7 to 39 inches; grayish brown (10YR 5/2) loamy sand; many medium faint brown (10YR 5/3) and common medium prominent strong brown (7.5YR 5/8) mottles; single grain; loose; few fine roots in the upper 5 inches; 10 percent rock fragments (mostly stones); slightly acid; clear wavy boundary.

2Cg2—39 to 72 inches; gray (10YR 5/4) mottles; massive; friable; 20 percent rock fragments (stones); neutral.

Depth to bedrock is more than 60 inches. Depth to loamy till ranges from 20 to 39 inches. Depth to carbonates ranges from 24 to 80 inches or more. Rock fragments are at a depth ranging from 24 to 80 inches or more. Rock fragments range from 5 to 35 percent above a depth of 30 inches, exclusive of the A horizon, which ranges from 5 to 15 percent. Rock fragments range from 10 to 50 percent below a depth of 30 inches.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture ranges from loamy sand to mucky loamy fine sand. Structure is weak or moderate granular. Consistence is friable or very friable. Reaction ranges from strongly acid to neutral.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. Texture is sand to loamy fine sand. The horizon is structureless and loose. Reaction ranges from moderately acid to neutral.

The 2C horizon has colors similar to those of the C horizon. Texture ranges from sandy loam to fine sandy loam. Reaction ranges from neutral to moderately alkaline.

Cornish Series

The Cornish series consists of very deep, somewhat poorly drained soils formed in alluvial sediments on flood plains. Slopes range from 0 to 2 percent.

Cornish soils are in a drainage sequence with moderately well drained Lovewell soils. They are also near Adjidaumo soils, flooded phase; Borosaprists; Fluvaquents; and Udifluvents. Cornish soils are not as fine textured as Adjidaumo soils. Unlike Cornish soils, Borosaprists do not have a mucky surface layer. Fluvaquents and Udifluvents formed in old river channels, on gravel bars, and in other low areas on the flood plain; thus, they have variable drainage and texture.

Typical pedon of Cornish silt loam, in the town of Dekalb, 0.15 mile west on County Route 86 from the junction with New York Route 812 (just across the Oswegatchie River), 0.3 mile south on farm trail (following path of the river), 100 feet from the river; in a hayfield:

Ap—0 to 8 inches; dark brown (10YR 4/3) silt loam; weak fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

Bw1—8 to 11 inches; dark yellowish brown (10YR 4/4) silt loam; common fine distinct light brownish gray (10YR 6/2) and few fine distinct strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; common fine vesicular and few fine tubular pores; strongly acid; clear wavy boundary.

Bw2—11 to 21 inches; brown (10YR 5/3) silt loam; many medium distinct light brownish gray (10YR 6/2) and common medium distinct dark brown (7.5YR 4/4) mottles; weak fine and medium subangular blocky structure; friable; common fine and few medium vesicular pores; strongly acid; clear wavy boundary.

Cg1—21 to 35 inches; light brownish gray (10YR 6/2) silt loam; common coarse distinct brown (10YR 5/3), common medium distinct dark brown (7.5YR 3/4), and few medium strong brown (7.5YR 5/6) mottles; massive; friable; common fine and few large vesicular pores; strongly acid; clear wavy boundary.

Cg2—35 to 42 inches; gray (10YR 6/1) silt loam; common medium distinct brown (10YR 5/3) and common fine prominent yellowish red (5YR 4/6) mottles; massive; friable; strongly acid; clear wavy boundary.

Cg3—42 to 46 inches; gray (10YR 6/1) silt loam; common medium distinct brown (10YR 5/3) and few medium distinct brown (7.5YR 5/6) mottles; massive; friable; strongly acid; clear wavy boundary.

Ab—46 to 50 inches; very dark grayish brown (10YR 3/2) silt loam; common medium distinct strong brown (7.5YR 4/6) and few medium distinct gray (10YR 6/1) mottles; small ($^1/_8$- to $^1/_4$-inch wide) bodies of very dark gray (7.5YR 3/0) organic matter; massive; friable; strongly acid; clear wavy boundary.

Cbg—50 to 72 inches; gray (10YR 6/1) silt loam; common medium distinct brown (10YR 5/3), weak medium distinct strong brown (7.5YR 5/6), and common medium prominent reddish brown (5YR 4/3) mottles; massive; friable; moderately acid.

Thickness of the solum ranges from 20 to 38 inches. In unlined areas texture ranges from very strongly acid to slightly acid throughout. Some pedons have buried horizons.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture is silt loam or very fine sandy loam. Structure is weak to strong, fine or medium granular.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 6. Texture is silt loam or very fine sandy loam. Structure is weak or moderate, fine or medium granular or subangular blocky.

The BC horizon, where it occurs, has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 3 to 6. Texture is silt loam or very fine sandy loam. Structure is weak fine or medium granular.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. Texture is silt loam, very fine sandy loam, or loamy very fine sand. In some pedons below a depth of 40 inches strata ranges from silt loam to fine gravel. The C horizon, depending on texture, is massive or single grain.

The C horizon in the typical pedon is outside the range for this series. The Official Series Description allows 2.5Y or 5Y in the BC and C horizons, a high value of 5, and a low chroma of 2, but a low chroma of 3 in the BC horizon. However, pedons sampled in St. Lawrence County are consistently 10YR in the C horizon, and the typical pedon has value of 6 and chroma of 1.

Coveytown Series

The Coveytown series consists of very deep, somewhat poorly drained soils formed in sandy materials that overlie loamy glacial till. These soils are on broad, wave-washed till plains and at the margins of lake and marine plains. Slopes range from 0 to 6 percent.

Coveytown soils are in a drainage sequence with well drained Trout River soils, moderately well drained Fahey soils, and very poorly drained and poorly drained Cook soils. They are near Hailesboro, Malone, Naumburg, and Stockholm soils. Coveytown soils have a coarser texture than that of Hailesboro and Malone soils. Unlike Naumburg soils, Coveytown soils have a loamy till substratum above a depth of 40 inches. Unlike Coveytown soils, Stockholm soils have a clayey substratum.

Typical pedon of Coveytown loamy fine sand, in the town of Stockholm, 300 feet southwest of junction of Curtis Road and old New York Route 11B:

Oi—0 to 1 inch; slightly decomposed forest litter.

A—1 to 5 inches; very dark gray (10YR 3/1) loamy fine sand; weak medium granular structure; very friable; many fine roots; 10 percent rock fragments; strongly acid; abrupt irregular boundary.

Bw1—5 to 11 inches; brown (10YR 4/3) gravelly loamy fine sand; common fine prominent reddish brown (5YR 4/4) and common medium faint dark grayish brown (10YR 4/2) mottles; single grain; loose; few fine roots; 20 percent rock fragments (gravels and cobbles); strongly acid; abrupt smooth boundary.

Bw2—11 to 20 inches; brown (10YR 5/3) gravelly loamy fine sand; many coarse faint grayish brown (10YR 5/2) and common medium distinct dark brown (7.5YR 4/4) mottles; single grain; loose; few fine roots; 25 percent rock fragments (gravels and cobbles); moderately acid; abrupt smooth boundary.

BC—20 to 38 inches; brown (10YR 4/3) gravelly loamy sand; common fine distinct yellowish brown (10YR 5/3) and few medium faint dark grayish brown (10YR 4/2) mottles; single grain; loose; 20 percent rock fragments (cobbles and gravels); moderately acid; clear wavy boundary.

2C—38 to 72 inches; brown (40 percent 10YR 5/3) and yellowish brown (30 percent 10YR 5/4 and 30 percent 10YR 5/6) gravelly sandy loam; massive; firm; 30 percent rock fragments (20 percent cobbles and gravel, 10 percent large stones); neutral; slightly effervescent.

The thickness of the solum and depth to firm loamy till range from 20 to 39 inches. Carbonates are at a depth ranging from 30 to 60 inches. Rock fragments range from 5 to 15 percent in the A horizon, 5 to 35 percent in the B and C horizons, and 25 to 35 percent in the 2C horizon.

In undisturbed areas, the A horizon is black or very dark gray. In pastured or plowed areas, the Ap horizon is very dark brown to dark grayish brown. Texture ranges from fine sandy loam to sand. Structure is weak or moderate granular. Reaction ranges from strongly acid to slightly acid.

The B horizon in the upper part has chroma of 3 or 4. Above a depth of 20 inches it has chroma of 2 or 1, value of 4 or 5, and hue of 10YR to 2.5Y. Texture ranges from loamy fine sand to sand. The horizon is single grain. Reaction ranges from strongly acid to neutral.

The 2C horizon is grayish brown, olive brown, or olive gray. Texture ranges from loam to sandy loam. It is massive or has weak platy structure. Reaction ranges from slightly acid to moderately alkaline.

Crary Series

The Crary series consists of very deep, moderately well drained soils on upland till plains. These soils formed in a loamy mantle that consists mainly of eolian silt and very fine sand over sandy glacial till derived mainly from sandstone, gneiss, and granite. Slopes range from 0 to 15 percent, but are mainly 1 to 8 percent.

Crary soils are in a drainage sequence with well drained Potsdam soils and somewhat poorly drained and poorly drained Adirondack soils. They are near Tunbridge, Lyman, Berkshire, and Sunapee soils. Tunbridge soils have bedrock at a depth of 20 to 40 inches, and Lyman soils have bedrock at a depth of 10 to 20 inches. Unlike well drained Berkshire soils and moderately well drained Sunapee soils, both of which derived from glacial till, Crary soils have a firm and dense substratum.

Typical pedon of Crary silt loam, 3 to 8 percent slopes, in the town of Russell, 1.5 miles south of Palmerville, 50 feet east of Blanchard Hill Road, 300 feet north of barn foundation, on about the 910-foot contour:

Ap—0 to 8 inches; dark brown (10YR 3/3) silt loam; weak fine and very fine granular structure; very friable; many roots; 1 percent rock fragments; strongly acid; abrupt smooth boundary.

Bs1—8 to 14 inches; dark brown (7.5YR 4/4) silt loam; very weak, very fine granular structure; very friable; many fine roots; 1 percent rock fragments; strongly acid; gradual wavy boundary.

Bs2—14 to 20 inches; yellowish brown (10YR 5/4) very fine sandy loam high in coarse silt; many fine faint dark yellowish brown (10YR 4/4) and distinct grayish brown (10YR 5/2) mottles; very weak, very fine granular structure; friable; few fine roots; 5 percent rock fragments; strongly acid; abrupt wavy boundary.

E—20 to 24 inches; grayish brown (10YR 5/2) very fine sandy loam; common medium distinct yellowish brown (10YR 5/4 and 10YR 5/6) mottles; weak thin platy structure; firm; few fine roots; 10 percent rock fragments; strongly acid; abrupt wavy boundary.

2Cd1—24 to 36 inches; brown (7.5YR 4/4) stony fine sandy loam; few coarse distinct strong brown (7.5YR 5/6) mottles; structureless, massive within very coarse prisms 2 to 3 feet across; very firm; brittle; 25 percent rock fragments; strongly acid; diffuse boundary.

2Cd2—36 to 50 inches; brown (7.5YR 5/2) stony fine sandy loam; structureless, massive; very firm; slightly brittle; 30 percent rock fragments; strongly acid; diffuse wavy boundary.

2Cd3—50 to 72 inches; brown (7.5YR 5/2) stony fine sandy loam; moderate medium lens-like platy structure; firm; 30 percent rock fragments; strongly acid.

Depth to bedrock is more than 60 inches. Thickness of the solum ranges from 16 to 37 inches. Thickness of either the eolian or the fluvial (water-sorted) mantle ranges from 16 to 40 inches. Rock fragments, including gravel, cobbles, and stones, range from 0 to 15 percent in the surficial mantle and from 10 to 35 percent in the underlying, dense glacial till.

In uncleared areas pedons have an O horizon as much as 4 inches thick and an A horizon as much as 5 inches thick.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4. Texture is silt loam, very fine sandy loam, or fine sandy loam. Reaction ranges from moderately acid to very strongly acid.

The Bs horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 6. Texture is silt loam, very fine sandy loam, or loam. Structure is granular or subangular blocky.

Some pedons have a darker Bh or Bhs horizon above the Bs horizon.

The E horizon has hue of 5YR to 10YR, value of 4 to 7, and chroma of 2 or 3. Texture is silt loam, very fine sandy loam, or loam. Consistence is friable or firm. In uncleared areas the E horizon is as much as 5 inches thick.

Some pedons have a BC or a 2BC horizon, and a thin, friable or firm 2E horizon just above the Cd horizon.

The 2Cd horizon has hue of 5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture of the fine-earth fraction is fine sandy loam, loam, or sandy loam. Some pedons have lenses of loamy sand or loamy fine sand. Structure is weak prismatic, or platy, or the horizon is massive. Consistence is firm or very firm. Reaction ranges from strongly acid to slightly alkaline. Some pedons have a thin C horizon just above the 2Cd horizon.

Croghan Series

The Croghan series consists of very deep, moderately well drained soils on sand plains. These soils formed in sandy, deltaic or lakeshore deposits of Pleistocene age. Slopes range from 0 to 8 percent.

Croghan soils are in a drainage sequence with somewhat excessively drained to excessively drained Adams soils, somewhat poorly drained and poorly drained Naumburg soils, and very poorly drained Searsport soils. They are also near Colton, Fahey, Flackville, Hogansburg, and Kalurah soils. Croghan soils are less gravelly than Colton and Fahey soils. Unlike Croghan soils, Flackville soils have a clay substratum. Croghan soils are sandier than Hogansburg and Kalurah soils.

Typical pedon of Croghan sand, 0 to 8 percent slopes, in the town of Louisville, 80 feet north, 36 degrees east of the dirt access road to Wilson Hill

Wildlife Management Area, 520 feet northwest from junction of New York Route 37, in an abandoned field:

Ap—0 to 7 inches; dark brown (7.5YR 3/2) sand; very weak fine and medium subangular blocky structure; very friable; many fine and common medium roots; matrix of 50 percent stripped sand grains; very strongly acid; abrupt smooth boundary.

E—7 to 10 inches; pinkish gray (7.5YR 6/2) sand; single grain; very friable; common fine roots; very strongly acid; abrupt broken boundary.

Bh—10 to 12 inches; dark reddish brown (5YR 3/2 and 5YR 3/3) sand; very weak medium subangular blocky structure; 75 percent very friable, 25 percent firm; common fine roots; very strongly acid; abrupt broken boundary.

Bs1—12 to 20 inches; red (2.5YR 4/8) fine sand and 20 percent reddish yellow (7.5YR 6/8) coarse, contorted bodies; massive; friable; few, medium, firm red (2.5YR 4/8) nodules; common fine roots; strongly acid; clear wavy boundary.

Bs2—20 to 33 inches; strong brown (7.5YR 5/8) fine sand; few fine and many medium, distinct, brown (7.5YR 5/2) and pinkish gray (7.5YR 6/2) and common fine distinct brown (7.5YR 5/4) mottles; weak coarse subangular blocky structure; friable; 20 to 45 percent firm and very firm dark reddish brown (5YR 3/4) parts; few fine roots; few discontinuous areas of stripped sand grains in the upper part; strongly acid; clear wavy boundary.

BC—33 to 44 inches; brown (7.5YR 4/2 and 7.5YR 4/4) fine sand; common medium distinct yellowish brown (10YR 5/4) and pale brown (10YR 6/3) mottles; massive; firm; few fine roots; strongly acid; clear wavy boundary.

C—44 to 72 inches; brown (7.5YR 4/4) fine sand; common fine distinct reddish brown (5YR 4/3) and light gray (10YR 7/1) mottles; single grain; loose; strongly acid.

The thickness of the solum ranges from 20 to 60 inches. Depth to bedrock is 60 inches or more. Most pedons are free of rock fragments; some pedons are, by volume, as much as 5 percent gravel in the A horizon and as much as 15 percent gravel in the B and C horizons.

The Ap horizon has hue of 7.5YR to 10YR, or it is neutral; value is 3 to 5 and chroma is 2 or 3. Texture ranges from loamy fine sand to sand. Reaction ranges from very strongly acid to moderately acid. Some pedons have a thin A horizon that is a slightly darker than the Ap horizon.

The O horizon, where it occurs, is 1 to 6 inches thick. It has hue of 5YR to 10YR or it is neutral; value is 2 or 3 and chroma is 1 or 2.

The E horizon is 1 to 6 inches thick. It has hue of 5YR to 10YR, value of 5 to 7, and chroma of 1 or 2.

The Bh or Bhs horizon, where it occurs, is 1 to 3 inches thick. It has hue to 2.5YR to 7.5YR, value of 2 or 3, and chroma of 1 to 4.

The Bs horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. The Bs horizon is mottled at a depth ranging from 12 to 20 inches. Texture ranges from loamy fine sand to sand. Reaction ranges from very strongly acid to moderately acid.

The BC horizon has hue of 5YR to 2.5YR, value of 4 to 6, and chroma of 2 to 6. Texture is loamy fine sand to sand. Reaction ranges from very strongly acid to moderately acid.

The C horizon has hue of 7.5YR to 5Y, value of 4 to 7, and chroma of 2 to 6. Texture is loamy sand, fine sand, sand, or coarse sand. In some pedons thin strata of very fine sandy loam, fine sandy loam, and loamy fine sand are below a depth of 40 inches. Reaction ranges from very strongly acid to moderately acid.

Dawson Series

Dawson series consists of very deep, very poorly drained soils formed in organic material 16 to 50 inches thick overlying sandy deposits. These soils are in depressions within outwash plains, moraines, and bedrock-controlled uplands. In places Dawson soils are on flood plains. Slopes range from 0 to 2 percent.

Dawson soils are near Loxley soils, which are more than 51 inches deep over mineral material. They are also near Adams, Colton, Duxbury, Searsport, and Tughill soils. Unlike Dawson soils, Adams, Colton, Duxbury, Searsport, and Tughill soils have mineral soil material above a depth of 16 inches.

Typical pedon of Dawson peat, in the town of Colton, 7,300 feet north, 15 degrees east of the outlet for Ormsbee Pond; in sphagnum bog:

Oi—0 to 5 inches; yellowish brown (10YR 5/4) broken face, light gray (10YR 7/1) pressed, very pale brown (10YR 7/3) rubbed, fibric material (peat); about 95 percent fibers, 90 percent rubbed; massive; nonsticky; primarily sphagnum fibers and live roots; extremely acid (pH 3.5 in water); abrupt smooth boundary.

Oa—5 to 30 inches; black (10YR 2/1) broken face and rubbed sapric material (muck); about 25 percent fibers, 10 percent rubbed; massive; very friable; mostly herbaceous fibers, few partly decomposed wood stems; extremely acid (pH 3.5 in water); abrupt smooth boundary.

C—30 to 72 inches; gray (N5/); loamy sand; massive; very friable; slightly acid.

The mineral horizon is at a depth of 16 to 50 inches. In some pedons it is a single layer 12 inches or more thick and has organic material above and below it. In the organic part of the control section pH is less than 4.5 in 0.01M CaCl2 solution.

The surface tier has hue of 10YR, 7.5YR, or 5YR; value is 2 to 6 and chroma is 1 to 6. It consists mainly of sphagnum mosses. In most pedons, in the upper 1 to 4 inches it is fibric (peat) that has a high proportion of living sphagnum. In some pedons the surface tier is sapric (muck) or hemic (mucky peat) materials.

The subsurface tier has hue of 10YR, 7.5YR, or 5YR; value is 2 to 6 and chroma is 1 to 3. It consists mainly of sapric (muck), but in some pedons it has layers of fibric material (peat) totaling less than 5 inches thick and hemic material (mucky peat) totaling less than 10 inches thick. Typically, the horizon is massive, but in some pedons structure is weak, very coarse platy or blocky.

In some pedons an A horizon is just below the organic material. It has hue of 10YR, 7.5YR, or 2.5Y; value is 3 or 4 and chroma is 1 to 3. Texture is loam or silt loam.

The 2C horizon has hue of 2.5YR, 5YR, 7.5YR, 10YR, or 2.5Y; value is 3 to 6 and chroma is 0 to 6. Texture is sand, fine sand, very fine sand, loamy fine sand, gravelly sand, or very gravelly sand. Reaction ranges from very strongly acid to slightly acid.

Deford Series

The Deford series consists of very deep, poorly drained and very poorly drained soils formed in sandy glaciofluvial materials on outwash plains, lake plains, and deltas. These are nearly level soils in low-lying areas. Slopes range from 0 to 2 percent, but are dominantly 0 to 1 percent.

Deford soils are associated with and have more sand and less silt than moderately well drained Eelweir soils and somewhat poorly drained Mino soils. They are also associated with Croghan, Dorval, Flackville, Munuscong, Naumburg, Stockholm, Swanton, and Waddington soils. Unlike Deford soils, Croghan and Naumburg soils have a spodic horizon; Dorval soils have an organic subsoil horizon; and Flackville, Munuscong, Swanton, and Stockholm soils have a clayey substratum. Deford soils have fewer rock fragments within the control section than Waddington soils have there.

Typical pedon of Deford loamy fine sand, in the town of Waddington; 2,400 feet south of New York Route 37, 2,300 feet east of Brandy Brook, 75 feet west of trail; in a nearly level forest:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loamy fine sand, very dark gray (10YR 3/1) crushed, and many gray washed sand grains, light gray (10YR 6/1) to light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; many fine and many coarse roots; moderately acid (pH 5.6); abrupt wavy boundary.

Bg1—8 to 14 inches; gray (10YR 5/1) loamy fine sand; common coarse prominent yellowish red (5YR 5/6) and common medium distinct light gray (10YR 7/2) mottles; weak medium subangular blocky structure; very friable; few fine and medium roots; moderately acid; clear wavy boundary.

Bg2—14 to 20 inches; brownish gray (10YR5/2) loamy fine sand; many coarse prominent brown (7.5YR 5/6) and gray (10YR 6/1) mottles; weak fine and medium platy structure; very friable; few fine and medium roots; common fine, common medium, and few coarse pores; slightly acid; clear wavy boundary.

Bg3—20 to 24 inches; grayish brown (10YR 5/2) loamy fine sand; common medium prominent yellowish brown (10YR 5/6) and common fine and medium distinct light gray (10YR 7/2) mottles; weak medium subangular blocky structure; very friable; few fine and medium roots; common fine, few medium, and few coarse pores; neutral; clear wavy boundary.

C1—24 to 31 inches; yellowish brown (10YR 5/4) loamy fine sand; few medium prominent yellowish red (5YR 5/6) and common medium distinct grayish brown (10YR 5/2) mottles; single grain; very friable; few fine and medium roots; common fine, few medium, few coarse pores; neutral; clear wavy boundary.

C2—31 to 72 inches; gray (10YR 5/1) fine sand; few medium distinct yellowish brown (10YR 5/4) and dark brown to brown (7.5YR 4/4) mottles; single grain; loose; slightly alkaline; slightly effervescent.

Reaction to a depth of about 25 inches ranges from moderately acid to slightly alkaline. Below a depth of 25 inches the soils are commonly calcareous and reaction is slightly alkaline or moderately alkaline; however, noncalcareous, neutral soils are within the range of the series.

The A horizon has hue of 10YR, 7.5YR, or 5YR; value is 2 or 3 and chroma is 0 to 2. Texture is fine sand, loamy fine sand, mucky fine sand, or mucky loamy fine sand. In some pedons a thin organic layer overlies the A horizon.

Some pedons do not have a Bg horizon or have a BCg horizon that has weak structure above the C horizon.

The C horizon has hue of 5Y, 2.5Y, 10YR, 7.5YR, or 5YR; value is 5 to 7 and chroma is 1 to 4. The texture and thickness of the strata varies within the 10- to 40-inch control section. Fine sand, very fine sand, and loamy fine sand are most common, but thin layers of sand, loamy sand, or silt in the control section are within the range of the series. Consistence is very friable or loose.

Depeyster Series

The Depeyster series consists of very deep, moderately well drained soils formed in lacustrine sediments. These soils are on broad flats or are intermingled with glacial drift deposits or bedrock-controlled landforms on uplands. Slopes range from 0 to 45 percent.

Depeyster soils are in a drainage sequence with somewhat poorly drained Hailesboro soils and poorly drained and very poorly drained Wegatchie soils. They are also associated with Summerville, Nehasne, Kalurah, Hogansburg, Heuvelton, and Nicholville soils. Depeyster soils are finer textured and deeper to bedrock than Summerville and Nehasne soils. They are finer textured and have fewer rock fragments than Kalurah and Hogansburg soils.

Depeyster soils have more clay than Nicholville soils and have less clay than Heuvelton soils.

Typical pedon of Depeyster silt loam, 2 to 6 percent slopes, in the town of Morristown, 324 feet south of point on Oak Point Road 600 feet east of junction of Watson Road:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak fine, medium and coarse subangular blocky structure; friable; common fine and medium roots; moderately acid; abrupt smooth boundary.

Bt1—10 to 20 inches; brown (10YR 5/3) silt loam; common fine faint yellowish brown (10YR 5/4) mottles and few fine faint grayish brown (10YR 5/2) mottles; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; many fine vesicular pores and common fine and medium tubular pores; few macropores; few distinct clay films on faces of peds and in pores; dark brown (10 YR 4/3) faces of peds; slightly acid; clear wavy boundary.

Bt2—20 to 27 inches; brown (10YR 5/3) silt loam; few fine faint olive gray (5Y 5/2) mottles and common fine faint yellowish brown (10YR 5/4) mottles; moderate fine and medium subangular blocky structure; friable; few fine and medium roots; common fine and medium vesicular pores and common fine tubular pores; few macropores; many distinct clay films on faces of peds and in pores; dark brown (10YR 4/3) and reddish brown (5YR 4/3) faces of peds; slightly acid; clear smooth boundary.

CB—27 to 39 inches; alternate varves, about 10 mm thick, of light olive brown (2.5Y 5/4) very fine sand, strong brown (7.5YR 5/8) very fine sandy loam, and dark reddish gray (5YR 4/2) silty clay loam; weak moderate prismatic structure parting to weak thin platy; firm; few fine and medium roots; many very fine vesicular pores and common fine medium tubular pores; common macropores; few faint clay films in macropores; neutral; clear irregular boundary.

C—39 to 72 inches; alternating bands (varves) and discontinuous patches of yellowish brown (10YR 5/6) sandy loam, reddish gray (5YR 5/2) silty clay loam, and grayish brown (2.5YR 5/2) very fine sand; massive with a tendency to part along varves; firm; few fine roots; many very fine and fine vesicular pores and few fine tubular pores; strongly effervescent; slightly alkaline.

Thickness of solum ranges from 24 to 45 inches. Bedrock is deeper than 60 inches. Depth to carbonates ranges from 25 to 72 inches. Rock fragments range from 0 to 5 percent throughout.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3. Texture is fine sandy loam, very fine sandy loam, or silt loam. It has weak or moderate granular or subangular blocky structure. Consistence is very friable or friable. Reaction is strongly acid to neutral.

The E horizon, where it occurs, has hue of 5YR to 2.5YR, value of 5 or 6, and chroma of 2 to 4. Texture is fine sandy loam, very fine sandy loam, or silt loam. Reaction is strongly acid to neutral.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 or 4 above a depth of 30 inches and chroma of 2 to 4 below a depth of 30 inches. It has few to many low and high chroma mottles. In most pedons texture is silt loam or silty clay loam, but the range is fine sandy loam to silty clay. It is moderately acid to neutral in the upper part and slightly acid to slightly alkaline in the lower part.

The CB horizon has color, texture, and reaction that are mixtures of the overlying Bt horizon and the underlying C horizon. Some pedons do not have a CB horizon.

The C horizon has hue of 10YR to 5YR, value of 4 or 5, and chroma of 2 to 8. Texture is silty clay loam to stratified silt and very fine sand. In some pedons loamy glacial till is at a depth of 3.5 to 6 feet. Reaction is neutral to moderately alkaline.

Dorval Series

The Dorval series consists of very deep, very poorly drained soils formed in organic materials that are between 16 and 51 inches thick and that overlie clayey mineral deposits. These soils are in depressions within lacustrine or marine plains. Slopes range from 0 to 2 percent.

Dorval soils are closely associated with Carbondale soils, which are more than 51 inches deep over mineral material. They are also associated with Adjidaumo, Deford, Insula, Munuscong, Runeburg, Summerville, and Swanton soils. Unlike Dorval soils, Adjidaumo, Deford, Insula, Munuscong, Runeburg, Summerville, and Swanton soils do not have mineral soil material above a depth of 16 inches.

Typical pedon of Dorval muck, in the town of Lisbon, 300 feet south of gravel pit, 1/2 mile east of Five Mile Line Road, 1/2 mile south of Nelson Road:

Oa1—0 to 17 inches; black (N 2/0) broken face, very dark gray (5YR 3/1) rubbed; sapric material (muck); about 40 percent fibers, 10 percent rubbed; moderate fine and medium granular structure; very friable; woody and herbaceous fibers; few fine and very fine roots; neutral; clear wavy boundary.

Oa2—17 to 23 inches; very dark gray (5YR 3/1) broken face, dark reddish brown (5YR 3/2) rubbed sapric material (muck); about 50 percent fibers, 10 percent rubbed; massive; friable; woody and herbaceous fibers; 2 percent woody fragments; neutral; clear wavy boundary.

Oe—23 to 31 inches; dark brown (7.5 YR 3/2) broken face; dark reddish brown (5 YR 3/2), rubbed, hemic material (mucky peat); about 90 percent fibers, 20 percent rubbed; massive; friable; woody and herbaceous fibers; 2 percent woody fragments; neutral; clear wavy boundary.

2Cg—31 to 72 inches; gray (5YR 5/1) silty clay; massive; slightly sticky, slightly plastic; neutral.

The clayey C horizon is commonly at a depth of 24 to 42 inches and ranges between 16 and 50 inches.

In some pedons the material above the C horizon is woody, herbaceous, or mixed. In many pedons fragments of twigs, branches, or logs ranging from 1/8 to 5 inches in diameter make up as much as 15 percent of the volume. The organic part of the control section ranges from strongly acid to slightly alkaline and lacks free carbonates. The substratum is mineral, ranges from slightly acid to moderately alkaline, and lacks free carbonates.

The surface tier has hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 2, or it is neutral. Exclusive of loose surface litter or mosses, it consists of sapric or hemic material that has an unrubbed fiber content ranging from 20 to 50 percent. The subsurface tier has colors similar to those of the surface tier. It is dominantly sapric material, but in many pedons it has thin, hemic layers. The unrubbed fiber content ranges from about 20 to 90 percent.

The C horizon has hue of 5Y to 5YR, value of 4 to 6, and chroma of 1 to 6. Texture is clay, silty clay, silty clay loam, or clay loam. In some pedons it has thin layers that are more sand or silt and less clay. In some pedons rock fragments range, by volume, to 5 percent.

Duxbury Series

The Duxbury series consists of very deep, well drained soils on outwash plains, eskers, kames, and terraces. These soils formed in loamy materials underlain by sandy and gravelly glaciofluvial deposits. Slopes range from 0 to 35 percent.

Duxbury soils are closely associated with Adams, Colton, and Croghan soils. They are not as sandy in the solum as Adams soils. They are less gravelly and sandy than Colton soils. They are less sandy in the solum than Croghan soils; unlike Duxbury soils, Croghan soils have mottling in the spodic horizon.

Typical pedon of Duxbury silt loam, 2 percent slopes, in an area of the Colton-Duxbury complex, 2 to 8 percent slopes, in the town of Pitcairn, 100 feet east of intersection of Cold Spring Forest Road and South Edwards-East Pitcairn Road:

A— 0 to 7 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; very friable; 5 percent rock fragments; very strongly acid; clear smooth boundary.

Bs—7 to 14 inches; strong brown (7.5YR 5/6) silt loam; weak medium subangular blocky structure; friable; strongly acid; 5 percent rock fragments; clear wavy boundary.

BC—14 to 24 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak medium subangular blocky structure; friable; strongly acid; 15 percent rock fragments; clear irregular boundary.

2C—24 to 72 inches; dark yellowish brown (10YR 4/4) very gravelly coarse sand; single grain; loose; 40 percent rock fragments; strongly acid.

Thickness of the solum and depth to the 2C horizon range from 16 to 30 inches. Depth to bedrock is more than 60 inches. Rock fragments, mostly pebbles and cobbles, typically range, by volume, from 0 to 15 percent in the A horizon, 0 to 20 percent in the B horizon, and 35 to 60 percent in the C horizon. In some pedons subhorizons of the substratum are, by volume, less than 15 percent rock fragments. Reaction ranges from extremely acid to slightly acid in the upper part of the solum and from very strongly acid to slightly acid in the lower part of the solum and in the substratum.

Some pedons have an A horizon that has hue of 5YR, 7.5YR, or 10YR; value is 2 or 3 and chroma is 1 to 4. Some pedons have an Ap horizon that has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 2 to 4. The A or Ap horizon is fine sandy loam, very fine sandy loam, or silt loam in the fine-earth fraction.

The E horizon, where it occurs, has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 or 2. Texture is fine sandy loam or very fine sandy loam in the fine-earth fraction.

The Bh horizon, where it occurs, is neutral or has hue of 2.5YR to 10YR. Typically, it has value of 2 or 3 and chroma of 0 to 2, but in some pedons it has higher value and chroma.

The Bhs horizon, where it occurs, has hue of 2.5YR to 10YR and value and chroma of about 3 or less. The Bs horizon has hue of 5YR to 10YR and value and chroma of 4 or more. Texture of the Bh, Bhs, and Bs horizons is silt loam, loam, very fine sandy loam, or fine sandy loam in the fine-earth fraction.

The BC horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 3 to 6. Texture is silt loam, loam, or fine sandy loam in the fine-earth fraction.

The 2C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. Texture is loamy sand, sand, or coarse sand in the fine-earth fraction.

Eelweir Series

The Eelweir series consists of very deep, moderately well drained soils formed in loamy, deltaic or glaciofluvial sediments. These soils are on the edge of lake plains and on stream terraces. Slopes range from 0 to 8 percent.

Eelweir soils are in a drainage sequence with somewhat poorly drained Mino soils. They are closely associated with Croghan, Elmwood, Hogansburg, Kalurah, Mino, and Nicholville soils. Eelweir soils are finer textured than Croghan soils. Unlike Eelweir soils, Elmwood soils do not have a clayey substratum above a depth of 40 inches. Eelweir soils have fewer rock fragments in the subsoil than Hogansburg and Kalurah soils have. Eelweir soils are coarser textured than Nicholville soils.

Typical pedon of Eelweir fine sandy loam, 2 to 8 percent slopes, in the town of Canton, 200 feet west of Rice Road, 1.5 miles south of junction of U.S. Route 11:

Ap—0 to 10 inches; dark brown (10YR 4/3) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; common coarse tubular pores; 1 percent rock fragments (gravel); moderately acid; clear wavy boundary.

Bw1—10 to 17 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine and medium and subangular blocky structure; very friable; many fine roots; few coarse tubular pores; moderately acid; clear wavy boundary.

Bw2—17 to 24 inches; dark yellowish brown (10YR 4/4) fine sandy loam; few fine faint dark grayish brown (10YR 4/2) and few medium distinct grayish brown (10 YR 5/2) mottles; weak medium and fine subangular blocky structure; friable; common fine roots; few coarse tubular pores; moderately acid; clear wavy boundary.

Bw3—24 to 29 inches; dark yellowish brown (10 YR 4/4) fine sandy loam; few fine faint dark grayish brown (10YR 4/2) and common medium distinct yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; 1 percent rock fragments (gravel); moderately acid; clear wavy boundary.

2CB—29 to 35 inches; brown (10YR 5/3) very fine sandy loam; common medium faint dark yellowish brown (10YR 4/4) mottles; weak medium and fine angular blocky structure; friable; few fine roots; moderately acid; abrupt irregular boundary.

3C1—35 to 39 inches; yellowish brown (10YR 5/4) loamy fine sand; common faint 1/2-inch thick brownish yellow (10YR 6/6) lamellae; massive; friable; few fine roots; moderately acid; clear wavy boundary.

3C2—39 to 72 inches; yellowish brown (10YR 5/4) sand; stratified, faint, yellowish brown (10YR 5/6) lamellae; weak thick platy structure; very friable; moderately acid.

The thickness of the solum ranges from 25 to 40 inches. Depth to bedrock is more than 60 inches.

Rock fragments range from 0 to 5 percent throughout and are mostly gravel. In some pedons free carbonates are at a depth of 40 to 80 inches. Reaction ranges from strongly acid to slightly acid in the surface layer, from moderately acid to neutral in the subsoil, and from moderately acid to slightly alkaline in the substratum. The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. Texture is fine sandy loam, very fine sandy loam, sandy loam, or loam.

The B horizon has hue of 7.5YR or 10YR, value of

3 to 5, and chroma of 3 to 6. Texture is very fine sandy loam, fine sandy loam, sandy loam, or loam. In some pedons the horizon has thin layers of loamy sand or loamy fine sand.

The BC horizon, where it occurs, is up to 10 inches thick.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4. Texture is very fine sandy loam to sand, but below a depth of 60 inches the range includes clay or silty clay.

Elmwood Series

The Elmwood series consists of very deep, moderately well drained soils on ancient marine beds or lake plains. These soils formed in a loamy mantle of fine sand and silt overlying a substratum of lacustrine or marine silts and clays. Slopes range from 0 to 8 percent.

Elmwood soils are in a drainage sequence with somewhat poorly drained and poorly drained Swanton soils and very poorly drained Munuscong soils. They are also associated with Heuvelton, Muskellunge, Depeyster, Hailesboro, Stockholm, Flackville, and Eelweir soils. Like Elmwood soils, Heuvelton, Muskellunge, Depeyster, and Hailesboro soils do not lack a loamy mantle over the finer textured silts and clays. The mantle in Elmwood soils is not as sandy as that in Flackville and Stockholm soils. Unlike Eelweir soils, Elmwood soils have a clayey substratum within a depth of 40 inches.

Typical pedon of Elmwood fine sandy loam, 0 to 3 percent slopes, in the town of Oswegatchie, on Ron Burns' farm, 2,000 feet west of Black Lake Road, 1 mile south of junction with New York Route 37, in a nearly level cornfield:

Ap—0 to 6 inches; brown (7.5RY 4/4) fine sandy loam; weak fine and medium granular structure; very friable; many fine common medium roots; slightly acid; abrupt wavy boundary.

Bw1—6 to 9 inches; brown (7.5YR 5/4) or dark brown (7.5YR 4/4) fine sandy loam; weak moderate subangular blocky structure; very friable; common fine and medium roots; few fine and medium pores; slightly acid; clear wavy boundary.

Bw2—9 to 17 inches; yellowish brown (10YR 5/4) fine sandy loam; single grain; very friable; many fine and medium roots; slightly acid; clear wavy boundary.

Bw3—17 to 22 inches; brown (7.5YR 5/4) fine sandy loam; common coarse prominent yellowish red (5YR 5/6) and reddish brown (5YR 4/4) and common fine distinct pinkish gray (5YR 6/2) mottles; weak medium subangular blocky structure; very friable; few fine and medium roots; few medium pores; slightly acid; clear wavy boundary.

BC—22 to 25 inches; yellowish brown (10YR 5/4) fine sandy loam; few fine prominent strong brown (7.5YR 5/6) and pinkish gray (7.5YR 6/2) mottles; single grain; massive in place; loose; few fine roots; few fine pores; slightly acid; clear wavy boundary.

2C—25 to 72 inches; dark brown (10YR 4/3) silty clay and brown to yellowish brown (10YR 5/6) interiors; common fine and medium distinct yellowish brown (10YR 5/6), dark yellowish brown (10YR 4/4), and light brownish gray (10YR 6/2) mottles; moderate medium and thick platy parting to moderate fine blocky structure; firm; slightly sticky, slightly plastic (wet); few fine roots; slightly alkaline; slightly effervescent in the lower part.

Depth to underlying, fine textured material ranges from 18 to 40 inches. The coarse loamy material is, by volume, up to 3 percent rock fragments; the clayey material does not have rock fragments. Reaction ranges from very strongly acid to slightly acid above the lithological discontinuity and from moderately acid to slightly alkaline below. In some pedons thin horizons of loamy sand or loamy fine sand are above the lithological discontinuity.

The Ap or A1 horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is very fine sandy loam, fine sandy loam, sandy loam, or loam. Structure is weak or moderate, fine granular. Consistence is very friable or friable.

The B horizon has hue of 5YR to 2.5YR, value of 3 to 5, and chroma of 3 to 6. Texture is fine sandy loam, sandy loam, or loam and includes thin layers of loamy sand or loamy fine sand. Structure is weak or moderate very fine or fine granular or subangular blocky, or the horizon is massive. Consistence is very friable or friable.

The E horizon, where it occurs, has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 2 to 4. Texture is sandy loam, fine sandy loam, very fine sandy loam, or silt loam. Structure is weak, thin to thick platy in some pedons parting to subangular blocky, or the horizon is massive.

The 2B2 horizon, where it occurs, has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 2 to 4. Texture is clay loam, silty clay loam, or silty clay. Structure is weak or moderate, very fine to medium subangular blocky.

The 2C horizon has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 2 or 3. Texture is silty clay loam, silty clay, clay loam, or clay; in some pedons the horizon has thin strata of sand to silt below a depth of 40 inches. Structure is moderate medium to very thick platy, or prismatic parting to blocky, or the horizon is massive. In some pedons thin films of silt or clay are on faces of peds. In some pedons manganese stains are on faces of peds in the lower part of the horizon.

Fahey Series

The Fahey series consists of very deep, moderately well drained soils on hills and ridges on till plains. These soils formed in glacial till that wave action has winnowed. Slopes range from 0 to 8 percent.

Fahey soils are in a drainage sequence with excessively drained Trout River soils, somewhat poorly drained Coveytown soils, and poorly drained and very poorly drained Cook soils. In places they are associated with Adams, Croghan, Kalurah, and Pyrities soils. Fahey soils have more rock fragments than these soils have and are also sandier than Pyrities and Kalurah soils.

Typical pedon of Fahey loamy fine sand, in the town of Parishville, 21 feet north of Old Parishville Road, 0.9 mile west of junction of Old Parishville Road and Allens Falls Road:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) loamy fine sand; moderate fine granular structure; friable; many fine roots; many interstitial pores; 7 percent rock fragments (mostly gravel); moderately acid; clear smooth boundary.

Bsl—7 to 20 inches; brown (7.5YR 4/4) very gravelly loamy fine sand; weak fine and medium subangular structure parting to single grain; friable; common fine and medium roots; many interstitial pores; 40 percent rock fragments (30 percent gravel, 10 percent cobbles and stones); moderately acid; gradual wavy boundary.

Bs2—20 to 27 inches; brown (7.5YR 4/4) very gravelly loamy fine sand; common, fine and medium distinct strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; common fine and medium roots; many interstitial pores; 40 percent rock fragments (30 percent gravel, 10 percent cobbles and stones); moderately acid; clear wavy boundary.

BC—27 to 31 inches; dark brown (10YR 3/3) very gravelly loamy sand; many fine distinct dark reddish brown (5YR 3/3), many fine faint dark grayish brown (10YR 4/2), and few fine distinct yellowish red (5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; common medium vesicular pores; 35 percent rock fragments (gravel); moderately acid; clear wavy boundary.

C1—31 to 39 inches; yellowish brown (10YR 5/4) gravelly loamy sand; many medium faint light olive brown (2.5Y 5/4), grayish brown (2.5Y 5/2), and yellowish brown (10YR 5/6) and few medium distinct strong brown (7.5YR 5/6) mottles; friable; few coarse tubular and many fine vesicular pores; 30 percent rock fragments (25 percent gravel, 5 percent cobbles and stones); moderately acid; clear wavy boundary.

C2—39 to 72 inches; dark yellowish brown (10YR 3/4) very gravelly loamy sand; common medium distinct strong brown (7.5YR 5/6) mottles; massive; friable; 40 percent rock fragments (gravel); moderately acid.

Thickness of the solum ranges from 24 to 36 inches. Depth to loamy glacial till is more than 40 inches. Depth to bedrock is more than 60 inches. Rock fragments (gravel, cobbles, and stones) range from 0 to 15 percent in the A horizon, from 20 to 50 percent in the B horizon, and from 30 to 70 percent in the C horizon. Rock fragments aggregate more than 35 percent at a depth of 10 to 40 inches. Organic matter content is less than 2 percent in the upper 4 inches of the Bs horizon.

In undisturbed areas pedons have an Oe or Oa horizon 1 to 4 inches thick, a sand or loamy sand E horizon 1 to 3 inches thick, and a Bh or a Bhs horizon 1 to 3 inches thick.

The Ap horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3. Texture is fine sandy loam to loamy sand. Consistence is friable or very friable. In unlimed areas reaction ranges from very strongly acid to moderately acid.

The Bs horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6. Texture is loamy fine sand to sand, typically becoming coarser with depth. Structure is weak or very weak, granular or subangular blocky, or the horizon is structureless. Reaction ranges from moderately acid to neutral.

The BC horizon has hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 5. Texture is loamy fine sand to sand. Reaction ranges from moderately acid to neutral.

The C horizon has hue of 10YR to 2.5Y, value of 3 to 6, and chroma of 2 or 4. Reaction ranges from moderately acid to neutral, but below a depth of 40 inches it ranges to moderately alkaline.

Flackville Series

The Flackville series consists of very deep, moderately well drained soils on ancient marine beds, lake plains, and deltas. These soils formed in thin sand deposits overlying a substratum of lacustrine or marine silts and clays. Topography is smooth to gently undulating. Most slopes are 0 to 5 percent, but the range is 0 to 8 percent.

Flackville soils are in a drainage sequence with poorly drained Stockholm soils. They are also associated with Croghan, Adams, Heuvelton, Muskellunge, Depeyster, Hailesboro, and Elmwood soils. Croghan and Adams soils are where sand deposits are more than 40 inches thick over contrasting material. In Flackville soils the overlying sandy layer is 18 to 40 inches deep, but where it is in Heuvelton, Muskellunge, Depeyster, and Hailesboro soils this layer is less than 18 inches thick. In Flackville soils the sandy mantle is coarser textured than that in Elmwood soils; like Flackville soils, Elmwood soils also have a clayey substratum.

Typical pedon of Flackville loamy fine sand, 3 to 8 percent slopes, in the town of Canton, 200 feet west of point on farm access road 400 feet south of point on New York Route 68, 1.5 miles northwest of intersection in the hamlet of Langdon Corners:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) loamy fine sand, light brownish gray (10YR 3/2) loamy fine sand, light brownish gray (10YR 6/2) dry; weak fine and medium granular and fine subangular blocky structure; very friable to loose; common fine and very fine, few medium, mostly dead roots; moderately acid; abrupt smooth boundary.

Bhs—9 to 11 inches; variegated, 50 percent each, dark brown (7.5YR 3/2) and reddish brown (5YR 4/4) loamy fine sand; common old worm and root channels filled with Ap material; weak fine and medium subangular blocky structure parting to weak fine granular, and single grain; very friable to loose; common very fine and fine, few medium roots; common fine, few medium shallow irregular pores; slightly acid; clear wavy boundary.

Bs1—11 to 19 inches; brown (7.5YR 4/4) loamy fine sand; common medium prominent reddish brown (5Y 4/4) mottles, mostly very weakly iron cemented; common worm and old root channels filled with Ap material; massive parting to very weak fine and medium subangular blocky structure; very friable to loose; few very fine and fine roots; common medium and few fine shallow vesicular pores; slightly acid; gradual wavy boundary.

Bs2—19 to 27 inches; brown (7.5YR 4/4) fine sand; common medium and coarse prominent reddish brown (5YR 4/4), common medium distinct brown (10YR 5/3), and few fine distinct grayish brown (10YR 5/2) mottles; very weak medium and fine subangular blocky structure parting to single grain; very friable to loose; few very fine and fine roots, mostly dead; common fine and medium shallow pores between sand grains; neutral; gradual wavy boundary.

BC—27 to 29 inches; brown (10YR 5/3) fine sand; common medium distinct yellowish brown (10YR 5/3) fine sand; common medium distinct yellowish brown (10YR 5/6) and common medium faint grayish brown (10YR 5/2) mottles; very weak thin and medium platy structure; slightly firm in place; very friable to loose when removed; few very fine and fine roots; few fine and medium shallow pores; neutral; abrupt wavy boundary.

2C—29 to 72 inches; yellowish brown (10YR 5/4) varved silty clay and silty clay loam; common medium distinct grayish brown (10YR 5/2) mottles; weak medium and thick platy structure; firm; slightly sticky and slightly plastic; neutral.

Thickness of the solum and depth to the underlying, fine textured material ranges from 20 to 40 inches. Depth to bedrock is greater than 60 inches. The soils contain few or no rock fragments.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3. Texture is fine sandy loam, loamy fine sand, or sand. Some pedons have a darker O horizon. Reaction ranges from strongly acid to slightly acid.

The Bh or Bhs horizon has hue of 5YR or 7.5YR, chroma of 1 or 2, and value is 1 or 3, or it is neutral. Texture is loamy fine sand to sand. Reaction ranges from strongly acid to slightly acid.

The Bs horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 3 to 6. Texture is loamy fine sand to sand. Structure is weak or very weak blocky. Some pedons have cemented areas that range from small shot, or concretions, to a discontinuous ortstein layer in one-half or less of each pedon. Reaction ranges from strongly acid to neutral.

The IIC horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 1 to 5. Texture is silty clay loam to clay. The horizon is massive or has weak or moderate, medium or thick platy structure resulting from depositional varves. It generally has free carbonates. Reaction ranges from neutral to moderately alkaline.

Fluvaquents

Fluvaquents are very deep, somewhat poorly drained to very poorly drained soils adjacent to streams. These soils formed in recent alluvial deposits on dynamic flood plains that in many places have been cut and scoured and that have braided or abandoned channels. They have little or no soil profile development, are subject to frequent flooding, and are on slopes of 0 to 5 percent.

Fluvaquents are in soil complexes with components of Dawson and Loxley soils, and Udifluvents, and in an undifferentiated group with a component of Borosaprists. They are commonly near Adams, Adjidaumo, Lovewell, Pyrities, and Redwater soils. Fluvaquents soils are lower on the landscape and are wetter than Lovewell, Pyrities, and Adams soils on uplands. Fluvaquents are generally on dynamic flood plains that undergo active undercutting, scouring, and detrimental deposition, and are more undifferentiated in texture and in most other soil characteristics than Adjidaumo and Redwater soils.

Fluvaquents have poorer drainage than Udifluvents on higher parts of flood plains. Borosaprists formed in organic deposits in marshes.

Fluvaquents vary in composition from place to place; thus, a typical pedon is not given.

Depth to bedrock is generally more than 60 inches. Rock fragments, including gravel, cobblestones, and flagstones, range, by volume, from 0 to 80 percent. Reaction is very strongly acid to slightly alkaline.

The A horizon has hue of 5YR to 5Y, value of 2 to 4, and chroma of 0 or 1. Texture ranges from sand to silty clay loam and their channery, gravelly, and very gravelly analogs. It is 1 to 10 inches thick.

The C horizon has hue of 5YR to 5Y, value of 3 to 6, and chroma of 0 to 3. In most pedons it is mottled. Texture ranges from sand to silty clay loam and their gravelly, channery, cobbly, and very gravelly analogs. Consistence is friable or loose.

Gouverneur Series

The Gouverneur series consists of very shallow, excessively drained and somewhat excessively drained soils on glacial till plains. These soils are nearly level or gently sloping, moderately permeable soils formed in a thin layer of glacial till or residuum overlying limestone, dolomitic sandstone, or marble bedrock. Slopes range from 0 to 8 percent.

Gouverneur soils are associated with competing Summerville soils and also with Grenville, Hogansburg, Nehasne, Ogdensburg, and Ruse soils. Grenville and Hogansburg soils are very deep to bedrock and are mainly on scattered, steplike side slopes. Summerville soils and moderately deep Nehasne soils have a cambic horizon. Shallow Ruse soils and moderately deep Ogdensburg soils are in shallow basins and have a mollic epipedon and an aquic moisture regime.

Typical pedon of Gouverneur loam, in an area of Summerville-Gouverneur complex, 0 to 8 percent slopes, rocky, in the town of Morristown, 150 feet south of point on Oak Point Road, 1,400 feet west of junction of Old Mill Road:

Ap—0 to 7 inches; very dark gray (5YR 3/1) loam; moderate fine and medium granular structure; friable; many very fine and fine roots; 15 percent rock fragments; slightly acid; abrupt smooth boundary.

Bw—7 to 9 inches; dark brown (10YR3/3) fine sandy loam; weak medium and coarse subangular blocky structure; very friable; many very fine and fine roots; 15 percent rock fragments; slightly acid; abrupt smooth boundary.

R—9 inches; gray dolomitic sandstone bedrock.

Thickness of the solum and depth to bedrock range from 1 to 9 inches. The content of rock fragments ranges, by volume, from 3 to 20 percent. The soil ranges from moderately acid to slightly alkaline.

The Ap horizon has hue of 5YR to 10YR, value of 3 or 4, and chroma of 1 to 3. Texture is silt loam to fine sandy loam in the fine-earth fraction. Many pedons have an A horizon in place of the Ap horizon.

The B horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 6. In some pedons it has a few, faint, high chroma mottles. Texture ranges from silt loam to fine sandy loam in the fine-earth fraction. Structure is weak or moderate granular or subangular blocky. Consistence is friable or very friable.

Many pedons have a thin, saprolitic C or BC horizon over bedrock, dominantly limestone, marble, or dolomitic sandstone.

Grenville Series

The Grenville series consists of very deep, well drained soils that formed in high-lime, loamy glacial till on till plains on uplands. Slopes range from 3 to 25 percent.

Grenville soils are in a drainage sequence with moderately well drained Hogansburg soils, somewhat poorly drained Malone soils, and poorly drained or very poorly drained Runeberg soils. Grenville soils are also associated with Nehasne, Adams, Waddington, Heuvelton, and Elmwood soils. Nehasne soils are 20 to 40 inches deep over limestone bedrock. Sandy Adams soils and sandy, gravelly Waddington soils are on adjacent areas of outwash or deltaic deposits. Heuvelton and Elmwood soils are on nearby, lower lying lake plains.

Typical pedon of Grenville fine sandy loam, 3 to 8 percent slopes, 72 feet north, 66 degrees east from point on tractor trail 600 feet west on trail from junction of County Road 108, 0.4 mile south on County Road

108 from Burnhams Corners, just over bridge; 44 degrees 42 minutes 03 seconds N., 75 degrees 05 minutes 00 seconds W.:

A—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sandy loam; moderate fine and medium granular structure; friable; many fine and few medium roots; 5 percent rock fragments (gravel); moderately acid; clear irregular boundary.

Bw1—5 to 15 inches; yellowish brown (10YR 5/6) fine sandy loam; streaks of material from A horizon following some vertical macropores; weak medium and coarse subangular blocky structure; friable; many very fine and common fine roots; many fine vesicular and tubular pores and few medium pores; 10 percent rock fragments (gravel); moderately acid; clear wavy boundary.

Bw2—15 to 26 inches; brown (10YR 4/3) fine sandy loam; common medium faint dark yellowish brown (10YR 4/4) and few fine distinct yellowish brown (10YR 5/6) mottles; very weak coarse prismatic structure parting to moderate fine and medium subangular blocky; friable; common fine roots; common fine and medium tubular pores and many fine vesicular pores; few faint clay films in pores and on faces of peds; 10 percent rock fragments (gravel); slightly acid; clear wavy boundary.

BC—26 to 37 inches; brown (10YR 5/3) and pale brown (10YR 6/3) fine sandy loam; few common medium distinct brown (7.5YR 4/4) and common medium faint dark yellowish brown (10YR 4/4) mottles; very weak medium and coarse subangular blocky structure; firm; few fine roots; common fine and medium tubular pores; 12 percent rock fragments (10 percent gravel, 2 percent cobbles); neutral; gradual wavy boundary. (0 to 15 inches thick)

C—37 to 72 inches; grayish brown (2.5Y 5/2) sandy loam and few small pockets of sand; few medium faint yellowish brown (10YR 5/4) mottles; massive; firm; common fine and medium tubular pores; 12 percent rock fragments (10 percent gravel, 2 percent cobbles); slightly effervescent; slightly alkaline.

Thickness of the solum and depth to carbonates range from 20 to 40 inches. Depth to bedrock is more than 60 inches. Rock fragments, mainly gravel and cobbles, range, by volume, from 5 to 15 percent in the A horizon, 5 to 35 percent in the B horizon, and 15 to 40 percent in the C horizon.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 2 or 3. Texture is silt loam, loam, or fine sandy loam in the fine-earth fraction. Reaction ranges from strongly acid to slightly acid.

The Bw horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 3 to 6. Texture is fine sandy loam or loam in the fine-earth fraction. Reaction ranges from moderately acid to neutral. The BC horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 or 3. Texture is fine sandy loam or loam in the fine-earth fraction. Reaction is moderately acid to neutral.

The C horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 or 3. Texture is sandy loam, fine sandy loam, or loam in the fine-earth fraction. Reaction is neutral or slightly alkaline.

Guff Series

The Guff series consists of moderately deep, poorly drained soils on marine plains. These soils formed in clayey marine sediments overlying bedrock. Slope ranges from 0 to 3 percent.

Guff soils are in a drainage sequence with somewhat poorly drained Matoon soils. They are also associated with Adjidaumo, Muskellunge, Hannawa, Ogdensburg, and Runeberg soils. Adjidaumo and Muskellunge soils are deeper to bedrock than Guff soils. On Hannawa and Ogdensburg soils coarser material overlies bedrock. Runeberg soils are coarser textured and deeper to bedrock than Guff soils.

Typical pedon of Guff silty clay loam, in the town of Morristown, 300 feet east-northeast of a point on Scotch Bush Road, 5,400 feet southeast of junction of Scotch Bush Road and Center Road:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate very fine and fine granular structure; friable; many very fine and fine and few medium roots; common very fine and fine tubular pores; slightly acid; abrupt wavy boundary.

Bg1—9 to 14 inches; dark gray (10YR 4/1) clay; many medium distinct dark yellowish brown (10YR 4/4) mottles; moderate coarse prismatic structure parting to moderate fine and very fine subangular blocky; firm, sticky, plastic; common very fine and fine, and very few medium roots; common very fine and fine tubular pores; few medium faint very dark gray (10YR 3/1) organic stains on faces of peds; neutral; clear wavy boundary.

Bg2—14 to 20 inches; dark gray (10YR 4/1) clay; many medium and coarse distinct dark yellowish brown (10YR 4/4) mottles; moderate coarse prismatic structure parting to moderate fine and very fine angular blocky; firm, sticky, plastic; few very fine and fine roots; common fine and very fine tubular pores; neutral; clear wavy boundary.

BCg—20 to 39 inches; grayish brown (10YR 5/2) silty clay; common medium distinct dark gray (10YR 4/1) and dark yellowish brown (10YR 4/4) mottles; weak coarse prismatic structure parting to weak very fine angular blocky; firm, slightly sticky and slightly plastic; common very fine and fine tubular pores; slightly effervescent; few medium light gray (10YR 7/1) calcium carbonate concretions in the lower part; slightly alkaline; abrupt smooth boundary.

R—39 inches; weathered limestone bedrock. A thin, discontinuous layer of saprolite of grayish brown (10YR 5/2) sandy loam overlies bedrock. About 20 percent of the volume is weathered rock fragments.

The thickness of the solum ranges from 18 to 40 inches. Depth to carbonates commonly ranges from 18 to 40 inches; however, some pedons do not have carbonates. Depth to bedrock ranges from 20 to 40 inches. Rock fragments, mainly gravel, range from 0 to 5 percent in the A and B horizons and from 0 to 20 percent in the C horizon.

The A horizon has hue of 10YR or 2.5Y; value is 2 or 3, 4 or 5, dry, and chroma is 1 or 2. Texture is silty clay loam, silty clay, silt loam, or clay. Reaction ranges from moderately acid to neutral.

The Bg horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2. Texture is silty clay loam, silty clay, or clay. Reaction is neutral or slightly alkaline.

The BCg and Cg horizons, where they occur, are similar in color and texture to the Bg horizon except they have free carbonates. They are slightly alkaline or moderately alkaline. Some pedons have a thin IIC horizon composed of nonconforming glacial till or saprolite.

Hailesboro Series

The Hailesboro series consists of very deep, somewhat poorly drained soils formed in silty sediments in stillwater. These soils are on broad flats or are intermingled with glacial drift deposits or bedrock-controlled landforms on uplands. Slopes range from 0 to 6 percent.

Hailesboro soils are in a drainage sequence with moderately well drained Depeyster soils and poorly drained and very poorly drained Wegatchie soils. They are also associated with Roundabout, Muskellunge, Swanton, Malone, Ogdensburg, and Hannawa soils. Hailesboro soils are finer textured than Roundabout soils and coarser textured than Muskellunge soils. They are finer textured and have fewer rock fragments than Malone, Ogdensburg, and Hannawa soils. They are deeper to bedrock than Ogdensburg and Hannawa soils.

Unlike Hailesboro soils, Swanton soils have a mantle of fine sand and silt.

Typical pedon of Hailesboro silt loam, 0 to 2 percent slopes, in the town of Canton, 120 feet north of gate to Cornell University Crop Climate Study Area, 1.9 miles southwest of junction of New York Route 68 and Langdon Corners-Brick Chapel Road:

Ap—0 to 7 inches; dark grayish brown (10YR 4/1) silt loam, light brownish gray (10YR 6/2) dry; moderate medium and fine granular structure; friable; many fine roots; many fine pores; slightly acid; abrupt smooth boundary.

BEg—7 to 11 inches; grayish brown (10YR 5/2) silt loam; many (45 percent) medium distinct light yellowish brown (10YR 6/4) mottles and few medium distinct very dark grayish brown (10YR 3/2) mottles; moderate fine subangular blocky structure; friable; common fine roots; many fine pores; light gray (10YR 7/2) coatings on sand grains; neutral; clear smooth boundary.

Btg—11 to 24 inches; grayish brown (10YR 5/2) silt loam; many (45 percent) medium distinct yellowish brown (10YR 5/6) mottles; moderate fine subangular blocky structure; firm; few fine roots; common fine pores; continuous distinct clay films lining most pores, few thin clay films on ped surfaces; slightly alkaline; clear smooth boundary.

BCg—24 to 37 inches; gray (10YR 5/2) silt loam; common medium faint grayish brown (10YR 5/2) and many medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; common fine pores; few thin silt coats on faces of peds; slightly alkaline; gradual wavy boundary.

BC—37 to 44 inches; brown (10YR 5/3) silt loam; many coarse distinct gray (10YR 5/2) and few medium faint grayish brown (10YR 5/2) mottles; weak coarse subangular blocky structure; firm; common fine pores; moderately alkaline; gradual wavy boundary.

C—44 to 72 inches; brown (10YR 5/3) silt loam; many coarse distinct gray (10YR 5/1) mottles; weak medium plates parting on depositional planes; firm; common fine pores; slightly effervescent; moderately alkaline.

The thickness of the solum ranges from 22 to 45 inches. Depth to bedrock is greater than 60 inches. Typically, depth to carbonates is 40 to 65 inches, but the range is 30 to 80 inches. Rock fragments, mainly gravel, range from 0 to 5 percent throughout.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 3. Texture is very fine sandy loam or silt loam. Reaction is moderately acid to neutral.

The BEg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has faint to prominent mottles. Texture is silt loam or very fine sandy loam. Reaction is slightly acid to slightly alkaline.

The Bt horizon has hue of 10YR to 2.5Y, value of 4 or 5, and chroma of 1 or 2. It has faint to prominent mottles. Texture is mainly silt loam or silty clay loam; in some thin subhorizons it ranges to very fine sandy loam. Reaction is slightly acid to slightly alkaline.

The BC horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 to 3. It has faint to prominent mottles. Texture is silt loam, silty clay loam, or very fine sandy loam. Reaction is neutral to moderately alkaline.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 or 3. In most pedons structure is weak platy from depositional layering of the regolith. In some pedons the horizon is massive. Reaction is slightly alkaline or moderately alkaline.

Hannawa Series

The Hannawa series consists of shallow, poorly drained soils on uplands. They formed in loamy, calcareous glacial till. Slope ranges from 0 to 2 percent.

Hannawa soils are in a drainage sequence with somewhat excessively drained or excessively drained Summerville soils. They are also associated with Guff, Matoon, Ogdensburg, Nehasne, Malone, and Runeberg soils. Guff and Matoon soils are fine textured and are moderately deep over bedrock. Ogdensburg and Nehasne soils are moderately deep over bedrock, and Nehasne soils are better drained than Hannawa soils. Malone and Runeberg soils are loamy and very deep.

Typical pedon of Hannawa loam, in the town of Potsdam, 132 feet south, 22 degrees east of a point on the north side of Hoadley Road, 0.6 mile northeast of junction of Hadley Road and Baker Road:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; few medium distinct yellowish brown (10YR 5/6) mottles; weak medium granular structure; friable; many fine and medium roots; 5 percent rock fragments (gravel); neutral; abrupt smooth boundary.

Bw—8 to 14 inches; light yellowish brown (2.5Y 6/4) fine sandy loam; common fine distinct brownish yellow (10YR 6/8) and common coarse prominent dark brown (7.5YR 3/2) mottles; moderate medium subangular blocky structure; friable; few fine and medium roots; many fine and medium, and few coarse tubular pores; 12 percent rock fragments (10 percent gravel, 2 percent cobbles and large channers); neutral; clear smooth boundary.

Bg—14 to 19 inches; grayish brown (2.5Y 5/2) gravelly fine sandy loam; many medium faint dark brown (10YR 4/3) and brown (10YR 5/3) mottles and few fine distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; common medium and coarse tubular pores and common fine and medium vesicular pores; 20 percent rock fragments (gravel); neutral; abrupt smooth boundary.

R—19 inches; hard dolomitic limestone.

Thickness of the solum and depth to bedrock range from 10 to 20 inches. Rock fragments, mostly gravel size, range from 0 to 15 percent in the A horizon and from 0 to 20 percent below.

The A horizon has hue of 10YR; value is 2 or 3, 5 or less, dry, and chroma is 1 or 2. Texture is loam, silt loam, fine sandy loam, or sandy loam in the fine-earth fraction. Reaction is slightly acid or neutral.

The B horizon has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 2 to 4. Texture is fine sandy loam, loam, silt loam, or sandy loam in the fine-earth fraction. Reaction is neutral or slightly alkaline.

Heuvelton Series

The Heuvelton series consists of very deep, moderately well drained soils formed in clayey marine and lacustrine sediments. These soils are gently sloping to steep on marine beds, lake plains, and side slopes of dissected ridges. Slopes range from 0 to 45 percent.

Heuvelton soils are in a drainage sequence with somewhat poorly drained Muskellunge soils and poorly drained and very poorly drained Adjidaumo soils. They are also associated with Depeyster, Hailesboro, Elmwood, Flackville, Insula, and Summerville soils. Heuvelton soils are finer textured than Depeyster and Hailesboro soils, which consist mainly of silt, very fine sand, and lesser amounts of clay. Unlike Heuvelton soils, Elmwood and Flackville soils have a loamy or sandy mantle overlying clay. Insula, Summerville, and Nehasne soils formed in loamy glacial till and are less than 40 inches deep to bedrock.

Typical pedon of Heuvelton silty clay loam, 2 to 6 percent slopes, in the town of Gouverneur, 80 feet north-northwest of junction of U.S. Route 11 and farm access road, 1 mile south of junction of Bristol Road and U.S. Route 11:

Ap—0 to 7 inches; dark brown (10YR 4/3) silty clay loam; moderate very fine and fine granular and moderate medium subangular blocky structure; friable; many fine and few medium roots; common fine vesicular and few fine and medium tubular pores; moderately acid; abrupt smooth boundary.

BE—7 to 11 inches; brown (10YR 5/3) silty clay; common fine faint yellowish brown (10YR 5/4) mottles; moderate fine and medium angular blocky structure; friable; many fine and few medium roots; common fine vesicular and common fine and medium tubular pores; few faint clay films in pores; moderately acid; clear smooth boundary.

Bt—11 to 22 inches; dark brown (10YR 4/3) clay; brown (10YR 5/3) faces of peds; many coarse distinct yellowish brown (10YR 5/6) and few medium faint grayish brown (10YR 5/2) mottles; moderate fine and medium subangular blocky structure; friable; common fine roots; many fine vesicular and common fine and medium tubular pores; common distinct clay films on faces of peds and in pores; slightly acid; clear wavy boundary.

C1—22 to 40 inches; dark yellowish brown (7.5YR 4/4) silty clay loam; yellowish brown (10YR 5/4) faces of peds; strong fine and medium platy structure with some weak coarse prisms; firm; few fine and medium roots; few fine and medium vesicular and tubular pores, few macro pores; neutral; clear irregular boundary.

C2—40 to 72 inches; brown (10YR 5/3) varved silty clay loam and bands of very fine sandy loam; dark brown (10YR 4/3) silt coats on faces of peds; few fine distinct yellowish brown (10YR 5/4) mottles; moderate medium platy structure; firm; few fine roots; few medium vesicular and few very fine and fine tubular pores; strongly effervescent; moderately alkaline.

Thickness of the solum ranges from 20 to 40 inches. Depth to carbonates ranges from 20 to 70 inches.

Rock fragments make up 0 to 15 percent of the volume in the surface and subsurface horizons and from 0 to 10 percent below. Reaction ranges from strongly acid to neutral in the Ap, E, and BE horizons, moderately acid to slightly alkaline in the Bt and BC horizons, and neutral to moderately alkaline below.

The A horizon has hue of 7.5 YR to 2.5Y, value of 2 to 4, and chroma of 1 to 3. Texture is silt loam, silty clay loam, or silty clay in the fine-earth fraction. Structure is weak to strong, fine or medium granular, or subangular blocky. Consistence is friable or very friable.

The BA horizon is similar to the Bt horizon in color, texture, and consistence, but it has different structure and less translocated clay.

The E horizon, where it occurs, has hue of 7.5YR to 5Y, value of 5 or 6, and chroma of 2 or 3. In some pedons it has faint mottles. Texture is silt loam, very fine sandy loam, or silty clay loam in the fine-earth fraction. Structure is weak or moderate angular or subangular blocky or platy. Consistence is very friable to firm.

The B and E horizon, where it occurs, has color and texture similar to those of the Bt and the E horizons. In some pedons the horizon has few to many faint mottles.

The Bt horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 4. It has both low and high chroma mottles. In pedons with matrix colors in chroma of 2, the lithochromic color does not indicate an aquic moisture regime. Texture is clay, silty clay, or silty clay loam. Structure is moderate or strong, medium or coarse angular or subangular blocky and, in some pedons, coarse or very coarse prisms. Consistence is friable, and firm or very firm.

Some pedons with thicker sola have a BC horizon that has free carbonates and coarse or very coarse prismatic structure.

The C horizon has hue of 5YR to 5Y, value of 3 to 5, and chroma of 1 to 4. In most pedons texture is clay to silt loam and fine sand and very fine sand are in varves. Structure is platy from varving or the horizon is massive.

Hogansburg Series

The Hogansburg series consists of very deep, moderately well drained soils on uplands. These soils formed in loamy, calcareous glacial till. Slopes range from 0 to 8 percent.

Hogansburg soils are in a drainage sequence with well drained Grenville soils, somewhat poorly drained Malone soils, and poorly drained and very poorly drained Runeberg soils. They are also associated with Elmwood, Heuvelton, Nehasne, and Waddington soils. Hogansburg soils have more rock fragments in the solum and have a coarser texture in the substratum than Elmwood and Heuvelton soils have. Hogansburg soils have fewer rock fragments in the solum than Waddington soils have.

Typical pedon of Hogansburg fine sandy loam, 0 to 3 percent slopes, in the town of Potsdam, in a meadow 138 feet north, 70 degrees west from a point on Baker Road 0.6 mile north along road from junction with Hoadley Road:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) fine sandy loam, brownish gray (10YR 6/2) dry; weak, fine and medium granular structure; friable; many fine and few medium roots; common fine and medium tubular pores; 3 percent rock fragments less than 10 inches in diameter; slightly acid; clear smooth boundary.

Bw1—10 to 15 inches; brown (10YR 5/3) loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; common fine and medium tubular and vesicular pores; 5 percent rock fragments less than 10 inches in diameter; neutral; clear smooth boundary.

Bw2—15 to 25 inches; brown (10YR 5/3) fine sandy loam; many (25 percent) medium distinct light yellowish brown (2.5Y 6/4) and dark yellowish brown (10YR 4/4) mottles and few medium faint grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) mottles; weak very fine, fine and medium subangular blocky structure; friable; common fine roots; common fine and medium tubular and vesicular pores; 12 percent rock fragments less than 10 inches; few faint clay films on faces of peds; slightly alkaline; clear irregular boundary.

C1—25 to 38 inches; light yellowish brown (2.5Y 6/4) gravelly fine sandy loam; few fine distinct yellowish red (5YR 5/6) and few medium faint light brownish gray (10YR 6/2) mottles; weak fine platy structure; firm; few fine roots; common very fine and fine vesicular pores; 24 percent rock fragments, 3 percent greater than 3 inches; slight effervescence; moderately alkaline; gradual wavy boundary.

C2—38 to 72 inches; light yellowish brown (2.5Y 6/4) gravelly fine sandy loam; few fine and medium strong brown (7.5YR 5/6) mottles; moderate fine platy structure; very firm; few fine and medium vesicular pores; 20 percent rock fragments; 5 percent greater than 3 inches; slight effervescence; moderately alkaline.

Thickness of the solum ranges from 15 to 33 inches. Depth to carbonates ranges from 13 to 33 inches. Rock fragments range, by volume, from 3 to 15 percent in the A horizon, 5 to 35 percent in the B horizon, and 15 to 35 percent in the C horizon.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. Texture ranges from fine sandy loam to silt loam in the fine-earth fraction. It has fine or medium granular structure. Reaction ranges from strongly acid to neutral. In undisturbed areas pedons have an A horizon that is up to 5 inches thick and that has hue of 10YR or 7.5YR, value of 2 or 3, and chroma of 2.

The B horizon has hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 or 4. Texture ranges from fine sandy loam to silt loam in the fine-earth fraction. It has very weak to moderate, fine or medium subangular blocky structure. Reaction is strongly acid to slightly alkaline.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 4. Texture is fine sandy loam or loam in the fine-earth fraction. The horizon is calcareous, and is massive or has platy structure. Reaction is neutral to moderately alkaline.

Insula Series

The Insula series consists of shallow, well drained soils that formed in 10 to 20 inches of loamy glacial till. These soils are on bedrock-controlled uplands and on benches and ridges on marine and lake plains. Slopes range from 0 to 35 percent.

Insula soils are associated with Adjidaumo, Muskellunge, Nehasne, Quetico, and Summerville soils. They have a coarser texture and are shallower to bedrock than Adjidaumo and Muskellunge soils. Insula soils are shallower than Nahasne soils and deeper than Quetico soils. Typically, Insula soils overlie granite or other acidic bedrock, and Summerville soils overlie limestone, marble, or related, nonacid bedrock.

Typical pedon of Insula gravelly fine sandy loam, in an area of Quetico-Rock outcrop-Insula complex, 0 to 8 percent slopes, in the town of Hammond, 200 feet northwest of New York Route 12, in Duck Cove:

Oi—0 to 1 inch; slightly decomposed leaf litter.

Oa—1 to 3 inches; black (7.5YR 2/1) highly decomposed organic material with fine sand; very friable; many very fine, fine, and medium and common coarse roots; very strongly acid; abrupt wavy boundary.

Bw1—3 to 11 inches; brown (7.5YR 4/4) gravelly fine sandy loam; weak fine and very fine subangular blocky structure; very friable; many very fine, fine, and medium and common coarse roots; few very fine and fine pores; 20 percent rock fragments; strongly acid; gradual wavy boundary.

Bw2—11 to 16 inches; brown (7.5YR 4/4) gravelly fine sandy loam; moderate fine and very fine subangular blocky structure; very friable; many very fine and fine, common medium, and few coarse roots; few very fine and fine pores; 30 percent rock fragments; strongly acid; abrupt wavy boundary.

R—16 inches; pink granitic bedrock.

Thickness of the solum and depth to bedrock range from 10 to 20 inches. Rock fragments range, by volume, from 15 to 35 percent in the solum and to 45 percent in subhorizons of some pedons. Typically, gravel-size rock fragments are dominant, but cobble- and boulder-size fragments are significant. Stones and boulders within and on the soils range from 0 to 3 percent. The solum ranges from very strongly acid to slightly acid.

The A horizon, where it occurs, is 1 to 3 inches thick. It has hue of 10YR or 7.5YR and value and chroma of 2 or 3. Typically, texture in the fine-earth fraction is sandy loam or fine sandy loam, but in some pedons it is coarse sandy loam, loam, and silt loam.

The E horizon, where it occurs, has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 1 or 2. Typically, texture is sandy loam or fine sandy loam in the fine-earth fraction, but in some pedons it is coarse sandy loam, loam, and silt loam.

Some pedons have a thin Bs horizon that has textures similar to those as the Bw horizon.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 3 to 6. Typically, texture is sandy loam or fine sandy loam in the fine-earth fraction, but in some pedons it is coarse sandy loam, loam, and silt loam.

Bedrock is mainly granite or gneiss.

Kalurah Series

The Kalurah series consists of very deep, moderately well drained soils on uplands. These soils formed in loamy, calcareous glacial till. Slopes range from 0 to 8 percent.

Kalurah soils are in a drainage sequence with well drained Pyrities soils, somewhat poorly drained Malone soils, and poorly drained to very poorly drained Runeberg soils. They are also associated with Nehasne, Summerville, Insula, Adams, Croghan, Heuvelton, Depeyster, and Elmwood soils. Nehasne, Summerville, and Insula soils are less than 40 inches deep over bedrock. Sandy Adams and Croghan soils are on areas of outwash or deltaic deposits adjacent to Kalurah soils. Heuvelton, Depeyster, and Elmwood soils are on nearby, lower lying lake plains.

Typical pedon of Kalurah fine sandy loam, 3 to 8 percent slopes, in the town of Canton, 370 feet southwest of point on farm lane 2,060 feet southwest of point on New York Route 68, 1.5 miles northwest of hamlet of Langdon Corners:

Ap—0 to 11 inches; dark brown (10YR 3/3) fine sandy loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; very friable; many very fine and fine, and common medium roots; 12 percent rock fragments (10 percent gravel, 2 percent stones); moderately acid; abrupt smooth boundary.

Bw1—11 to 16 inches; brown (7.5YR 4/4) fine sandy loam; weak fine and medium subangular blocky structure; very friable; many very fine and fine, and common medium roots; common fine and medium vesicular pores; few worm holes and old root channels filled with Ap material; 12 percent rock fragments (10 percent gravel, 2 percent stones); slightly acid; clear irregular boundary.

Bw2—16 to 24 inches; brown (7.5YR 4/4) fine sandy loam; common medium distinct yellowish brown (10 YR 5/6) and light brownish gray (10YR 6/2) mottles; weak very fine and fine subangular blocky structure; very friable; common very fine and fine, and few medium roots; common fine and medium vesicular pores; few worm holes and old root channels filled with Ap material; 12 percent rock fragments (10 percent gravel, 2 percent stones); slightly acid; abrupt irregular boundary.

Bw3—24 to 47 inches; brown (10YR 4/3) gravelly fine sandy loam; common medium distinct light brownish gray (10YR 6/2) and yellowish brown (10 YR 5/6) mottles; weak medium and thick platy structure parting to weak fine and medium subangular blocky; firm; many medium and coarse vesicular pores, few with discontinuous clay linings; 20 percent rock fragments (15 percent gravel, 5 percent stones); slightly acid; gradual wavy boundary.

C—47 to 72 inches; dark yellowish brown (10 YR 4/4) gravelly fine sandy loam; few fine distinct yellowish brown (10YR 5/6) mottles in upper part; weak fine and medium platy structure; friable; few very fine and fine roots; common coarse, medium and fine vesicular and tubular pores, few with discontinuous clay linings; common light gray (10 YR 6/1) stripped sand grains; 20 percent rock fragments (15 percent gravel, 5 percent cobbles); neutral.

Thickness of the solum ranges from 30 to 50 inches. Depth to carbonates is greater than 40 inches. Depth to bedrock is greater than 60 inches. Rock fragments, mostly gravel, range from 5 to 15 percent in the surface layer, 5 to 35 percent in the subsoil, and 5 to 50 percent in the substratum.

The A horizon has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 2 or 3. Texture in the fine-earth fraction is loam or silt loam, but in most pedons it is fine sandy loam. Reaction ranges from moderately acid to neutral.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 to 6; chroma of 2 is below a depth of more than 20 inches. Part of the Bw horizon above a depth of 24 inches is mottled in low chroma colors. Texture is sandy loam, loam, or silt loam in the fine-earth fraction, but in most pedons it is fine sandy loam. Reaction is slightly acid or neutral.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 to 5, and chroma of 2 to 6. Texture is fine sandy loam, sandy loam, or loam in the fine-earth fraction. In some pedons it has thin layers of loamy sand. Reaction ranges from neutral to moderately alkaline.

Lovewell Series

The Lovewell series consists of very deep, moderately well drained soils on flood plains. These soils formed in recent alluvium. Slopes range from 0 to 3 percent.

Lovewell soils are in a drainage sequence with somewhat poorly drained Cornish soils. They are associated with Adams, Croghan, Eelweir, and Nicholville soils. Lovewell soils are not as sandy as Adams and Croghan soils but are also finer textured than loamy Eelweir soils.

Typical pedon of Lovewell silt loam, in the town of Dekalb, 60 feet north of the Oswegatchie River, 1/4 mile east of Snowshoe Island:

Ap1—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium and fine granular; friable; common fine and few medium roots; many interstitial pores; slightly acid; clear wavy boundary.

AP2—10 to 14 inches; very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) silt loam; weak medium and fine granular; friable; common fine and few medium roots; many interstitial pores; slightly acid; clear wavy boundary.

Bw1—14 to 23 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine and medium subangular blocky structure; friable; slightly acid; common fine roots; common fine and very fine vesicular pores; slightly acid; gradual wavy boundary.

Bw2—23 to 29 inches; dark yellowish brown (10YR 4/4) silt loam; common fine distinct light yellowish brown (2.5Y 6/4) and light brownish gray (10YR 6/2) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; common fine vesicular and few fine tubular pores; slightly acid; gradual wavy boundary.

CB—52 to 72 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; few fine distinct light brownish gray (2.5Y 6/2), few fine distinct light brownish gray (2.5Y 6/2), few fine distinct dark brown (7.5YR 4/4), and yellowish red (5YR 5/6) mottles; weak fine and medium platy structure; friable; few fine roots; common very fine vesicular pores; slightly acid; diffuse wavy boundary.

C—52 to 72 inches; grayish brown (10YR 5/2) very fine sandy loam; few very pale brown (10YR 7/3) stripped sand grains; massive; friable; slightly acid.

Some pedons have a few pebbles as much as 1/4 inch in diameter. Thickness of the solum ranges from 20 to 30 inches. Mottles that have chroma of 2 or less are between depths of 16 and 24 inches. In unlimed areas reaction is very strongly acid to slightly acid throughout.

The Ap horizon has hue of 10YR or 2.5Y; value is 3 to 5, 6 or 7, dry, and chroma is 2 to 4. Texture is silt loam or very fine sandy loam. The Ap horizon has weak to strong, very fine to medium granular structure. Consistence is very friable or friable.

The B horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 to 6. Texture is silt loam or very fine sandy loam. The B horizon is weak or moderate, fine or medium granular or subangular blocky structure. Consistence is very friable or friable.

The C horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam, very fine sandy loam, or loamy very fine sand. In some pedons below a depth of 40 inches the horizon has strata ranging from silt loam to fine gravel. It has platy structure, or is massive or single grain, depending on texture. Consistence ranges from friable to loose.

Loxley Series

The Loxley series consists of very deep, very poorly drained soils formed in organic material more than 51 inches thick, generally overlying sandy mineral deposits. These soils are in depressions on outwash plains, moraines, and bedrock-controlled uplands. In some places they are on flood plains. Slopes range from 0 to 2 percent.

Loxley soils are closely associated with Dawson soils, which are less than 51 inches deep over mineral material. They are also associated with Adams, Colton, Duxbury, Searsport, and Tughill soils. Unlike Loxley soils, Adams, Colton, Duxbury, Searsport, and Tughill soils do not have mineral soil material above a depth of 16 inches.

Typical pedon of Loxley mucky peat, in the town of Piercefield, 400 feet west-northwest of westmost shore of northwest lobe of Black Pond, in a sphagnum bog:

Oe—0 to 3 inches; very dark grayish brown (10YR 3/2) broken face, very dark brown (10YR 2/2) rubbed hemic material (mucky peat); fibric material (peat) about 70 percent fibers, 38 percent rubbed; granular structure; very friable; primarily sphagnum fibers and live roots; extremely acid (pH 3.5 in water); abrupt smooth boundary.

Oa1—3 to 36 inches; black (10YR 2/1) broken face and rubbed sapric material (muck); about 30 percent fibers, 5 percent rubbed; massive; very friable; mostly sphagnum fibers, few partly decomposed woody stems; extremely acid; abrupt smooth boundary.
Oa2—36 to 72 inches; black (10YR 2/1) broken face and rubbed sapric material (muck); about 20 percent fibers, 5 percent rubbed; massive; very friable; mostly sphagnum fibers; extremely acid.

The combined thickness of organic layers exceeds 51 inches. In some pedons as much as 18 inches of sphagnum moss is on the surface. Reaction is extremely acid throughout.

The surface tier has hue of 2.5YR to 10YR, value of 2 to 5, and chroma of 0 to 4. It is dominantly fibric materials (peat), but in some pedons it is composed of hemic material (mucky peat) or sapric material (muck). The surface layer mostly derives from sphagnum moss or herbaceous materials. Structure is either platy or granular.

The subsurface tier has hue of 2.5YR to 10YR, value of 2 to 5, and chroma of 0 to 4. It is dominantly sapric (muck), but in some pedons it has thin layers of hemic material (mucky peat) or fibric material (peat). Structure is either platy or massive.

The bottom tier has hue of 2.5YR to 10YR, value of 2 to 5, and chroma of 0 to 4. It is dominantly sapric material (muck), but in some pedons it has thin layers of hemic material (mucky peat) or fibric material (peat). It is massive or has platy structure.

Lyman Series

The Lyman series consists of shallow, somewhat excessively drained soils formed in glacial till. These soils are gently sloping to very steep on rocky hills and tops and upper backslopes of mountains where underlying folded and faulted bedrock strongly influences topography. Slopes range from 3 to 80 percent.

Lyman soils are associated with Borosaprists, Fluvaquents, and Adams, Berkshire, Colton, Crary, Dawson, Loxley, Potsdam, Ricker, and Sunapee soils. They are not as deep as very deep Borosaprists; Fluvaquents; Adams, Berkshire, Colton, Crary, Dawson, Loxley, Potsdam, and Sunapee soils; and moderately deep Tunbridge soils. Unlike Lyman soils, Ricker soils are organic.

Typical pedon of Lyman silt loam, in an area of Tunbridge-Lyman-Dawson complex, rolling, very rocky, in the town of Dekalb, 20 feet west of point on woodland road, 525 feet northeast of point on County Road 136, 0.6 mile southeast of U.S. Route 11:

A—0 to 3 inches; black (5YR 2.5/1) silt loam; weak fine granular structure; friable; many fine roots; 5 percent rock fragments; extremely acid; abrupt broken boundary.
E—3 to 4 inches; pinkish gray (5YR 6/2) silt loam; weak medium subangular blocky structure; friable; many fine roots; 5 percent rock fragments; very strongly acid; abrupt broken boundary.
Bs—4 to 14 inches; reddish brown (5YR 4/4) silt loam; moderate medium subangular blocky structure; friable, slightly smeary; common fine roots; 10 percent rock fragments; very strongly acid; abrupt irregular boundary.
R—Granitic bedrock.

Thickness of the solum and depth to bedrock range from 10 to 20 inches. Rock fragments are generally granite or gneiss and range, by volume, from 5 to 15 percent in the A horizon and from 5 to 38 percent in the subsoil. In unlimed areas reaction ranges from extremely acid to moderately acid.

The A horizon is neutral or has hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 2. Texture is fine sandy loam, sandy loam, very fine sandy loam, or silt loam.

The E horizon, where it occurs, has hue of 5YR to 10YR, value of 2 or 3, and chroma of 2. Texture is sandy loam to very fine sandy loam, silt loam, or loam.

The Bhs horizon, where it occurs, has value and chroma of 3. Texture is similar to that of the Bh horizon.

The Bs horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 3 to 8. Texture is sandy loam to very fine sandy loam, silt loam, or loam.

The BC horizon, where it occurs, has hue of 10YR to 5Y, value of 3 to 5, and chroma of 3 or 4. It has the same texture as the B horizon.

The R layer generally is igneous or metaigneous granite or gneiss.

Lyme Series

The Lyme series consists of very deep, poorly drained soils that formed in loamy glacial till on uplands. Slopes range from 0 to 15 percent.

Lyme soils are in a drainage sequence with well drained Berkshire soils, moderately well drained Sunapee soils, and very poorly drained Tughill soils. Lyme soils are closely associated with Adirondack, Crary, Dawson, Loxley, Lyman, and Tunbridge soils. Unlike Lyme soils, Adirondack and Crary soils have a firm or very firm substratum. Unlike Lyme soils, Lyman soils are shallow to bedrock and Tunbridge soils are moderately deep to bedrock. Unlike Lyme soils, Dawson and Loxley soils are organic.

Typical pedon of Lyme sandy loam, in an area of Adirondack-Tughill-Lyme complex, 0 to 8 percent slopes, very bouldery, in the town of Piercefield, 40 feet east of Mount Arab Lake Road, 350 feet south of railroad crossing at Childwold Station, 0.6 mile east of junction of County Road 75:

A—0 to 3 inches; very dark gray (10YR 3/1) sandy loam, light brownish gray (10YR 6/2) dry; weak fine and medium subangular blocky structure; friable; many fine roots; 5 percent rock fragments; strongly acid; clear irregular boundary.

Bg1—3 to 6 inches; grayish brown (10YR 5/2) sandy loam; common medium distinct strong brown (7.5YR 5/6) mottles; moderate medium platy structure; friable; few fine and few medium roots; few medium vesicular and few medium tabular pores; 5 percent rock fragments; strongly acid; abrupt irregular boundary.

Bg2—6 to 11 inches; dark grayish brown (10YR 4/2) sandy loam; common coarse distinct brown (10YR 5/3) mottles; weak medium subangular blocky structure; friable; few fine roots; few medium vesicular pores; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bw—11 to 16 inches; brown (10YR 4/2) and grayish brown (10YR 5/2) gravelly sandy loam; common fine distinct dark yellowish brown (10YR 4/4) mottles; massive; friable; 15 percent rock fragments; strongly acid; clear wavy boundary.

Bw—11 to 16 inches; brown (10YR 4/3) cobbly sandy loam; many coarse distinct dark reddish brown (5YR 3/3) mottles; weak fine and medium subangular blocky structure; friable; 15 percent rock fragments; strongly acid; diffuse wavy boundary.

C1—16 to 24 inches; dark grayish brown (10YR 5/3) gravelly sandy loam; few coarse prominent grayish brown (10YR 5/2) gravelly sandy loam, common fine distinct dark yellowish brown (10YR 4/4) mottles; massive; friable; 15 percent rock fragments; strongly acid; clear wavy boundary.

C2—24 to 72 inches; brown (10YR 5/3) gravelly sandy loam; few coarse prominent gray (10YR 6/1) and many coarse prominent reddish brown (5YR 4/4) and yellowish red (5YR 5/6) mottles; massive; friable; 15 percent rock fragments; strongly acid.

Thickness of the solum ranges from 15 to 36 inches. Rock fragments make up 5 to 15 percent of the volume in the A horizon, 5 to 30 percent in the B horizon, and 10 to 35 percent in the C horizon. In unlimed areas, reaction is very strongly acid or strongly acid throughout. Consistence is very friable or friable, moist. Depth to bedrock is greater than 60 inches.

The A or Ap horizon has hue of 5YR to 2.5Y, value of 2 or 3, and chroma of 1 or 2. Texture is loam, sandy loam, or fine sandy loam, or their gravelly or cobbly analogs.

The Bg horizon is neutral or has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 2. Texture is loam, fine sandy loam, or sandy loam, or their gravelly or cobbly analogs.

The Bw horizon or the BC horizon, where it occurs, is neutral or has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 4. It has the same texture as the Bg horizon.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. Texture is sandy loam or fine sandy loam, or their gravelly or cobbly analogs. In some pedons, below a depth of 30 inches, the horizon has thin layers of loamy sand or loamy coarse sand.

Malone Series

The Malone series consists of very deep, somewhat poorly drained soils on uplands. These soils formed in loamy, calcareous glacial till. Slopes range from 0 to 8 percent.

Malone soils are in a drainage sequence with well drained Pyrities soils, moderately well drained Kalurah soils, and very poorly drained Runeberg soils. They are also in a drainage sequence with well drained Grenville soils and moderately well drained Hogansburg soils. They are also associated with Ogdensburg, Muskellunge, Hailesboro, and Swanton soils. Ogdensburg soils are moderately deep near bedrock-controlled landscapes, and are in topographic positions similar to those of Malone soils. Muskellunge, Hailesboro, and Swanton soils are on nearby, low-lying lake plains.

Typical pedon of Malone loam, 0 to 8 percent slopes, very stony, in the town of Potsdam, 55 feet northwest of a point on Ellis Road 0.6 mile west of junction of Ellis Road and West Potsdam Road:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) loam, light brownish gray (10YR 6/2) dry; weak fine subangular blocky structure; friable; common fine, many medium, and common coarse roots; 5 percent rock fragments (2 percent gravel and 3 percent cobbles); slightly acid; diffuse wavy boundary.

Bw—10 to 19 inches; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; common medium faint yellowish brown (10YR 5/4) and few fine faint light olive brown (2.5Y 5/2) mottles; weak medium and coarse subangular blocky structure; friable;

common fine and many very fine roots; common fine and medium tubular pores; 30 percent rock fragments (25 percent gravel and 5 percent cobbles and stones); slightly acid; clear irregular boundary.

Bg—19 to 25 inches; grayish brown (2.5Y 5/2) gravelly sandy loam; common medium faint light olive brown (2.5Y 5/4) mottles; weak medium and coarse prismatic structure parting to weak medium subangular blocky; firm; few fine medium and coarse tubular pores; 15 percent rock fragments (10 percent gravel, 5 percent cobbles and stones); very slightly effervescent; neutral; gradual irregular boundary.

Cg—25 to 72 inches; light brownish gray (2.5Y 6/2) gravelly sandy loam; common medium distinct yellowish brown (10YR 5/6) mottles in the upper part; weak thick platy structure; firm; few fine and medium tubular pores; 20 percent rock fragments; slightly effervescent; neutral.

Thickness of the solum ranges from 18 to 36 inches. Depth to carbonates ranges from 20 to 50 inches. Depth to bedrock is greater than 60 inches. Limestone or dolomitic limestone rock fragments, gravel cobbles, and channers range, by volume, from 5 to 35 percent in the solum and from 5 to 50 percent in the substratum.

The A horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. Texture is silt loam, loam, fine sandy loam, or sandy loam in the fine-earth fraction. Reaction is moderately acid or slightly acid.

The Bw horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 6. Texture is loam, fine sandy loam, or sandy loam in the fine-earth fraction. Reaction is slightly acid or neutral.

The Bg horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 1 or 2. Texture is loam, fine sandy loam, or sandy loam in the fine-earth fraction. In some pedons it has thin subhorizons of silty clay loam or silt loam. Reaction is slightly acid or neutral.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 4. Texture is sandy loam or fine sandy loam in the fine-earth fraction. Reaction ranges from neutral to moderately alkaline.

Matoon Series

The Matoon series consists of moderately deep, somewhat poorly drained soils formed in fine marine sediments. These soils are nearly level to moderately sloping on marine basins where underlying bedrock is 20 to 40 inches below the surface. Slopes range from 0 to 6 percent.

Matoon soils are in a drainage sequence with poorly drained and very poorly drained Guff soils. They are also associated with Heuvelton, Muskellunge, Adjidaumo, Insula, Summerville, Nehasne, Ogdensburg, and Hannawa soils. Heuvelton, Muskellunge, and Adjidaumo soils formed in similar materials as Matoon soils but are all very deep. Insula and Summerville soils are loamy and shallow to bedrock. Nehasne soils are higher on the landscape than Matoon soils and are coarse-loamy. Matoon soils and coarse-loamy Ogdensburg and shallow Hannawa soils all are in similar landscape positions.

Typical pedon of Matoon silty clay loam, 0 to 2 percent slopes, in the town of Morrisville, 200 feet northeast of point on Old Mills Road, 200 feet from junction with New York Route 37:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 6/1) dry; moderate very fine, fine and medium granular structure; very friable; many fine and few medium roots; slightly acid, abrupt smooth boundary.

BAg—8 to 12 inches; dark gray (10YR 4/1) and gray (10YR 5/1) silty clay loam; grayish brown (10YR 5/2) faces of peds; 40 percent many fine and medium distinct strong brown (7.5YR 4/6 and 5/6) and common fine faint yellowish brown (10YR 5/4) mottles; moderate fine and medium subangular blocky structure; friable; common fine and few medium roots; many fine vesicular, few fine and medium tubular pores; few faint silt linings in tubular pores; neutral; abrupt smooth boundary.

Btg1—12 to 16 inches; gray (5Y 5/1) silty clay; dark gray (10YR 4/1) to gray (10YR 5/1) faces of peds; many fine and medium distinct dark yellowish brown (10YR 4/4), strong brown (7.5YR 4/6), and brown ((7.5YR 5/4) mottles; moderate medium prismatic parting to moderate medium subangular blocky structure; firm; common fine and few medium roots; few very fine, fine and medium vesicular pores; common distinct dark gray (10YR 4/1) clay films on faces of peds and in pores; neutral; clear wavy boundary.

Btg2—16 to 27 inches; dark grayish brown (10YR 4/2) clay; few fine and medium faint yellowish brown (10YR 5/4) mottles; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few fine and medium roots; few fine and medium vesicular pores; few faint clay films on faces of peds and in pores; less than 1 percent rock fragments; slightly alkaline; slightly effervescent; abrupt smooth boundary.

R—27 inches; sandstone bedrock.

Thickness of the solum ranges from 16 to 40 inches. Depth to bedrock ranges from 20 to 40 inches.

In most pedons the horizon above bedrock has carbonates. Rock fragments, mostly gravel or cobbles, range, by volume, from 0 to 2 percent in the A horizon and in the upper part of the B horizon and from 0 to 20 percent in the lower part of the B horizon and the C horizon.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 to 3. Texture is silt loam or silty clay loam. Reaction is slightly acid or neutral.

The BA horizon has hue of 10YR to 2.5Y, value of 3 to 6, and chroma of 1 or 2. Texture is silt loam, silty clay loam, or silty clay. Reaction is neutral or slightly alkaline.

Some subhorizons of the Bt horizon have hue of 10YR to 2.5Y, value of 4 to 6, and chroma of 1 or 2. The horizon is mottled. Texture is silty clay loam, silty clay, or clay. Reaction is neutral or slightly alkaline.

The C horizon, where it occurs, has hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 or 2. In most areas texture is silt loam, silty clay loam, or silty clay in the fine-earth fraction. In some pedons the horizon has silt and very fine sand in varves. In some pedons it has a thin layer of saprolite above bedrock. Reaction is neutral to moderately alkaline.

The R horizon is sandstone, dolomitic sandstone, or limestone bedrock.

Mino Series

The Mino series consists of very deep, somewhat poorly drained soils on stream terraces or on lake or marine plains. They formed in loamy sediments deposited near shore or on levees or terraces. Slopes range from 0 to 3 percent.

Mino soils are in a drainage sequence with moderately well drained Eelweir soils. They are also associated with Swanton, Elmwood, Munuscong, Croghan, Deford, and Malone soils. Unlike Mino soils, Swanton, Elmwood, and Munuscong soils have a clayey substratum within a depth of 40 inches. Croghan and Deford soils are sandy. Malone soils have more rock fragments than Mino soils.

Typical pedon of Mino fine sandy loam, in the town of Waddington, 650 feet south on Hardscrabble Road from junction with Waddington-Chamberlain's Corners Road, 100 feet west, in stand of second-growth hardwoods:

Ap—0 to 10 inches; dark gray (10YR 4/1) fine sandy loam; light brownish gray (10YR 6/2) dry; common fine faint gray (10YR 6/1) mottles; moderate fine and medium subangular blocky structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

E—10 to 12 inches; gray (10YR 5/1) fine sandy loam; common fine faint gray (10YR 6/1) and dark gray (10YR 4/1) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; strongly acid; clear irregular boundary.

Bg—12 to 16 inches; dark grayish brown (10YR 4/2) fine sandy loam; very dark grayish brown (10YR 3/2) faces of peds; many medium faint brown (10YR 4/3) and (10YR 5/3) mottles; moderate medium angular blocky structure; friable; common fine and medium roots; common fine and medium vesicular and tubular pores; moderately acid; clear wavy boundary.

Bw—16 to 24 inches; brown (10YR 4/3) fine sandy loam; many medium faint brown (10YR 5/3) mottles; weak coarse subangular blocky structure; friable; few fine and medium roots; few fine and medium vesicular and tubular pores; moderately acid; clear wavy boundary.

BC—24 to 32 inches; grayish brown (10YR 5/3) very fine sandy loam; moderate medium faint pale brown (10YR 6/3) and moderate medium distinct strong brown (7.5YR 5/6) mottles; weak fine and medium platy structure; friable; common very fine and fine vesicular pores; few fine tubular pores; many thin layers of silt loam; slightly acid; clear wavy boundary.

C—32 to 72 inches; yellowish brown (10YR 5/4) fine sandy loam; many medium faint grayish brown (10YR 5/2) mottles; massive parting to fine and medium plates along depositional planes; friable; many thin layers of silt loam; slightly acid.

Thickness of the solum ranges from 20 to 40 inches. Depth to bedrock is greater than 60 inches. Rock fragments, mostly fine gravel, range, by volume, from 0 to 5 percent throughout.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 to 3. Texture is very fine sandy loam, fine sandy loam, loam, or silt loam. Reaction ranges from strongly acid to slightly acid.

The E horizon has hue of 10YR, value of 5 to 7, chroma of 1 or 2. Texture is very fine sandy loam, fine sandy loam, loam, or silt loam. Reaction ranges from strongly acid to slightly acid.

The Bg horizon has hue of 10YR, value of 4 to 6, chroma of 2. Texture is loam or sandy loam, but in most pedons it is very fine sandy loam or fine sandy loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4, but chroma of 2 makes up less than 50 percent of color matrix. Texture is loam or sandy loam, but in most pedons it is fine sandy loam or very fine sandy loam. In some pedons it has thin subhorizons of silt loam or loamy very fine sand. Reaction ranges from moderately acid to neutral.

The BC horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4. Texture is loam or sandy loam, but in most pedons it is fine sandy loam or very fine sandy loam. In most pedons it has thin layers of silt loam or loamy very fine sand. Reaction ranges from moderately acid to neutral.

The C horizon has hue of 10YR to 2.5Y, value of 4 to 6, and chroma of 1 to 4. Texture is loam, sandy loam, or very fine sandy loam, but in most pedons it is fine sandy loam. In some pedons the horizon has thin layers of very fine sand, loamy very fine sand, or silt loam. In some pedons it is fine sand to silty clay below a depth of 40 inches. Reaction ranges from slightly acid to moderately alkaline.

Munuscong Series

The Munuscong series consists of very deep, very poorly drained soils formed in loamy materials deposited over fine marine sediments. These soils are nearly level in low-lying areas on marine plains and in basins on uplands. Slopes range from 0 to 2 percent.

Munuscong soils are in a drainage sequence with moderately well drained Elmwood soils and somewhat poorly drained and poorly drained Swanton soils. They are also associated with Adjidaumo, Dorval, Guff, Hannawa, Ogdensburg, Runeberg, Stockholm, and Wegatchie soils. Munuscong soils are coarser in the subsoil than Adjidaumo, Wegatchie, and Guff soils. Munuscong soils are deeper to bedrock than Guff, Hannawa, and Ogdensburg soils. Unlike Munuscong soils, Dorval soils have an organic subsoil. Munuscong soils have a finer textured substratum than Runeberg soils and a finer textured subsoil than Stockholm soils.

Typical pedon of Munuscong mucky fine sandy loam, in the town of Lisbon, 400 feet west-southwest of point on County Road 53, 100 feet east-southeast of intersection of Fisher Road:

Ap—0 to 8 inches; black (10YR 2/1) mucky fine sandy loam, grayish brown (10YR 5/2) dry; strong medium granular structure; friable; many fine roots; neutral; abrupt wavy boundary.

Bg—8 to 22 inches; light gray (10YR 6/1) fine sandy loam; common medium prominent yellowish brown (10 YR 5/4) and brownish yellow (10YR 6/6) mottles; many whitewashed (10YR 8/1) fine sand grains; weak fine subangular blocky structure; very friable; few fine and medium tubular and vesicular, few coarse tubular pores; thin grayish brown firm lens at bottom of horizon with few coarse pores and thin continuous clay linings; common fine roots; slightly alkaline; clear wavy boundary.

BCg—22 to 26 inches; grayish brown (10YR 5/2) fine sandy loam; common medium prominent yellowish red (5YR 5/6) and common medium distinct light gray (10YR 7/2) mottles; very weak thin platy structure; friable; few fine and medium vesicular pores; few fine roots; slightly alkaline; slightly effervescent; abrupt smooth boundary.

2Cg1—26 to 38 inches; grayish brown (10YR 5/2) silty clay; few thin lenses of gray (10YR 5/1) fine sandy loam, $1^1/_2$ inches total thickness; many medium and coarse distinct yellowish brown (10YR 5/6) and few medium faint light gray (10YR 6/1) mottles; weak thick platy structure (varved); firm, slightly sticky; very fine, medium and coarse pores, thin discontinuous clay films in larger pores; few fine roots; moderately alkaline; slightly effervescent; gradual wavy boundary.

2Cg2—38 to 48 inches; gray (10 YR 5/1) silty clay loam; many coarse prominent reddish brown (2.5YR 4/4, 5YR 4/4) mottles and common medium distinct brown (7.5YR 4/4) root stains in old root channels; weak thick platy structure; firm, sticky; few fine, medium and coarse pores; few fine roots; moderately alkaline; slightly effervescent; gradual wavy boundary.

2Cg3—48 to 98 inches; dark gray (10YR 5/1) silty clay; few coarse prominent olive brown (2.5Y 4/4) mottles and white (N 8/0, 10YR 8/2) shell fragments; weak fine and medium platy structure; firm, sticky; few fine, medium and coarse pores; few fine roots in top 6 inches; moderately alkaline; strongly effervescent.

Thickness of the solum ranges from 20 to 40 inches. Depth to carbonates ranges from 20 to 40 inches. Rock fragments range, by volume, from 0 to 5 percent throughout.

The A horizon has hue of 10YR, chroma of 1 or 2, and value of 2 or 3. Texture is fine sandy loam or sandy loam. Reaction is slightly acid to slightly alkaline.

The Bg horizon has hue of 10YR to 5Y, chroma of 1 or 2, and value of 4 to 6. Texture is fine sandy loam or sandy loam. In some pedons it has thin strata of loam or sandy clay loam. It has weak, medium or coarse subangular blocky structure. Reaction ranges from slightly acid to slightly alkaline.

The BCg horizon, where it occurs, has characteristics similar to those of the Bg horizon, except for structure. The structure of the BCg horizon is similar to that of the 2C horizon.

The 2C horizon has hue of 5YR to 5Y, chroma of 1 to 4, and value of 5 or 6. Texture is silty clay, silty clay loam, or clay. It is massive or has weak angular blocky or platy structure. Reaction is slightly alkaline or moderately alkaline.

Muskellunge Series

The Muskellunge series consists of very deep, somewhat poorly drained soils on marine plains. These soils formed in clayey marine deposits. Slopes range from 0 to 6 percent.

Muskellunge soils are in a drainage sequence with moderately well drained Heuvelton soils and poorly drained and very poorly drained Adjidaumo soils. They are closely associated with Insula, Matoon, Summerville, and Swanton soils. Muskellunge soils are deeper to bedrock than Insula, Matoon, and Summerville soils. They are finer textured in the solum than Swanton soils.

Typical pedon of Muskellunge silty clay loam, 0 to 2 percent slopes, in the town of Gouverneur, 90 feet southeast of Peabody Road, 1/10 mile south of junction of Peabody Road and Stevens Road:

Ap1—0 to 7 inches; very dark grayish brown (10YR 3/2) silty clay loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many fine and few medium roots; neutral; abrupt smooth boundary.

Ap2—7 to 12 inches; very dark grayish brown (10YR 3/2) silty clay loam, light brownish gray (10YR 6/2) dry; moderate fine subangular blocky structure; friable; many fine roots; neutral; abrupt smooth boundary.

Btg—12 to 17 inches; dark grayish brown (10YR 4/2) clay; many moderate distinct dark yellowish brown (10YR 4/4) mottles; moderate medium subangular blocky structure; friable; common fine roots; many very fine and common fine tubular pores; slightly alkaline; clear smooth boundary.

Bt1—17 to 25 inches; brown (10YR 4/3) clay; grayish brown (10YR 5/2) faces of peds; common medium distinct dark yellowish brown (10YR 4/4) mottles; weak very coarse prismatic structure parting to moderate fine and medium subangular blocky; friable; few fine roots; common fine tubular pores; common distinct clay films on peds and in pores; slightly alkaline; clear wavy boundary.

Bt2—25 to 37 inches; dark yellowish brown (10YR 4/4) silty clay with grayish brown (2.5Y 5/2) faces of peds; common medium distinct brown (10YR 4/3) mottles; weak coarse prismatic structure parting to moderate medium angular blocky; firm; few fine roots; few fine tubular pores; common distinct clay films on peds and in pores; slightly alkaline; clear wavy boundary.

C1—37 to 48 inches; brown (10YR 4/3) silty clay; few prominent grayish brown (10YR 5/2) calcium carbonate coats; few prominent rounded light gray (10YR 7/2) calcium carbonate concretions; weak coarse platy structure; firm; few fine tubular pores; strongly effervescent; moderately alkaline; gradual wavy boundary.

C2—48 to 72 inches; brown (10YR 4/3) silty clay; olive gray (5Y 5/2) faces of peds; weak coarse platy structure; firm; strongly effervescent; moderately alkaline.

The solum thickness ranges from 20 to 40 inches. Depth to carbonates ranges from 20 to 60 inches. Rock fragments range, by volume, from 0 to 5 percent in the solum and from 0 to 10 percent in the substratum. Reaction ranges from strongly acid to neutral in the A horizon, strongly acid to slightly alkaline in the B horizon, and neutral to moderately alkaline in the substratum.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 to 3. Texture is silt loam or silty clay loam.

The E horizon, where it occurs, has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 to 3. It is mottled. Texture is silt loam or silty clay loam.

The B horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 4. It is mottled. Texture is silty clay loam, clay, or silty clay within the range of 35 to 60 percent clay. Structure is weak to strong prismatic or subangular or angular blocky.

The C horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 to 3. Texture is silty clay or clay.

Naumburg Series

The Naumburg series consists of very deep, somewhat poorly drained and poorly drained soils formed in sandy deltaic or glaciofluvial deposits. These soils are on low sand plains and terraces. Slope ranges from 0 to 18 percent.

Naumburg soils are in a drainage sequence with somewhat excessively drained or excessively drained Adams soils, moderately well drained Croghan soils, and very poorly drained Searsport soils. They are closely associated with Coveytown, Dorval, Malone, and Stockholm soils. Unlike Naumburg soils, Coveytown soils are loamy in the substratum and Stockholm soils are clayey in the substratum. Unlike Naumburg soils, Dorval soils are organic. Naumburg soils are coarser textured than Malone soils.

Typical pedon of Naumburg loamy fine sand, in the town of Brasher, 2,500 feet west, 20 degrees north of intersection of Rice and Paxton Roads, 4,000 feet north of bridge on U.S. Route 11:

Oe—0 to 5 inches; black (10YR 2/1) moderately decomposed organic matter (hemic material) in a mat of living roots; massive; friable; many fine roots; strongly acid; abrupt smooth boundary.

E1—5 to 17 inches; pinkish gray (7.5YR 7/2) loamy fine sand; single grain; loose; common fine roots; strongly acid; abrupt wavy boundary.

E1—17 to 19 inches; reddish gray (5YR 5/2) fine sand; few fine faint dark brown (7.5YR 4/4) mottles; massive; friable, loose; few fine roots; strongly acid; abrupt wavy boundary.

Bh—19 to 21 inches; dark reddish brown (5YR 2/2) loamy fine sand; massive; weak fine and medium granular structure; very friable; 20 percent firm; clear wavy boundary.

Bs—21 to 31 inches; brown (7.5YR 4/4) sand; common medium distinct yellowish red (5YR 5/6, 5YR 5/8) and brown (10YR 5/3) mottles; single grain; loose; 5 percent firm parts 2 to 6 inches in diameter; few dark brown (7.5YR 3/2) very firm iron nodules 1/4- to 1/2-inch in diameter; few fine roots; strongly acid; gradual wavy boundary.

BC—31 to 41 inches; yellowish brown (10YR 5/4) sand; many coarse faint strong brown (7.5YR 5/6), dark yellowish brown (10YR 4/4), and grayish brown (2.5Y 5/2) mottles; single grain; loose; strongly acid; gradual wavy boundary.

C—41 to 72 inches; light brownish gray (10YR 6/2) sand; common coarse faint light yellowish brown (2.5Y 6/4) and distinct yellowish brown (10YR 5/6) mottles, decreasing in quantity and size with depth; single grain; loose; strongly acid.

Thickness of the solum ranges from 18 to 42 inches. Depth to bedrock is more than 60 inches. Most pedons do not have rock fragments; some pedons are as much as 5 percent rock fragments, by volume. The spodic horizon, which consists of the Bh, Bhs, Bs, or all three horizons, ranges from 7 to 30 inches thick.

The O horizon has hue of 5YR to 10YR, or is neutral; value is 2 or 3 and chroma is 0 to 4. The horizon consists of an undecomposed mat of leaves and needles to well decomposed, organic material.

In some pedons, in place of the O horizon, the Ap or A horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3. Texture is fine sandy loam, sandy loam, loamy fine sand, loamy fine sand, loamy sand, or sand. In unlimed areas reaction ranges from extremely acid to strongly acid.

The E horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 1 to 3. It is similar to the A or Ap horizon. Consistence is friable to loose. Reaction ranges from extremely acid to strongly acid.

The Bh horizon has hue of 2.5YR to 10YR, value of 2 or 3, and chroma of 1 to 3. Texture is loamy fine sand to sand. It is structureless or has weak granular or subangular blocky structure. Consistence ranges from friable to loose, and in most pedons 5 to 40 percent of the horizon is firm to extremely firm.

Reaction ranges from extremely acid to strongly acid.

The Bhs horizon, where it occurs, has hue of 2.5YR to 10YR and value and chroma of 2 or 3. Texture is similar to that of the Bh or Bs horizon.

The Bs horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 3 to 6. Texture is loamy fine sand to sand. Consistence is friable to loose, but in some pedons is up to 10 percent firm. Reaction ranges from extremely acid to strongly acid.

The BC horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 5. Texture is loamy fine sand to sand. Reaction ranges from extremely acid to strongly acid.

The C horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 1 to 4. Texture is loamy fine sand to coarse sand. Reaction ranges from very strongly acid to slightly acid.

Nehasne Series

The Nehasne series consists of moderately deep, well drained soils on till plains where the underlying bedrock influences topography. These soils formed in glacial till deposits. Slopes range from 0 to 15 percent.

Nehasne soils are in a drainage sequence with somewhat poorly drained Ogdensburg soils.

They are closely associated with Grenville, Gouverneur, Hannawa, Matoon, and Summerville soils. Grenville soils are deeper to bedrock than Nehasne soils. They are deeper to bedrock than Gouverneur, Hannawa, and Summerville soils. Nehasne soils are coarser textured than Matoon soils.

Typical pedon of Nehasne sandy loam, 3 to 8 percent slopes, in the town of Canton, 1,500 feet due north of point on New York Route 68, 6,000 feet west-northwest of Langdon Corners:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) sandy loam; pale brown (10YR 6/3) dry; weak fine granular structure; very friable; many very fine and fine, and common medium roots; 10 percent rock fragments (8 percent gravel, 2 percent channers); slightly acid; abrupt smooth boundary.

Bw1—7 to 18 inches; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; weak fine and medium subangular blocky parting to weak medium granular structure; coarse vesicular and tubular pores; common worm and old root channels filled with Ap material; 20 percent rock fragments (15 percent gravel, 5 percent cobbles greater than 3 inches); neutral; clear wavy boundary.

Bw2—18 to 23 inches; brown (10YR 4/3) gravelly fine sandy loam; weak fine and medium subangular blocky structure; very friable; few very fine, fine, and medium roots; many fine medium and coarse vesicular and tubular pores; common mottles of reddish brown (5YR 4/4) fine sandy loam, 1 to 3 inches in diameter; 30 percent rock fragments (20 percent gravel, 10 percent cobbles greater than 3 inches); neutral; clear wavy boundary.

BC—23 to 25 inches; dark brown (10YR 3/3) gravelly fine sandy loam; massive; very friable; few very fine and fine roots; few fine, medium, and coarse vesicular and tubular pores; 30 percent rock fragments (20 percent gravel, 10 percent cobbles greater than 3 inches); neutral; abrupt irregular boundary.

R—25 inches; marble bedrock, tilted and folded.

Thickness of the solum and depth to bedrock range from 20 to 40 inches. Rock fragments, mostly gravel and cobbles, range from 10 to 15 percent in the A horizon, 10 to 25 percent in the Bw horizon, and 20 to 45 percent in the BC horizon and, where it occurs, the C horizon.

The A horizon has hue of 10YR or 7.5YR, value of 2 or 3, and chroma of 1 or 2. Texture is fine sandy loam, sandy loam, or loam in the fine-earth fraction. Reaction is moderately acid or slightly acid.

The BW horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 to 4. Texture is loam in the fine-earth fraction, but in most pedons it is fine sandy loam. Reaction is slightly acid or neutral.

The BC horizon has hue of 10YR, value of 3 to 5, and chroma of 3. Texture is loam, fine sandy loam, or sandy loam in the fine-earth fraction. Reaction is neutral or slightly alkaline.

The C horizon, where it occurs, has hue of 10YR, value of 3 to 5, and chroma of 3. Texture is loam, fine sandy loam, or sandy loam in the fine-earth fraction. Reaction is neutral or slightly alkaline.

Nicholville Series

The Nicholville series consists of very deep, moderately well drained soils on ancient stream terraces or where silt- and sand-size particles settled in glacial lakes. These soils formed in silty lacustrine or fluvial deposits. Slopes range from 0 to 16 percent.

Nicholville soils are in a drainage sequence with well drained Salmon soils and poorly drained and somewhat poorly drained Roundabout soils. They are closely associated with Eelweir, Depeyster, Hailesboro, Wegatchie, Adams, and Croghan soils. They are coarser textured than Depeyster, Hailesboro, and Wegatchie soils but finer textured than Adams, Croghan, and Eelweir soils.

Typical pedon of Nicholville very fine sandy loam, 2 to 6 percent slopes, in the town of Gouverneur, 750 feet southeast of Gravel Road, 1/2 mile southwest of junction of Gravel and Little Bow Roads:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) very fine sandy loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bs1—8 to 14 inches; brown (7.5YR 4/4) very fine sandy loam; weak fine and medium subangular blocky structure; friable; many fine and medium roots; few medium and few fine tubular pores; strongly acid; abrupt irregular boundary.

Bs2—14 to 18 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; common fine distinct strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; common fine and medium roots; few fine and few coarse tubular pores; strongly acid; clear irregular boundary.

BC—18 to 23 inches; brown (10YR 4/3) very fine sandy loam; light yellowish brown (10YR 6/4) ped exteriors; common fine and medium distinct dark reddish brown (5YR 3/2), few fine distinct reddish brown (5YR 4/4), few fine distinct gray (10YR 5/1) and common medium distinct yellowish red (5YR 5/6) mottles; weak coarse subangular blocky structure; friable; few fine and medium roots; few coarse and common fine and medium tubular and few fine and medium vesicular pores; strongly acid; clear wavy boundary.

CB—23 to 29 inches; brown (10YR 5/3) very fine sandy loam, brown (10YR 4/3) ped exteriors; common fine distinct strong brown (7.5YR 5/6) and common fine faint grayish brown (10YR 5/2) mottles; weak medium platy structure; firm; few fine roots; common fine vesicular and few fine tubular pores; strongly acid; clear wavy boundary.

C1—29 to 39 inches; brown (10YR 5/3) very fine sandy loam, brown (10YR 4/3) ped exteriors; common fine distinct yellowish brown (10YR 5/6) mottles; weak medium platy structure; firm; strongly acid; clear wavy boundary.

C2—39 to 55 inches; dark grayish brown (10YR 4/2) loamy very fine sand; massive; friable; strongly acid; clear wavy boundary.

C3—55 to 72 inches; dark brown (10YR 4/3) very fine sandy loam; massive; friable; strongly acid.

Thickness of the solum ranges from 12 to 30 inches. Depth to bedrock is more than 60 inches. Depth to contrasting deposits is more than 30 inches. Clay content in the solum is less than 18 percent, but typically less than 12 percent. Rock fragments, mostly gravel, range, by volume, from 0 to 10 percent.

The Ap or A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3. Texture is silt loam or very fine sandy loam. Consistence is friable or very friable. In unlimed areas, reaction ranges from extremely acid to moderately acid.

Some undisturbed areas typically have an 0 horizon 1 to 5 inches thick, an E horizon 1 to 4 inches thick, and a Bh or Bhs horizon 1 to 4 inches thick, all of which plowing generally destroys.

The Bs horizon has hue of 5YR to 2.5Y and value and chroma of 4 to 8. In most areas it has distinct mottles in the lower part. The B horizon ranges from loamy very fine sand to silt loam. Consistence is very friable to firm. Reaction ranges from very strongly acid to moderately acid.

The 2C or C horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 2 to 4. Texture ranges from silt loam to very fine sand above a depth of 38 inches and is sandy loam or silt loam to very fine sand below. It is massive, or has platy structure from depositional layers. Consistence is very friable to firm. Reaction ranges from very strongly acid to slightly acid.

Ogdensburg Series

The Ogdensburg series consists of moderately deep, somewhat poorly drained soils on till plains where the underlying bedrock influences the topography. These soils formed in calcareous glacial till.

Ogdensburg soils are in a drainage sequence with moderately well drained Nehasne soils. They are closely associated with Insula, Grenville, Hannawa, Hogansburg, Malone, Matoon, and Summerville soils. Ogdensburg soils are deeper to bedrock than Insula, Hannawa, and Summerville soils but shallower to bedrock than Grenville, Hogansburg, and Malone soils. Ogdensburg soils are coarser textured than Matoon soils.

Typical pedon of Ogdensburg loam, 0 to 3 percent slopes, in the town of Oswegatchie, 900 feet northwest of point on Stone Church Road, 2,650 feet southeast of junction of New York Route 37:

Ap—0 to 9 inches; black (10YR 2/1) loam, gray (10YR 5/1) dry; weak fine and medium subangular blocky structure; friable; many fine and medium roots; common fine and medium tubular pores; 5 percent rock fragments; neutral; abrupt wavy boundary.

Bw—9 to 14 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate medium subangular blocky structure; common medium faint brown (10YR 4/3) and few fine faint dark grayish brown (10YR 4/2) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; common fine tubular pores; 5 percent rock fragments; neutral; clear wavy boundary.

Bg—14 to 21 inches; grayish brown (2.5YR 5/2) fine sandy loam; very dark grayish brown (10YR 3/2) surfaces of peds; many medium distinct yellowish brown (10YR 5/6) and many fine faint olive brown (2.5Y 4/4) mottles; weak fine angular blocky structure; friable; few fine roots; 10 percent gravel, 5 percent dolomitic sandstone pseudomorphs of gravel-size rock fragments; neutral; clear wavy boundary.

BCg—21 to 24 inches; gray (N 5/0) and grayish brown (2.5Y 5/2) very gravelly fine sandy loam; light olive brown (2.5Y 5/4, 5/6) ped surfaces; many medium distinct dark grayish brown (10YR 4/2) mottles; light olive brown (2.5Y 5/4, 5/6) ped surfaces; massive; friable; 40 percent rock fragments (30 percent gravel and channers, 10 percent flags and cobbles); slightly alkaline; slightly effervescent; abrupt smooth boundary.

R—24 inches; hard dolomitic sandstone bedrock and a thin veneer of saprolite.

Thickness of the solum and generally depth to carbonates range from 17 to 34 inches; however, some pedons do not have carbonates. Depth to bedrock ranges from 20 to 40 inches. Rock fragments range, by volume, from 2 to 15 percent in the Ap horizon, 2 to 35 percent in the Bw and Bg horizons, and 15 to 50 percent in the BC and C horizons. Rock fragments (gravel and channers) exceed 15 percent of the volume in at least one subhorizon of the solum.

The Ap horizon has hue of 10YR or 2.5Y; value is 2 or 3, 5, dry, and chroma is 1 or 2. Texture is sandy loam, fine sandy loam, silt loam, or loam. Reaction is neutral to moderately acid.

The Bw horizon has hue of 7.5YR or 2.5Y, value of 3 to 5, and chroma of 3 or 4. Texture is sandy loam or fine sandy loam. In some pedons it has thin subhorizons of silt loam. Reaction is slightly acid or neutral.

The Bg horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 or 2. Texture is sandy loam, fine sandy loam, or loam in the fine-earth fraction. In some pedons it has thin subhorizons of silt loam. Reaction is slightly acid or neutral.

The BC and C horizons are neutral or have hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 0 to 4. Texture is sandy loam, fine sandy loam, loam, or silt loam in the fine-earth fraction. Reaction is neutral to moderately alkaline. Bedrock is dolomitic sandstone, sandstone, or limestone.

Potsdam Series

The Potsdam series consists of very deep, well drained soils on glacial till plains. These soils formed in an eolian or fluvial (water-deposited) mantle overlying dense glacial till. Slopes range from 3 to 35 percent.

Potsdam soils are in a drainage sequence with moderately well drained Crary soils and somewhat poorly drained and poorly drained Adirondack soils. They are also associated with Berkshire, Lyme, Tughill, and Tunbridge soils. Unlike Berkshire, Lyme, and Tughill soils, Potsdam soils have a firm, dense substratum. Also, unlike Potsdam soils, Lyme and Tughill soils have mottles in the upper part of the solum. Tunbridge soils are 20 to 40 inches deep to bedrock, and Potsdam soils are deeper.

Typical pedon of Potsdam very fine sandy loam, in an area of Potsdam-Tunbridge complex, 15 to 35 percent slopes, very bouldery, in the town of Piercefield, 100 feet south of New York Route 3 and 1 mile west of Conifer Road:

Oi—0 to 3 inches; black (10YR 2/1) slightly decomposed forest litter.

Oa—3 to 6 inches; black (5YR 2.5/1) highly decomposed leaves and twigs.

E—6 to 9 inches; pinkish gray (5YR 6/2) very fine sandy loam; weak fine subangular blocky structure; very friable; few coarse and many medium roots; many fine pores; few coarse and many medium roots; 2 percent rock fragments; extremely acid; abrupt irregular boundary.

Bh—9 to 12 inches; dark reddish brown (5YR 2/2) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine pores; 3 percent rock fragments; very strongly acid; gradual irregular boundary.

Bs—12 to 22 inches; reddish brown (5YR 4/4) and strong brown (7.5YR 5/6) silt loam; few fine distinct dark reddish brown (5YR 3/4) root stains; moderate medium subangular blocky structure; friable; common fine pores; few fine and medium roots; 3 percent rock fragments; very strongly acid; abrupt wavy boundary.

2BC—22 to 34 inches; light olive brown (2.5Y 5/4) gravelly sandy loam; very weak medium subangular blocky structure; friable; common fine pores; 20 percent rock fragments (10 percent fine gravel and 10 percent stones); very strongly acid; clear smooth boundary.

2Cd—34 to 72 inches; olive brown (2.5Y 5/4) gravelly sandy loam; massive; firm; few fine pores; 25 percent rock fragments (15 percent gravel and cobbles, 10 percent stones); strongly acid.

Thickness of the solum ranges from 20 to 40 inches. Depth to bedrock is more than 60 inches. Thickness of the silty mantle ranges from 16 to 40 inches over a substratum of dense glacial till. Rock fragments, including gravel, cobbles, and stones, range, by volume, from 0 to 15 percent in the layers above the substratum and from 10 to 35 percent in the substratum. In some layers stones make up as much as 15 percent of the volume.

The O horizon has hue of 10YR to 5YR, value of 2 or 3, and chroma of 1 or 2. Some undisturbed pedons have an A horizon that has hue of 10YR to 5YR, value of 2 or 3, and chroma of 1 or 2.

Some cleared areas have an Ap horizon that has hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3. Texture is very fine sandy loam, loam, or silt loam. Structure is weak or moderate, fine or medium granular. Reaction ranges from extremely acid to moderately acid.

The E horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 1 or 2. Texture is fine sandy loam, very fine sandy loam, loam, or silt loam. Structure is thin or medium platy, subangular blocky, or fine granular. Reaction ranges from extremely acid to moderately acid.

The Bh horizon has hue of 5YR or 7.5YR, value of 2 or 3, and chroma of 1 or 2. Texture is very fine sandy loam, loam, or silt loam. Structure is weak or moderate, fine or medium subangular blocky. Reaction ranges from very strongly acid to moderately acid.

Some pedons have a Bhs horizon that has chroma and value of 3.

The Bs horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. Texture is very fine sandy loam, loam, or silt loam, and some pedons have subhorizons of loamy very fine sand.

The Bs horizon has very weak, weak, or moderate subangular blocky or granular structure. Reaction ranges from very strongly acid to moderately acid.

Some pedons have a BC or C horizon below the Bs horizon.

The 2BC horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture is similar to that of the 2Cd horizon. Reaction ranges from very strongly acid to neutral.

Some pedons have a 2E horizon above the 2Cd horizon.

The 2Cd horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 2 to 4. Texture is sandy loam or fine sandy loam in the fine-earth fraction. Structure is platy, or the horizon is massive. In some pedons it is prismatic in the upper part of the substratum. In some pedons it has layers of loamy sand or gravelly loamy sand below a depth of 40 inches. Reaction ranges from strongly acid to slightly alkaline.

Pyrities Series

The Pyrities series consists of very deep, well drained soils on uplands. These soils formed in loamy, calcareous glacial till. Slopes range from 3 to 35 percent.

Pyrities soils are in a drainage sequence with moderately well drained Kalurah soils. They are also associated with Malone, Nehasne, and Waddington soils. Unlike Pyrities soils, Malone soils have low chroma mottles above a depth of 20 inches. Nehasne soils are 20 to 40 inches deep to bedrock, but Pyrities soils are deeper. Pyrities soils have less sand and gravel in the substratum than Waddington soils.

Typical pedon of Pyrities fine sandy loam, 3 to 8 percent slopes, in the town of Canton, near the hamlet of Langdon Corners, 3.2 miles east of New York Route 11, 200 feet south of New York Route 68:

Ap—0 to 8 inches; dark brown (7.5YR 4/2) fine sandy loam, pinkish gray (7.5YR 6/2) dry; weak fine and medium subangular blocky structure; friable; common fine and medium roots; 10 percent rock fragments (gravel); neutral; abrupt wavy boundary.

Bw1—8 to 14 inches; brown (7.5YR 4/4) fine sandy loam; weak fine and medium subangular blocky structure; friable; common fine and very fine roots; common fine and very fine tubular and vesicular pores; 10 percent rock fragments (gravel); neutral; gradual wavy boundary.

Bw2—14 to 23 inches; brown (7.5YR 4/4) fine sandy loam; weak fine, medium and coarse subangular blocky structure; friable; common fine and very fine roots; many very fine and common fine vesicular and tubular pores; 10 percent rock fragments (gravel); neutral; gradual wavy boundary.

Bw3—23 to 30 inches; brown (7.5YR 5/4) fine sandy loam; weak medium and coarse subangular blocky structure parting to weak fine subangular blocky; very friable; few very fine and fine roots; many very fine and fine pores; common medium vesicular and tubular pores; 10 percent rock fragments (gravel); slightly alkaline; gradual wavy boundary.

BC—30 to 40 inches; brown (7.5YR 5/4) gravelly fine sandy loam; moderate medium platy structure parting to weak fine subangular blocky; friable; few fine roots; common fine pores; 20 percent gravel; slightly alkaline; gradual wavy boundary.

C1—40 to 44 inches; brown (7.5YR 5/4) gravelly fine sandy loam; massive parting to medium plates along depositional planes; firm; common very fine and fine vesicular and tubular pores; 20 percent rock fragments (gravel); moderately alkaline; gradual wavy boundary.

C2—44 to 72 inches; brown (7.5YR 5/2) gravelly fine sandy loam; massive parting to medium plates along depositional planes; firm; 30 percent rock fragments (gravel); slightly effervescent; moderately alkaline.

Thickness of the solum ranges from 25 to 50 inches. Bedrock is deeper than 60 inches. Depth to free carbonates ranges from 40 to 80 inches. Rock fragments range, by volume, from 5 to 15 percent in the A horizon, 5 to 35 percent in the B horizon, and 5 to 50 percent in the C horizon.

The A horizon has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 1 to 3. Texture is silt loam or loam, but in most pedons it is fine sandy loam. Reaction ranges from moderately acid to neutral.

The Bw horizon has hue of 7.5YR or 10YR, value 3 to 5, and chroma of 3 to 6. Texture is sandy loam or loam, but in most pedons it is fine sandy loam. Reaction ranges from slightly acid to slightly alkaline.

The BC horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 3 to 6. Texture is fine sandy loam, sandy loam, or loam. Reaction ranges from slightly acid to slightly alkaline.

The C horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture is fine sandy loam, sandy loam, or loam. In some pedons the horizon has thin layers of loamy sand. Reaction ranges from slightly acid to moderately alkaline.

Quetico Series

The Quetico series consists of very shallow, somewhat excessively drained soils that formed in loamy glacial drift. These soils are on uplands that have bedrock-controlled relief. Slopes range from 2 to 8 percent.

Quetico soils are associated with Adjidaumo, Insula, Kalurah, Muskellunge, and Pyrities soils. They have less clay and are shallower to bedrock than Adjidaumo and Muskellunge soils. They are also shallower to bedrock than Insula, Kalurah, and Pyrities soils.

Typical pedon of Quetico loam, in an area of Quetico-Rock outcrop-Insula complex, 0 to 8 percent slopes, in the town of Hammond, 1,400 feet west of County Road 134 on New Road, 50 feet north of New Road:

Oe—0 to 1 inch; black moderately decomposed organic matter (mucky peat).

A—1 to 3 inches; brown (7.5YR 4/2) loam; weak fine granular structure; very friable; many fine and medium, few coarse roots; 3 percent rock fragments; strongly acid; abrupt wavy boundary.

Bhs—3 to 5 inches; dark reddish brown (5YR 3/3) loam; weak fine granular structure; friable; many fine and medium roots; few coarse roots; 3 percent rock fragments; strongly acid; clear wavy boundary.

Bw—5 to 8 inches; reddish brown (5YR 4/4) loam; weak fine and medium subangular blocky structure; friable; many fine and medium roots, few coarse roots; 3 percent rock fragments; strongly acid.

R—8 inches; sandstone bedrock.

The Bw horizon has lithochromic colors.

Thickness of the solum and depth to bedrock range from 4 to 10 inches. Texture of the solum is loam, silt loam, sandy loam, fine sandy loam, or their gravelly and cobbly analogs. Rock fragments make up from 3 to 35 percent of the volume throughout. Stones and boulders on or below the surface range from 0 to 3 percent. Reaction is very strongly acid to strongly acid.

Some pedons have an A horizon 1 to 3 inches thick. It has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 2.

The Bs or Bhs horizon has hue of 5YR or 7.5YR and value and chroma of 3 or 4. The Bhs and Bs horizons typically are about 4 percent but are at least 2 percent.

The Bw horizon, where it occurs, has hue of 10YR to 5YR, value of 3 to 5, and chroma of 3 to 6.

Raquette Series

The Raquette series consists of very deep, somewhat excessively drained soils formed in water-sorted materials on uplands. Slopes range from 0 to 35 percent.

Raquette soils are associated with Grenville, Nehasne, Pyrities, and Waddington soils. They are coarser textured than Grenville and Pyrities soils. They are coarser textured and deeper to bedrock than Nahasne soils. They have fewer rock fragments in the solum than Waddington soils.

Typical pedon of Raquette sandy loam, 8 to 15 percent slopes, in the town of Hammond, 100 feet southeast of junction of Sand Street and Watson Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) sandy loam; weak very fine, fine, and medium subangular blocky structure; very friable; many fine, few medium and coarse roots; 3 percent rock fragments; neutral; abrupt smooth boundary.

Bw—9 to 19 inches; brown (7.5YR 4/4) sandy loam; weak fine and medium subangular blocky structure; very friable; many fine and few medium roots; many fine vesicular pores; 5 percent rock fragments; neutral; abrupt wavy boundary.

2BC—19 to 25 inches; very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) gravelly loamy sand; weak fine and medium subangular blocky structure; friable; many fine roots; common fine vesicular pores and few fine, medium, and coarse tubular pores; 30 percent rock fragments; slightly alkaline; clear irregular boundary.

2C—25 to 72 inches; brown (10YR 4/3) very gravelly loamy coarse sand; single grain; loose; many fine roots; 50 percent rock fragments; strongly effervescent; moderately alkaline.

Thickness of the solum ranges from 20 to 40 inches. Depth to free carbonates ranges from 15 to 36 inches. Rock fragments, dominantly limestone gravel, range, by volume, from 3 to 15 percent in the A horizon, 3 to 35 percent in the solum, and 20 to 60 percent in the substratum.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3. Texture is fine sandy loam, loamy fine sand, or sandy loam. Reaction ranges from moderately acid to neutral.

The Bw horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 8. Texture is loamy sand, loamy fine sand, fine sandy loam, or sandy loam in the fine-earth fraction. It has weak or very weak, granular or subangular blocky structure. Reaction ranges from slightly acid to slightly alkaline.

The BC horizon has hue of 5YR to 10YR, value of 3 to 5, chroma of 2 to 8. Texture is fine sandy loam or sandy loam in the fine-earth fraction. Reaction ranges from neutral to slightly alkaline.

The C horizon has hue of 5YR to 10YR, value of 3 to 7, and chroma of 2 to 4. In some pedons texture is loamy sand, loamy coarse sand, loamy fine sand, or sand in the fine-earth fraction, and some pedons have thin strata of sandy loam and fine sandy loam. Texture is neutral to moderately alkaline.

Redwater Series

The Redwater series consists of deep, somewhat poorly drained soils that formed in recent alluvium along streams with bedrock-controlled stream gradients. Slopes range from 0 to 3 percent.

Redwater soils are associated with Adams, Adjidaumo, and Croghan soils. Redwater soils are not as sandy in the solum as Adams and Croghan soils. Redwater soils are coarser textured in the subsoil than Adjidaumo soils.

Typical pedon of Redwater fine sandy loam, in the town of Louisville, 30 feet south of the Grasse River, 1,200 feet east of Town Line Road Bridge:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; friable; many very fine, fine, and medium roots; slightly acid; abrupt smooth boundary.

Bw1—7 to 19 inches; dark brown (10YR 3/3) fine sandy loam; many coarse faint very dark grayish brown (10YR 3/2) mottles and common fine faint dark yellowish brown (10YR 4/6) mottles; weak fine and medium subangular blocky structure; friable; many very fine, fine, and medium and few coarse roots; many fine vesicular pores and few fine medium and coarse tubular pores; slightly acid; clear smooth boundary.

Bw2—19 to 30 inches; dark brown (10YR 3/3) fine sandy loam; many coarse faint very dark grayish brown (10YR 3/2) and common medium faint dark yellowish brown (10YR 4/4) mottles; very weak coarse prismatic structure parting to moderate coarse subangular blocky; friable; common fine and medium and few coarse roots; many very fine, common fine and medium, and few coarse tubular pores; neutral; clear wavy boundary.

BC—30 to 38 inches; very dark grayish brown (10YR 4/2) and dark brown (10YR 4/3) fine sandy loam; common medium faint dark yellowish brown (10YR 4/4), common fine faint grayish brown (10YR 5/2), and common fine prominent strong brown (7.5YR 4/6) mottles; very weak coarse prismatic structure parting to weak medium and coarse subangular blocky; friable; common fine and few medium and coarse roots; many fine and few medium tubular pores; slightly acid; clear wavy boundary.

C—38 to 50 inches; grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) fine sandy loam; many coarse distinct yellowish brown (10YR 5/4) mottles; massive; friable; common fine and few medium and coarse roots; many fine tubular pores; few thin lenses of sand less than $^1/_2$ inches thick; neutral; abrupt smooth boundary.

R—50 inches; hard limestone bedrock.

Thickness of the solum ranges from 20 to 40 inches. Depth to bedrock ranges from 40 to 60 inches. Rock fragments, mostly gravel-size limestone, range, by volume, from 0 to 15 percent in the A and B horizons and from 0 to 50 percent in the C horizon.

The A horizon has hue of 10YR, value 3 or 4, and chroma of 2 or 3. Texture is silt loam, fine sandy loam, sandy loam, or loam in the fine-earth fraction. Reaction is strongly acid to slightly acid.

The Bw horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is loam in the fine-earth fraction, but in most pedons it is fine sandy loam. In some pedons it has thin subhorizons of silt loam, loamy sand, or loamy fine sand. Reaction is slightly acid or neutral.

The BC horizon has hue of 7.5YR or 10YR, value of 3 or 4, chroma of 2 to 4. Texture is fine sandy loam or loam in the fine-earth fraction. Reaction is slightly acid or neutral.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 2 to 4. Texture is fine sandy loam, loamy sand, loamy fine sand, fine sand, or sand in the fine-earth fraction. In most pedons it is stratified. Reaction is slightly acid or neutral.

Ricker Series

The Ricker series consists of very shallow and shallow, well drained to excessively drained soils formed in organic material 2 to 26 inches thick overlying bedrock. These soils are on tops and side slopes of hills and mountains. Slopes range from 3 to 60 percent.

Ricker soils are associated with Lyman, Potsdam, and Tunbridge soils. Unlike Ricker soils, Lyman, Potsdam, and Tunbridge soils have a thick mineral horizon above bedrock and Potsdam soils are also very deep to bedrock.

Typical pedon of Ricker mucky peat, in an area of Tunbridge-Borosaprists-Ricker complex, rolling, very rocky, in the town of Pitcairn, 900 feet east of roadside pile of spoil, at Jayville:

Oi—0 to 1 inch; dark yellowish brown (10YR 4/4) broken face fibric material (peat), dark brown (10YR 3/3) rubbed; fibric material; about 85 percent fibers, 75 percent rubbed; massive; loose; many roots, mainly tree masts; extremely acid; abrupt smooth boundary.

Oe—1 to 3 inches; dark yellowish brown (10YR 3/4) broken face hemic material (mucky peat), very dark brown rubbed; about 50 percent fibers, 35 percent rubbed; massive; friable; common fine and medium roots; extremely acid; abrupt smooth boundary.

C—3 to 4 inches; very dark grayish brown (10YR 3/2) loamy sand; massive, single grain; very friable; very strongly acid.

R—4 inches; granitic gneiss.

Depth to bedrock ranges from 2 to 26 inches. In most pedons very thin mineral horizons interface with bedrock. Rock fragments range to 50 percent in the mineral horizons. The organic horizons are extremely acid and the mineral horizon is extremely acid or very strongly acid.

The Oi horizon has hue of 2.5YR to 10YR, value of 2 or 4, and chroma of 1 to 4. It consists of slightly decomposed leaves, needles, twigs, and moss.

The Oe horizon is neutral or has hue of 2.5YR to 10YR, value of 2 or 3, and chroma of 1 to 6, or it is neutral. It consists of moderately decomposed organic matter.

The Oa horizon, where it occurs, has hue of 2.5YR to 10YR, value of 2 to 6, and chroma of 0 to 2. It consists of highly decomposed organic matter.

The E, Bh, Bhs, or C horizon is mineral, and has hue of 5YR to 5B, value of 2 to 7, and chroma of 1 to 3. Texture is coarse sand, sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, very fine sandy loam, loam, or silt loam.

Roundabout Series

The Roundabout series consists of very deep, poorly drained and somewhat poorly drained soils formed in glaciolacustrine and glaciomarine sediments. These soils are on old lake or marine plains or on valley floors on uplands. Slopes range from 0 to 6 percent.

Roundabout soils are in a drainage sequence with well drained Salmon soils and moderately well drained Nicholville soils. They also are associated with Hailesboro, Naumburg, and Wegatchie soils. They are coarser textured in the subsoil than Hailesboro and Wegatchie soils. They are not as sandy in the subsoil as Naumburg soils.

Typical pedon of Roundabout silt loam, 0 to 2 percent slopes, in the town of Edwards, 3,200 feet east of junction of Sullivan Road and Berg Road on Sullivan Road, 125 feet north of road, in meadow:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many fine roots; slightly acid; clear smooth boundary.

Bw1—10 to 17 inches; brown (10YR 5/3) silt loam; many medium faint grayish brown (10YR 5/2) and yellowish brown (10YR 5/4) and many medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; common fine roots; many fine tubular and vesicular, few coarse pores; slightly acid; clear wavy boundary.

Bg—17 to 23 inches; grayish brown (10YR 5/2) silt loam; many coarse faint brown (10YR 5/3) and many medium distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) mottles; weak coarse prismatic structure parting to weak thick platy; friable; few fine roots; common fine tubular, few fine vesicular, and few coarse pores; slightly acid; clear wavy boundary.

BCg—23 to 31 inches; grayish brown (10YR 5/2) silt loam; common coarse faint brown (10YR 5/3) and light brownish gray (10YR 6/2), common coarse distinct yellowish brown (10YR 5/4), and common medium distinct brownish yellow (10YR 6/6) mottles; weak coarse prismatic structure parting to weak thick platy; friable; few fine roots; few fine vesicular, few fine tubular, and few coarse pores; slightly acid; clear wavy boundary.

C1—31 to 55 inches; light brownish gray (10YR 6/2) silt loam; common medium distinct yellowish brown (10YR 5/8) and brownish yellow (10YR 6/6), common medium distinct brown (10YR 5/3), and common grayish brown (10YR 5/2) mottles; weak thick platy structure; friable; few fine tubular and few coarse vesicular and tubular pores; neutral; clear wavy boundary.

C2—55 to 72 inches; grayish brown (10YR 6/2) silt loam; weak thick platy structure; firm; few fine vesicular and tubular pores; moderately alkaline; strongly effervescent (calcareous).

Thickness of the solum ranges from 16 to 35 inches. Depth to bedrock is more than 60 inches. Rock fragments, mostly pebbles, make up less than 5 percent of the volume. Reaction ranges from very strongly acid to slightly acid in the solum and from moderately acid to neutral in the C horizon. In some pedons reaction ranges to moderately alkaline below a depth of 40 inches.

The Oa horizon, where it occurs, has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 or 2. Structure is weak or moderate, very fine to medium, granular.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. Structure is weak to strong, fine or medium granular.

The A horizon, where it occurs, has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 1 or 2. Structure is weak or moderate very fine to medium granular or subangular blocky.

The E horizon, where it occurs, has hue of 5Y, value of 5 to 7, and chroma of 1 or 2. Structure is weak or moderate, thin or medium platy, or weak fine granular. Texture in the A and E horizons is silt loam or very fine sandy loam. Consistence is very friable or friable.

The B horizon has hue of 10YR to 5Y, value of 3 to 6, and chroma of 2 to 4. It has faint to prominent mottling. Texture is silt loam or very fine sandy loam. In most pedons structure is weak or moderate, thin to thick platy, moderate very fine to medium subangular blocky, or weak fine granular, but in some pedons it is weak coarse or very coarse prismatic. Consistence is friable or firm.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. Texture is silt loam or very fine sandy loam, and some pedons have thin strata ranging from silt to fine sand. In some pedons texture is fine sand and gravelly sand below a depth of 40 inches. It has faint to prominent mottles. Structure is weak or moderate, thin to thick platy, weak medium to very coarse prismatic, or the horizon is massive. Consistence is loose to very firm.

Runeberg Series

The Runeberg series consists of very deep, poorly drained and very poorly drained soils formed in loamy glacial till. These soils are on glacial moraines and in basins on uplands. Slopes range from 0 to 2 percent.

Runeberg soils are in a drainage sequence with well drained Grenville soils, moderately well drained Hogansburg soils, and somewhat poorly drained Malone soils. They are also associated with Adjidaumo, Cook, Dorval, and Deford soils. Runeberg soils are coarser textured than Adjidaumo soils. They are finer textured in the solum than Cook and Deford soils. Unlike Runeberg soils, which are mineral, Dorval soils are organic.

Typical pedon of Runeberg loam, in the town of Pierrepont, 0.7 mile southwest on Noyes Road from intersection with Parmenter Road, to powerline, then 170 feet southeast along powerline path, then 25 feet north of path, in opening in brush:

Ap—0 to 10 inches; very dark brown (10YR 2/2) loam, grayish brown (10YR 5/2) dry; weak medium and fine granular structure; very friable; common fine and medium roots; 5 percent rock fragments (gravels and cobbles); slightly acid; clear wavy boundary.

Bg1—10 to 15 inches; grayish brown (10YR 5/2) sandy loam; common medium faint light brownish gray (10YR 6/2), few fine distinct yellowish brown (10YR 5/8), and common medium faint yellowish brown (10YR 5/4) mottles; weak fine subangular blocky structure; friable; few fine roots; 12 percent rock fragments (gravels and cobbles); neutral; clear wavy boundary.

Bg2—15 to 24 inches; grayish brown (10YR 5/2) sandy loam; common medium distinct dark yellowish brown (10YR 4/4) and common medium faint brown (10YR 5/3) mottles; some light brownish gray (10YR 6/2) plate faces; weak thick platy structure parting to weak medium subangular blocky; friable; 12 percent rock fragments (gravels and cobbles); neutral; clear wavy boundary;

C—24 to 72 inches; grayish brown (10YR 5/2) sandy loam; common medium distinct gray (10YR 6/1), grayish brown (10YR 5/2), and yellowish brown (10YR 5/4), and common fine prominent strong brown (7.5YR 5/6) mottles; gravelly sandy loam; massive; friable; 12 percent gravel and cobbles; slightly alkaline; slightly effervescent.

Thickness of solum and depth to free carbonates range from 24 to 36 inches. Rock fragments of mixed lithology make up 3 to 15 percent of the volume in the solum and the C horizon. The mollic epipedon ranges from 8 to 20 inches thick. The control section averages between 8 to 18 percent clay and 50 to 70 percent sand. Some pedons have an 0 horizon less than 4 inches thick.

The A horizon has hue of 10YR to 5Y, value of 2 or 3, and chroma of 1 or 2, or it is neutral and value is 2 or 3. In some pedons it has mottles. Texture is sandy loam, fine sandy loam, or loam. Reaction is slightly acid or neutral.

The B horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 1 or 2. It has faint to prominent mottles throughout. Texture is sandy loam or loam. Reaction is slightly acid or neutral.

The C horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 to 3. It has faint to prominent mottles. Reaction is slightly alkaline or moderately alkaline.

Salmon Series

The Salmon series consists of very deep, well drained soils formed in wind- or water-deposited silt and very fine sand. These soils are on uplands, but mostly on lake plains. Slopes range from 0 to 15 percent.

Salmon soils are in a drainage sequence with moderately well drained Nicholville soils and poorly drained and somewhat poorly drained Roundabout soils. They are also associated with Adams, Colton, Crary, and Potsdam soils. They are not as coarse textured as Adams and Colton soils. Unlike Salmon soils, Crary and Potsdam soils have a firm, till substratum within a depth of 40 inches.

Typical pedon of Salmon very fine sandy loam, rolling, in the town of Pierrepont, 3,520 feet south-southeast of junction of O'Brien Road and Beech Plains Road, and 1,600 feet west of junction of Selleck Road and Russell-Pierrepont Road (County Route 40), at edge of large gravel pit:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) very fine sandy loam; weak fine and medium subangular blocky structure; friable; many fine and few medium roots; strongly acid; abrupt wavy boundary.

E—6 to 13 inches; pinkish gray (7.5YR 7/2) very fine sandy loam; single grain; friable; few fine and medium roots; strongly acid; abrupt wavy boundary.

Bs1—13 to 19 inches; brown (7.5YR 4/4) very fine sandy loam, strong brown (7.5YR 4/6) dry; weak fine and medium subangular blocky structure; friable; few fine and medium roots; few fine and medium tubular pores; strongly acid; clear wavy boundary.

Bs2—19 to 25 inches; brown (10YR 4/3) silt loam, yellowish brown (10YR 5/4) dry; weak fine and medium subangular blocky structure; friable; few fine roots; strongly acid; clear wavy boundary.

BC—25 to 30 inches; brown (10YR 4/3) silt loam, yellowish brown (10YR 5/4) dry; weak thin platy structure; friable; few fine roots; strongly acid; clear wavy boundary.

C—30 to 72 inches; yellowish brown (10YR 5/4) silt loam, pale brown (10YR 6/3) dry; weak thin platy structure; friable; moderately acid.

Thickness of the solum ranges from 20 to 30 inches. Depth to bedrock is greater than 60 inches. Depth to contrasting coarse textured material is more than 40 inches. Rock fragments, mostly gravel, range, by volume, from 0 to 10 percent throughout.

The Ap or A horizon is neutral or has hue of 10YR or 7.5YR, value of 2 to 4, and chroma of 0 to 4. Texture is silt loam or very fine sandy loam. In unlimed areas reaction ranges from extremely acid to moderately acid. Most pedons have an E horizon 1 to 7 inches thick. Some undisturbed pedons have an 0 horizon 1 to 4 inches thick and a Bh or Bhs horizon 1 to 4 inches thick.

The upper part of the Bs horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8, and the lower part has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 3 to 6. Texture is silt loam or very fine sandy loam. Consistence is friable or very friable. Reaction ranges from extremely acid to moderately acid.

Most pedons have a BC horizon that has hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 2 to 4.

The C or 2C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 4. Texture is very fine sandy loam or silt loam above a depth of 36 inches and sandy loam to silt loam below. The horizons are massive or have platy structure from depositional layers. Reaction ranges from strongly acid to slightly acid.

Searsport Series

The Searsport series consists of very deep, very poorly drained soils formed in thick sandy deposits in pockets and depressions on outwash plains, deltas, and terraces. Slopes range from 0 to 3 percent.

Searsport soils are in a drainage sequence with somewhat excessively drained and excessively drained Adams soils, moderately well drained Croghan soils, and poorly drained and somewhat poorly drained Naumburg soils. They are also associated with Dawson, Dorval, Grenville, Pyrities, Potsdam, and Tughill soils. Searsport soils have a mineral solum at a depth above 16 inches, but Dawson and Dorval soils have organic layers at a depth of more than 16 inches. Searsport soils have fewer rock fragments than Grenville, Pyrities, Potsdam, or Tughill soils.

Typical pedon of Searsport muck, in the town of Colton, 3.25 miles south, 78 degrees west from Cold Pond, along New York Route 56, about 4 miles south of South Colton:

Oa—0 to 6 inches; black sapric material (muck); common fine roots; strongly acid; abrupt smooth boundary.

A—6 to 10 inches; black (10YR 2/1) mucky loamy fine sand; weak fine granular structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary.

Eg1—10 to 12 inches; dark gray (5Y 4/1) loamy fine sand; very weak fine granular structure parting to single grain; very friable; few fine and medium roots; strongly acid; clear wavy boundary.

Eg2—12 to 22 inches; gray (5Y 5/1) loamy sand; single grain; loose; few fine roots; very strongly acid; clear wavy boundary.

Cg1—22 to 34 inches; grayish brown (2.5Y 5/2) loamy fine sand; many medium distinct dark yellowish brown mottles; single grain; loose; few fine roots; 5 percent rock fragments, mostly gravel; very strongly acid; clear wavy boundary.

Cg2—34 to 72 inches; grayish brown (2.5Y 5/2) stratified layers of fine sand, sand, and gravelly sand; common medium distinct dark yellowish brown and olive brown mottles in the upper part, decreasing in size and number with depth; single grain; loose; 10 percent rock fragments, mostly gravel; very strongly acid.

Rock fragments, mostly gravel, range, by volume, from 0 to 15 percent in the particle-size control section and from 0 to 45 percent below. Reaction ranges from very strongly acid to slightly acid throughout.

The Oa horizon is neutral or has hue of 5YR to 5Y, value of 2 or 3, and chroma of 0 to 2. Some pedons have an Oe horizon.

The A horizon has hue of 5YR to 5Y, value of 2 to 4, and chroma of 1 or 2. Texture is loamy sand, sand, sandy loam, fine sandy loam, or loamy fine sand or their mucky analog. It has weak or moderate, fine or medium granular structure or is single grain.

The Eg horizon, where it occurs, has hue of 10YR to 5Y, value of 4 to 7, and chroma of 0 or 1. Texture is fine sandy loam to sand.

The C horizon is neutral or has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 4. It has chroma of 3 or 4 generally below a depth of 30 inches. In most pedons it has mottling that is faint to prominent, few to many, and fine to coarse. In most pedons texture is loamy fine sand, loamy sand, fine sand, sand, or coarse sand in the fine-earth fraction, but some pedons are stratified.

Stockholm Series

The Stockholm series consists of very deep, poorly drained soils formed in sandy deposits that overlie clayey marine sediments. These soils are nearly level on marine plains. Slopes range from 0 to 3 percent.

Stockholm soils are in a drainage sequence with moderately well drained Flackville soils. They are also associated with Adjidaumo, Muskellunge, Naumburg, and Swanton soils. Unlike clayey Adjidaumo and Muskellunge soils, Stockholm soils have a sandy solum. Stockholm soils are finer textured in the substratum than Naumburg soils. Stockholm soils are coarser textured in the solum than Swanton soils.

Typical pedon of Stockholm loamy fine sand, in the town of Canton, 130 feet southeast from a point on County Road 186, 0.86 mile southwest of junction of New York Route 68 and County Road 186, in an abandoned field:

Ap—0 to 10 inches; dark brown (7.5YR 3/2) loamy fine sand, brown (7.5YR 5/2) dry; few medium distinct strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; common fine and medium roots; common medium tubular pores; strongly acid; abrupt smooth boundary.

Bh—10 to 12 inches; dark reddish brown (5YR 3/3) loamy fine sand; common fine distinct strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; common fine and medium roots; common fine and medium tubular pores; few fine nodules; moderately acid; clear wavy boundary.

Bs—12 to 20 inches; 60 percent friable yellowish brown (10YR 5/4) fine sand, 40 percent firm dark reddish brown (5YR 3/4) fine sand; common medium and coarse distinct strong brown (7.5YR 4/6, 5/6) mottles; weak fine and medium subangular blocky structure; some cemented and massive parts; many fine roots; few fine tubular pores and common fine vesicular pores; moderately acid; abrupt wavy boundary.

BCg—20 to 23 inches; light brownish gray (10YR 6/2) fine sand; common medium and coarse distinct strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; common fine roots; few fine tubular and vesicular pores; moderately acid; abrupt broken boundary.

2BCg—23 to 30 inches; gray (10YR 5/1) clay; many coarse distinct strong brown (7.5YR 5/6) and common medium distinct yellowish brown (10YR 5/4) mottles; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common fine and medium roots along prism faces; common fine and medium vesicular pores; grayish brown (10YR 5/2) fine sandy loam coatings on faces of prisms; slightly acid; clear irregular boundary.

2Cg—30 to 58 inches; gray (10YR 5/1) clay; many coarse distinct dark brown (10YR 4/3) and few fine distinct dark yellowish brown (10YR 4/6) mottles; moderate coarse prismatic structure; firm; few fine roots on prism faces; few fine vesicular pores; neutral; clear wavy boundary.

2C—58 to 72 inches; dark brown (10YR 4/3) clay loam; common coarse faint gray (10YR 5/1) and common fine distinct yellowish brown (10YR 5/6) mottles; moderate coarse prismatic structure; firm; few fine roots on prism faces; few fine vesicular pores; dark gray (10YR 4/1) prism faces; 3 percent rock fragments; neutral.

Thickness of the solum and depth to the underlying, fine textured material ranges from 17 to 39 inches. Depth to bedrock is greater than 6 feet. The soils have few or no rock fragments.

The A or Ap horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is fine sandy loam, sandy loam, loamy sand, loamy fine sand, fine sand, or sand. Reaction varies with cultivation and liming practices and ranges from extremely acid to moderately acid.

The Bh horizon has hue of 5YR or 7.5YR, value of

2 or 3, and chroma of 1 to 3. Texture is loamy sand, loamy fine sand, fine sand, or sand. Reaction is strongly acid or moderately acid.

The Bs horizon has hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 3 to 6. Texture is loamy sand, loamy fine sand, fine sand, or sand. Reaction is strongly acid or moderately acid.

The Bg horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 1 or 2. Texture is loamy fine sand or sand in the upper part of the horizon and silty clay or clay in the lower part. Reaction is strongly acid or moderately acid in the upper part of the horizon and ranges to slightly acid in the lower part.

The 2C horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 1 to 4. Texture is silty clay loam, clay loam, silty clay, or clay. Reaction ranges from neutral to moderately alkaline.

Summerville Series

The Summerville series consists of shallow, well drained soils formed in loamy materials overlying limestone on moraines, glacial lake benches, and bedrock-controlled uplands. Slopes range from 0 to 35 percent.

Summerville soils are in a drainage sequence with poorly drained Hannawa soils. They are also associated with Adjidaumo, Gouverneur, Grenville, Hogansburg, Muskellunge, and Nehasne soils. They are shallower to bedrock than Gouverneur, Grenville, Hogansburg, and Nehasne soils. They are shallower to bedrock and have coarser textures in the solum than Adjidaumo and Muskellunge soils. Gouverneur soils are shallower to bedrock than Summerville soils. Summerville soils are shallower to bedrock than Grenville, Hogansburg, and Nehasne soils.

Typical pedon of Summerville fine sandy loam, in an area of Summerville-Gouverneur complex, 0 to 8 percent slopes, rocky, in the town of Oswegatchie, 800 feet south of junction of Eelweir Road and Black Lake Road, 100 feet north of evergreen hedge:

Ap—0 to 6 inches; strong brown (10YR 3/3) fine sandy loam; weak medium granular structure; friable; many fine and medium roots; 5 percent rock fragments; slightly acid; abrupt smooth boundary.

Bw1—6 to 10 inches; strong brown (7.5YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; common fine and few medium roots; 5 percent rock fragments; neutral; clear smooth boundary.

Bw2—10 to 12 inches; dark brown (7.5YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; many fine roots; 5 percent rock fragments; neutral; abrupt smooth boundary.

R—12 inches; dolomitic limestone bedrock.

Thickness of the solum and depth to limestone range from 10 to 20 inches. Reaction ranges from slightly acid to moderately alkaline throughout. Rock fragments larger than 3 inches in diameter range, by volume, from 0 to 15 percent in the A horizon. Gravel-size rock fragments range, by volume, from 0 to 5 percent throughout. Texture throughout is sandy loam, fine sandy loam, very fine sandy loam, silt loam, loam, or their cobbly or channery analogs.

Some pedons have an Ap horizon that is 4 to 9 inches thick. The A or Ap horizon has hue of 5YR, 7.5YR, or 10YR or is neutral; value is 2 or 3 and chroma is 0 to 3.

Some pedons have an E horizon that has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 2 or 3.

The Bw horizon has hue of 5YR, 7.5YR, or 10YR, value of 3 to 6, and chroma of 2 to 4. In some pedons a calcareous layer is immediately above bedrock. It is 1 to 3 inches thick and is likely residuum derived from limestone.

Sunapee Series

The Sunapee series consists of very deep, moderately well drained soils on till plains. These soils formed in gneiss-rich glacial till deposits. Slopes range from 3 to 15 percent.

Sunapee soils are in a drainage sequence with well drained Berkshire soils, poorly drained Lyme soils, and very poorly drained Tughill soils. They are closely associated with Colton, Crary, and Potsdam soils. Unlike Sunapee soils, Potsdam and Crary soils have a dense, brittle, very firm substratum. Sunapee soils are less gravelly than Colton soils.

Typical pedon of Sunapee fine sandy loam, in an area of Sunapee and Berkshire soils, 3 to 8 percent slopes, very bouldery, in the town of Hopkinton, 2,600 feet south-southeast of junction of Elliot Road and New York Route 11B:

Oe—0 to 1 inch; black moderately decomposed forest litter; abrupt wavy boundary.

A—1 to 4 inches; black (10YR 2/1) fine sandy loam; weak fine and medium granular structure; friable; many fine and medium roots; 5 percent rock fragments, mostly gravel; very strongly acid; diffuse wavy boundary.

Bhs—4 to 7 inches; dark reddish brown (5YR 3/2) fine sandy loam; weak fine and medium subangular blocky structure; friable; common medium roots; common gray (5YR 6/1) stripped sand grains on faces of peds; 5 percent rock fragments, mostly gravel; very strongly acid; clear wavy boundary.

Bsl—7 to 13 inches; dark reddish brown (5YR 3/3) fine sandy loam; moderate medium subangular blocky structure; friable; few medium roots; 5 percent rock fragments (3 percent stones, 2 percent gravel); strongly acid, clear wavy boundary.

Bs2—13 to 17 inches; reddish brown (5YR 4/3) fine sandy loam; few medium distinct reddish yellow (5YR 6/8) mottles; moderate fine and medium subangular blocky structure; friable; few fine and medium roots; 5 percent rock fragments, mostly gravel; strongly acid; clear wavy boundary.

BC—17 to 23 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate fine and medium angular blocky structure; friable; few medium roots; 5 percent rock fragments, mostly gravel; strongly acid; clear wavy boundary.

C—23 to 72 inches; light brownish gray (10YR 6/2) fine sandy loam; many coarse faint brown (10YR 5/3) mottles; massive; friable; 5 percent rock fragments, mostly gravel and cobbles; strongly acid.

Thickness of the solum ranges from 18 to 36 inches.

Thickness of the spodic horizon ranges from 7 to 25 inches. Rock fragments make up 5 to 15 percent of the volume in the A horizon and from 5 to 30 percent in the B and C horizons. Depth to distinct or prominent mottling ranges from 14 to 26 inches.

The A horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is fine sandy loam, loam, or their gravelly analog. Reaction ranges from extremely acid to strongly acid.

The Bs horizon is 5YR to 10YR, value of 3 to 5, and chroma of 3 to 6. In the lower part it has distinct or prominent mottles. Texture in the B horizon is fine sandy loam or sandy loam throughout. Reaction ranges from extremely acid to strongly acid throughout.

The C horizon has hue of 10YR, 2.5Y, or 5Y; value is 4 to 6 and chroma is 2 to 4. Typically, it is mottled. Texture is fine sandy loam, sandy loam, or their gravelly or cobbly analogs. Loamy sand, loamy fine sand, or their gravelly or cobbly analogs are allowed below a depth of 30 inches. Consistence is very friable or friable.

Swanton Series

The Swanton series consists of very deep, somewhat poorly drained and poorly drained soils formed in a thin mantle of loamy outwash materials over clayey marine or lacustrine sediments. These soils are somewhat poorly drained, but are dominantly poorly drained. They are on marine plains, lake plains, outwash plains, or deltas. Slopes range from 0 to 3 percent.

Swanton soils are in a drainage sequence with moderately well drained Elmwood soils and very poorly drained Munuscong soils. They are also associated with Adjidaumo, Deford, Muskellunge, and Stockholm soils. Swanton soils are coarser textured in the solum than Adjidaumo and Muskellunge soils. Unlike Deford soils, Swanton soils have a clayey substratum. Swanton soils are finer textured in the solum than Stockholm soils.

Typical pedon of Swanton fine sandy loam, in the town of Canton, 3/4 mile northwest on New York Route 68 from intersection with Pike Road, 300 feet northeast into field:

Ap—0 to 8 inches; very dark brown (10YR 2/2) fine sandy loam; weak fine and medium structure; friable; many fine and common medium roots; slightly acid; abrupt wavy boundary.

Bw1—8 to 16 inches; olive brown (2.5Y 4/4) fine sandy loam; few fine prominent brown (7.5YR 4/4) and few fine distinct light brownish gray (2.5Y 6/2) mottles; weak fine subangular blocky structure; very friable; common fine and few medium roots; few medium pores; slightly acid; clear wavy boundary.

Bw2—16 to 26 inches; grayish brown (10YR 5/2) fine sandy loam; common medium prominent strong brown (7.5YR 5/6) and reddish brown (5YR 5/4) and common medium distinct yellowish brown (10YR 5/6) and few fine faint light brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; friable; few fine and medium roots; common fine and medium pores; slightly acid; clear wavy boundary.

2C1—26 to 41 inches; brown (10YR 5/3) silty clay loam; many medium distinct light brownish gray (10YR 6/2) and common medium distinct dark yellowish brown (10YR 4/4) mottles; discontinuous moderate medium and thick platy structure and clay skins on plate faces; friable; few roots; few fine, medium, and coarse pores; slightly acid; gradual wavy boundary.

2C2—41 to 72 inches; dark grayish brown (10 YR 6/2) silty clay; few fine prominent reddish brown (5YR 4/4) mottles; moderate medium thick platy structure with thin discontinuous clay skins on plate faces; firm; neutral.

Thickness of the coarse-loamy mantle ranges from 18 to 40 inches. Depth to bedrock is more than 60 inches. Rock fragments range, by volume, from 0 to 3 percent in the coarse-loamy mantle. Reaction ranges from strongly acid to neutral in the coarse-loamy mantle and from moderately acid to moderately alkaline below.

The Ap or A horizon has hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 or 2. The E horizon, where it occurs, has hue of 10YR to 5Y, value of 5 or 6, and chroma of 2.

The A horizon is very fine sandy loam, fine sandy loam, or sandy loam. Structure is weak or moderate, very fine to medium granular.

The B horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 1 to 4. It has distinct and prominent mottles. Texture is fine sandy loam or sandy loam, but some pedons have thin subhorizons of loamy fine sand. Structure is weak, very fine or fine granular or moderate medium subangular blocky.

The E horizon, where it occurs, has hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 2 or 3. It has faint to prominent mottles. Texture of the E' horizon is fine sandy loam or sandy loam, but some pedons have a thin E' horizon of loamy fine sand. Structure is weak fine granular or weak or moderate, thin to thick platy.

The 2B' horizon, where it occurs, has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 4. It has faint to prominent mottles. The 2B' horizon is heavy silty clay loam, silty clay, or clay. Structure is weak or moderate, thin to very thick platy or weak or moderate, very fine to medium subangular or angular blocky.

The 2C horizon has hue of 10YR to 5GY, value of 4 to 6, and chroma of 0 to 4. In some pedons it has faint or distinct mottles. The 2C horizon is heavy silty clay loam, silty clay, or clay. It has weak thin to very thick platy inherited structure or is massive.

Trout River Series

The Trout River series consists of very deep, excessively drained soils formed in water-sorted material. They are on ancient beaches and terraces. Slopes range from 0 to 8 percent.

Trout River soils are in a drainage sequence with moderately well drained Fahey soils, somewhat poorly drained Coveytown soils, and very poorly drained and poorly drained Cook soils. They are also associated with Adams, Croghan, Dorval, Naumburg, Pyrities, and Searsport soils. Trout River soils have more gravel throughout the control section than associated soils have.

Typical pedon of Trout River loamy sand, 3 to 8 percent slopes, in the town of Lawrence, 12 feet west of U.S. Route 11, 0.9 mile south in the town of Lawrence, 4,750 feet north of Coteys Corners:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; 10 percent rock fragments; strongly acid; abrupt smooth boundary.

Bs1—8 to 14 inches; brown (7.5YR 4/4) very gravelly loamy sand; weak fine subangular blocky structure; very friable; few medium tubular pores; 40 percent rock fragments; strongly acid; clear wavy boundary.

Bs2—14 to 22 inches; dark yellowish brown (10YR 4/4) very gravelly loamy sand; weak medium subangular blocky structure; very friable; few medium vesicular pores; 50 percent rock fragments; strongly acid; abrupt irregular boundary.

BC—22 to 33 inches; dark yellowish brown (10YR 4/4) gravelly loamy sand; single grain; loose; 30 percent rock fragments; strongly acid; clear irregular boundary.

C—33 to 72 inches; pale brown (10YR 6/3) very gravelly loamy sand; single grain; loose; 45 percent rock fragments; moderately acid.

Thickness of the solum ranges from 24 to 36 inches. Rock fragments range, by volume, from 0 to 15 percent in the A horizon, 25 to 55 percent in the B horizon, and 35 to 70 percent in the C horizon. Some pedons have carbonates within. Depth to bedrock is greater than 60 inches.

The A horizon has hue of 7.5YR to 2.5Y, value of 2 to 5, and chroma of 1 to 3. Texture ranges from fine sandy loam to loamy sand. The horizon has granular structure or is single grain. Consistence is friable to loose. Reaction is very strongly acid or strongly acid.

The E horizon, where it occurs, ranges from 1 to 4 inches thick. It has hue of 5YR to 10YR, value of 5 to 7, and chroma of 2 or 3.

The Bh horizon, where it occurs, ranges from 1 to 3 inches thick. It has hue of 2.5YR to 10YR, value of 2 or 3, and chroma of 1 to 4. Reaction ranges from strongly acid to neutral.

The Bs horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8. Texture is gravelly or very gravelly loamy sand or sand. The horizon is single grain or it has weak granular or subangular blocky structure. It is loose or very friable. Reaction ranges from strongly acid to neutral.

The BC horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 6. Texture is gravelly or very gravelly loamy sand or sand. Reaction ranges from strongly acid to neutral.

The C horizon has hue of 7.5YR to 5Y, value of 4 or 6, and chroma of 2 or 4. They range from very cobbly sand to extremely gravelly sand. Reaction ranges from moderately acid to moderately alkaline.

Tughill Series

The Tughill series consists of very deep, very poorly drained soils formed in glacial till derived from acid siliceous rocks. These soils are in depressions on upland till plains.

Tughill soils are in a drainage sequence with well drained Berkshire soils, moderately well drained Sunapee soils, and poorly drained Lyme soils. They are also associated with Adirondack, Crary, Dawson, Potsdam, and Searsport soils. Unlike Tughill soils, Adirondack soils have a spodic horizon. Unlike Crary and Potsdam soils, Tughill soils have mottles in the upper part of the solum. Dawson soils formed in organic material. Tughill soils have less sand and more rock fragments than Searsport soils have.

Typical pedon of Tughill gravelly mucky sandy loam, in an area of Adirondack-Tughill-Lyme complex, 0 to 8 percent slopes, very bouldery, in the town of Colton, 6,200 feet south, 15 degrees west of junction of New York Route 56 and Stark Road:

Oa—0 to 4 inches; black (10YR 2/1) sapric material (muck); massive; very friable; many roots; many large stones and boulders on the surface; strongly acid; clear smooth boundary.

A—4 to 8 inches; black (5YR 2/1) gravelly mucky sandy loam; weak medium granular structure; friable; common roots; 30 percent rock fragments (stones and gravel); strongly acid; clear smooth boundary.

Bg—8 to 40 inches; grayish brown (2.5Y 5/2) very gravelly sandy loam; many medium distinct yellowish brown (10YR 5/4) mottles; massive; friable; few very fine, fine, and medium roots; 40 percent rock fragments (stones and gravel); strongly acid; gradual wavy boundary.

Cg—40 to 72 inches; gray (N 5/0) very gravelly sandy loam; few medium faint grayish brown (2.5Y 5/4) mottles in the upper part; massive; friable; 45 percent rock fragments (stones and gravel); strongly acid.

Thickness of solum ranges from 18 to 36 inches. Depth to bedrock is 40 inches, but in most pedons it is more than 60 inches. Rock fragments, mainly stones and gravel, range from 15 to 40 percent in the A horizon and from 35 to 60 percent in the B and C horizons.

The O horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is massive or has granular structure. Reaction is extremely acid to strongly acid.

The A or Ap horizon has hue of 5YR to 2.5Y, value of 2 or 3, and chroma of 1 or 2. Texture of the fine-earth fraction is fine sandy loam, loam, or silt loam or their mucky analog. Reaction is extremely acid to strongly acid.

The E horizon, where it occurs, has hue of 10YR or 2.5Y, or is neutral; value is 5 or 6 and chroma is 0 to 2. Redox concentrations are common to none. Texture of the fine-earth fraction is fine sandy loam, loam, or silt loam. Reaction is extremely acid to strongly acid.

The B horizon has hue of 5YR to 5Y, value of 4 to 6, and chroma of 0 to 2. Mottles of higher chroma than the matrix make up 15 to 40 percent of the volume. Texture is sandy loam, fine sandy loam, or loam in the fine-earth fraction. Structure is weak coarse subangular blocky structure or weak or moderate thick platy. Consistence is friable or firm. Reaction is extremely acid to moderately acid.

The C horizon is similar to the B horizon in texture and color, and in some pedons has few or common mottles. It is massive or has platy structure. Consistence is firm or very firm. Reaction is strongly acid to slightly acid.

Tunbridge Series

The Tunbridge series consists of moderately deep, well drained soils on glaciated uplands. These soils formed in loamy glacial till. Slopes range from 0 to 75 percent.

Tunbridge soils are associated with Berkshire, Lyman, Potsdam, and Sunapee soils. They are shallower to bedrock than Berkshire, Potsdam, and Sunapee soils. They are not as shallow as Lyman soils.

Typical pedon of Tunbridge silt loam, in an area of Tunbridge-Lyman-Dawson complex, rolling, very rocky, in the town of Pitcairn, 6,900 feet south, 42 degrees 20 minutes east of intersection of Edwards-Pitcairn town line and Fullerville Road (Thomlinson Road):

A—0 to 2 inches; dark reddish brown (5YR 2/2) silt loam; weak fine granular structure; friable; many fine and few medium roots; 5 percent rock fragments; very strongly acid; abrupt smooth boundary.

E—2 to 3 inches; brown (7.5YR 4/2) silt loam; weak fine granular structure; friable; many fine and few medium roots; few fine tubular pores; 5 percent rock fragments; very strongly acid; abrupt broken boundary.

Bhs—3 to 9 inches; dark reddish brown (5YR 3/3) silt loam; weak medium subangular blocky structure; friable; common fine, few medium, and few coarse roots; few fine tubular pores; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bs—9 to 19 inches; dark brown (7.5YR 4/4) silt loam; dark reddish brown (5YR 3/3) streaks following root channels; weak medium subangular blocky structure; friable; common fine, common medium, and few coarse roots; few fine tubular pores; 5 percent rock fragments; strongly acid; gradual wavy boundary.

BC—19 to 30 inches; dark yellowish brown (10YR 4/4) gravelly very fine sandy loam; weak medium subangular blocky structure parting to weak fine granular; friable; few fine and few medium roots; common fine tubular pores; 20 percent rock fragments; strongly acid; abrupt smooth boundary. The thin, darker zone at the bottom of this horizon is from bedrock.

R—30 inches; granitic bedrock.

Thickness of the solum ranges from 14 to 38 inches. Depth to bedrock ranges from 20 to 40 inches. Reaction ranges from extremely acid to moderately acid in the solum and from strongly acid to slightly acid in the substratum. Rock fragments are mostly gravel, channers, and cobbles and range from 5 to 35 percent throughout. Typically, texture in the fine-earth fraction is fine sandy loam, sandy loam, very fine sandy loam, loam, or silt loam.

The A horizon is neutral or has hue of 5YR to 10YR, value of 2 to 5, and chroma of 0 to 4. The E horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 1 or 2.

The Bhs horizon has hue of 5YR to 10YR and approximate value and chroma of 3 or less.

The Bs horizon has hue of 5YR to 2.5Y and value and chroma of 4 or more.

The Bh horizon, where it occurs, is neutral or has hue of 5YR to 10YR. Typically, it has value of 2 or 3 and chroma of 0 to 2. The horizon ranges to 4 inches thick.

The BC horizon, where it occurs, has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 3 to 8.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 6.

Bedrock is slightly weathered schist, gneiss, or granite.

Udifluvents

Udifluvents consist of very deep, well drained and moderately well drained soils that formed in recent alluvium. These soils are on flood plains along larger streams and rivers, generally berms or natural levees along banks. Slopes range from 3 to 8 percent.

In most pedons Udifluvents are mapped with Fluvaquents, and are near Adjidaumo, Flackville, Muskellunge, and Swanton soils. Udifluvents are higher on the landscape and better drained than Fluvaquents. Udifluvents are lower on the landscape and better drained than Adjidaumo, Muskellunge, and Swanton soils. Udifluvents are lower on the landscape than Flackville soils.

These soils are classified above the series level because they vary in soil properties; for that reason, a typical pedon was not provided.

Rock fragments range from 0 to 40 percent throughout. Reaction ranges from very strongly acid to neutral throughout.

The surface layer is 1 to 10 inches thick. It has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 3 or 4. Texture ranges from sandy loam to fine loamy sand.

The substratum has hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 3 or 4.

Udipsamments

Udipsamments consist of very deep, excessively drained to moderately well drained soils. The soil material either is fill or is what was left after surface removal. In areas of the county adjacent to the St. Lawrence River, Udipsamments generally consist of soils formed in piles of dredgings removed from the seaway and then smoothed. In some areas Udipsamments consist of soils that formed in areas that were cut and then smoothed. Slopes range 0 to 25 percent.

These soils are named above the series level in the soil classification system because of their variable soil properties; for that reason, a typical pedon was not provided.

Udipsamments have textures that range from sand to loamy fine sand. Rock fragments range from 0 to 40 percent. Colors range as widely as textures. Reaction ranges from extremely acid to strongly alkaline.

Generally, the surface layer is 2 to 10 inches thick. Texture is sand to sandy loam. It has hue of 10YR or 2.5Y, value of 2 to 7, and chroma of 2 to 6.

The underlying sediments are sand and scattered lenses of loamy sand or loamy fine sand. It has hue of 5YR to 2.5Y, value of 2 to 7, and chroma of 2 to 6.

Udorthents

Udorthents consist of deep, well drained and moderately well drained soils. The soil material is fill or is what was left after surface removal. In areas of the county adjacent to the St. Lawrence River, Udorthents generally consist of soils that formed in piles of dredgings removed from the seaway. In some areas Udorthents consist of soils formed in caps deposited on landfills or formed in piles of mine spoil. In some areas Udorthents formed in shallow borrow pits where the original soil was removed. Most slopes range from 0 to 25 percent, but the range is 0 to 100 percent.

These soils are named above the series level in the soil classification system because of variable soil properties; for that reason, a typical pedon was not provided.

Generally, the surface layer is soil material 2 to 6 inches thick. The substratum varies widely, depending on what material was used as fill or was left after excavation. Bedrock is at a depth of at least 60 inches. Texture ranges from sand to clay throughout. Rock fragments range from 0 to 40 percent. Colors range widely. Reaction ranges from extremely acid to strongly alkaline.

In areas where the substratum consists of nonsoil material, composition varies from site to site; it includes, for example, concrete shards, car bodies, large appliances, and domestic garbage.

Waddington Series

The Waddington series consists of very deep, somewhat excessively drained soils on uplands, kames, and deltas. These soils formed in glaciofluvial deposits. Slopes range from 0 to 35 percent.

Waddington soils are associated with Adams, Grenville, Nahasne, Pyrities, and Raquette soils. Waddington soils have more rock fragments and are less sandy than Adams and Raquette soils. Waddington soils have more rock fragments than Grenville and Pyrities soils. Waddington soils are deeper to bedrock than Nehasne soils.

Typical pedon of Waddington gravelly sandy loam, 3 to 8 percent slopes, in the town of Lisbon, 750 feet southeast of point on Nelson Road, 2,750 feet northeast of junction of Five Mile Line Road and Nelson Road:

Ap—0 to 8 inches; dark brown (7.5YR 4/3) gravelly sandy loam; weak medium subangular blocky structure; friable; many very fine and fine, common medium and few coarse roots; many fine vesicular pores; 15 percent rock fragments; neutral; abrupt smooth boundary.

Bw—8 to 12 inches; strong brown (7.5Y 5/6) gravelly loam; common medium distinct very dark grayish brown (10YR 3/2) organic stains; weak medium subangular blocky structure; friable; many very fine and fine and common medium roots; common medium vesicular pores, few coarse vesicular pores, and few medium tubular pores; few faint silt and clay coats on faces of peds and in pores; 25 percent rock fragments; slightly alkaline; abrupt irregular boundary.

BC—12 to 19 inches; brown (10YR 4/3 and 7.5YR 5/4) very gravelly sandy loam; weak medium subangular blocky structure; single grain; loose; few very fine, common fine and few medium roots; 42 percent rock fragments; slightly effervescent; moderately alkaline; clear wavy boundary.

C1—19 to 36 inches; dark grayish brown (10YR 4/2) and dark brown (10YR 4/3) very gravelly loamy sand; single grain; loose; common fine and few medium roots; 45 percent rock fragments; few small shells; strongly effervescent; moderately alkaline; gradual wavy boundary.

C2—36 to 72 inches; grayish brown (10YR 5/2) and dark grayish brown (10YR 4/2) extremely gravelly sandy loam; single grain; loose; few fine and medium roots; 60 percent rock fragments; strongly effervescent; moderately alkaline.

Thickness of the solum ranges from 18 to 30 inches. Depth to free carbonates ranges from 10 to 30 inches. Bedrock is at a depth of more than 60 inches. Rock fragments, including gravel and cobbles, range, by volume, from 15 to 40 percent in the A horizon, from 10 to 40 percent in the B horizon, and from 40 to 65 percent in the C horizon.

The A or Ap horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 4. Texture commonly is sandy loam, fine sandy loam, or loam in the fine-earth fraction. Reaction is slightly acid or neutral.

The Bw horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 3 to 6. In most pedons texture is sandy loam or gravelly loam in the fine-earth fraction, but in some pedons it is fine sandy loam. Some pedons have a thin subhorizon of loamy fine sand or loamy sand in the fine-earth fraction. Reaction is neutral or slightly alkaline.

The BC horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 6. Texture is loamy sand or sandy loam in the fine-earth fraction. Reaction ranges from neutral to moderately alkaline.

The C horizon consists of gravel, cobbles, or stones that have sand or sandy loam in the interstices. It is variably stratified. Reaction is slightly alkaline or moderately alkaline.

Wegatchie Series

The Wegatchie series consists of very deep, poorly drained and very poorly drained soils on lake plains. These soils formed in silty lacustrine deposits. Slopes range from 0 to 3 percent.

Wegatchie soils are in a drainage sequence with somewhat poorly drained Hailesboro soils and moderately well drained Depeyster soils. They are closely associated with Dorval, Insula, Malone, Munuscong, Roundabout, and Summerville soils.

Wegatchie soils are finer textured than Insula, Malone, Munuscong, Roundabout, and Summerville soils. They are deeper to bedrock than Insula and Summerville soils. Wegatchie soils are mineral, but Dorval soils are organic.

Typical pedon of Wegatchie silt loam, in the town of Hammond, 40 feet west of Oakpoint Road and 4,200 feet south of junction of Oakpoint Road and River Road:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; few fine distinct dark brown (7.5YR 3/4) mottles; weak medium and coarse subangular blocky structure parting to fine and medium granular; friable; slightly sticky; common fine and few medium roots; neutral; abrupt smooth boundary.

Bg1—8 to 13 inches; gray (10YR 5/1) clay loam; common fine faint grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) and many fine and medium distinct brown (7.5YR 4/4) mottles; moderate fine and medium subangular blocky structure; friable; common fine roots; common fine tubular and vesicular pores, few macropores; few faint silt coats on faces of peds; neutral; abrupt smooth boundary.

Bg2—13 to 19 inches; dark gray (10YR 4/1) silty clay loam; gray (10YR 5/1) faces of peds; many fine and medium distinct brown (7.5YR 5/4), strong brown (7.5YR 4/6), and dark brown (7.5YR 3/4) mottles; moderate very fine, fine, and medium angular blocky structure; friable; few fine roots; common fine vesicular and tubular pores, few macropores; few faint silt coats on faces of peds; neutral; abrupt smooth boundary.

BCg—19 to 40 inches; dark gray (10YR 4/1) silt loam; grayish brown (10YR 5/2) prism faces; common fine distinct strong brown (7.5YR 5/8) and many moderate distinct yellowish brown (10 YR 5/6) mottles; moderate coarse prismatic structure; firm; few fine roots on prism faces; many fine and medium tubular and vesicular pores; slightly alkaline; abrupt smooth boundary.

C—40 to 72 inches; yellowish brown (10 YR 5/6) silt loam; many moderate distinct gray (10YR 6/1) silt loam varves; weak medium platy structure; firm; 10 percent rock fragments; slightly effervescent, slightly alkaline.

Thickness of the solum ranges from 20 to 40 inches. Depth to carbonates ranges from 20 to 60 inches. Depth to bedrock is greater than 60 inches. Rock fragments, mostly gravel, range from 0 to 2 percent in the solum and from 0 to 10 percent in the C horizon.

The A horizon is neutral or has hue of 10YR, value of 2 or 3, and chroma of 0 to 2. Texture is silt loam, very fine sandy loam, loam, or their mucky analog. In very poorly drained pedons an Oa or Oe horizon as much as 6 inches thick overlies the A horizon. Reaction ranges from moderately acid to neutral.

The B horizon is neutral or has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 0 to 2. Texture is silt loam, silty clay loam, clay loam, or very fine sandy loam. Reaction ranges from slightly acid to slightly alkaline.

The BC horizon is neutral or has hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 0 to 2. In texture it is similar to the B horizon. Reaction is slightly acid to slightly alkaline.

The C horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 1 to 6; below depths of 30 inches chroma is 3 to 6. Texture is very fine sandy loam, silt loam, clay loam, or silty clay loam; in most pedons the horizon is varved. Reaction ranges from neutral to moderately alkaline.

Formation of the Soils

Dr. Ray B. Byrant, Cornell University, and Dr. James S. Street, St. Lawrence University, helped to prepare this section.

This section describes the major factors of soil formation, tells how these factors have affected the soils of St. Lawrence County, and explains some of the processes of soil horizon development as related to soil formation in the county.

Factors of Soil Formation

Soils are the product of weathering of parent material and of other physical and chemical processes that act on parent material (Jenny 1941). The properties of the soil at any point on Earth depend on a combination of factors: physical and chemical composition of the parent material, climate, plant and animal life, topography, and time. The relative influence of each of these factors of soil formation differs from place to place, and each modifies the effect of the others. For example, topography and parent material influence the effects of climate and plant and animal life. In some places one factor is a dominant influence. Table 22 shows relationships among parent material, dominant texture, and drainage of the soils in St. Lawrence County.

Parent Material

Parent material is the unconsolidated earthy material in which soil forms. It determines the mineralogical and physical composition of the soil and contributes greatly to chemical composition. It also influences the rate of soil-forming processes.

Most soils in St. Lawrence County formed in glacial deposits, mainly glacial till. However, the soils also formed in marine and lacustrine material, glacial outwash, recent deposits of stream alluvium, and moderately deep and deep accumulations of organic matter.

Soils formed in glacial till have a wide range of characteristics resulting from a heterogeneous mixture of rock and soil particles. Although most of these soils have a firm substratum, they formed in very different kinds of glacial till. For example, Potsdam, Grenville, and Pyrities soils formed in glacial till more than 60 inches thick; Summerville, Gouverneur, and Ogdensburg soils formed in very shallow to moderately deep glacial till over marble, limestone, or dolomitic sandstone bedrock; and Insula, Tunbridge, and Lyman soils formed in shallow or moderately deep glacial till over gneiss or sandstone bedrock.

Enormous quantities of meltwater flowing off melting glacial ice carried and sorted soil and rock debris. This glaciofluvial material was redeposited as layers of sand and gravel on deltas, kames, eskers, outwash plains, and terraces. Waddington, Raquette, Colton, and Duxbury soils, which are medium to coarse textured, formed in glaciofluvial material.

As continental glaciation receded, proglacial Lake Iroquois and subsequent lower lake levels inundated most of the northern part of the county. A delta at an elevation of 915 feet, south of the village of Colton, marks the end of the Lake Iroquois water plane (Clark 1983). Streams draining into these water bodies first dumped, sorted, and then stratified coarse sediment in deltas. Further out toward the middle of this proglacial lake, where energy was insufficient to keep particles suspended, silt and clay were deposited. As the lake receded, some of the finer sediment was washed from the steeper or more prominent points on the landscape, exposing prior deposits of glacial till or glaciofluvial materials. However, lacustrine silt and clay sediment remained on concave or planar landscape features. Depeyster, Hailesboro, and Roundabout soils, for example, formed in lacustrine sediment.

As the glaciation receded further and glacial meltwater increased, the rising sea level extended the Atlantic Ocean, creating the Champlain Sea, which inundated the extreme northern part of St. Lawrence County. The upper level of salt water has been delimited on the general soil map of St. Lawrence County (Clark 1983). This body of stillwater deposited the clay and silt that were the parent material of Heuvelton, Matoon, and Adjidaumo soils, for example.

When the immense weight of the glacier was removed, the Earth's surface rebounded, and marine water retreated from the area, the St. Lawrence River was brackish for a brief time. After that, the St. Lawrence River became freshwater flowing northeastward. The nature and extent of soils formed in brackish water deposits and in all three types of stillwater deposits have been studied and described (Kern 1987).

More recently, overflowing streams have deposited fresh, dark alluvium on flood plains. Typically, silty or loamy soils that have weak profile development formed in this material; Cornish and Redwater soils and Fluvaquents are examples.

Mucky soils formed in organic deposits in low-lying areas. Carbondale and Dorval soils, for example, formed in well decomposed remains of trees and other plants.

Topography

The shape, slope, and position of the land surface relative to the water table have had a great influence on soil formation in St. Lawrence County.

Soils formed in convex, sloping areas, where little runoff accumulates or where runoff is medium or rapid, generally are well drained and have a bright, unmottled subsoil. These soils are generally leached to a greater depth than nearby, low-lying, wetter soils. Examples are Adams, Berkshire, and Pyrites soils.

In more gently sloping areas, where runoff is slower and the soils are wet, the subsoil is mottled. In level areas or in slight depressions where the water table is at or near the surface for long periods and the soils are wet, the surface layer is thick and dark and the subsoil is strongly mottled or gray. Examples are Adjidaumo, Cook, Munuscong, and Runeberg soils.

Climate

Climate, particularly temperature and precipitation, determines to a large degree the kind of weathering processes that occur in the soil. It also affects the growth and kind of vegetation and the leaching and translocation of weathered materials.

St. Lawrence County has a humid, continental climate, which promotes development of moderately weathered, leached soils. Except for some small, warmer mesic areas along the Jefferson County line not recognized in mapping, soils in St. Lawrence County classify in the frigid temperature regime. Cooler air and soil temperatures in the county's frigid soil temperature regime tend to slow down weathering processes and to shorten growing seasons compared to mesic areas south of the county. More detailed and specific data on the climate of St. Lawrence County are in the "Climate" section under "General Nature of the County."

Plant and Animal Life

All living organisms, from plants and animals to bacteria and fungi, influence soil formation. Vegetation generally determines the amount of organic matter and nutrients in the soil and the color and structure of the surface layer. Earthworms and other burrowing animals help to keep the soil porous and to make it more permeable to air and water. Their waste products aggregate soil particles and improve soil structure. Bacteria and fungi decompose vegetation in a process that releases nutrients.

St. Lawrence County originally had forests of northern hardwoods and pines. Leaching of nutrients is slow under hardwoods as they take up large quantities of bases (nutrients) and restore much of them to the soil each year through leaf litter. Compared to deciduous trees, conifers, such as pines, do not take up as much nutrients and recycle them through leaf litter. Under coniferous vegetation, bases are more static in the soil solution, are not held so firmly by vegetation in a nutrient cycle, and therefore are more susceptible to leaching.

On many soils on uplands, trees have a shallow rooting depth and in many spots windthrow has mixed the soil material.

Human activities, such as clearing trees and cultivating the land, have also influenced changes in the soils in the county. These also include fertilizing and thus adding nutrients, plowing and thus mixing some soil horizons, and accelerating erosion in many areas.

Time

The degree of profile development reflects the age of a soil as well as the influence of other factors. In geological terms, the parent material of the soils in the survey area is relatively young, having been deposited during or since the last glaciation. The various soils have reached different stages of profile development because the other soil-forming factors also influence the rate of profile development. The soil profile of Heuvelton soils, for example, is developed to a depth of about 22 inches; that of Pyrities soils, to a depth of 30 inches. Though the length of time for their development is the same, Heuvelton and Pyrites soils differ in appearance, in depth of weathering, and in parent material.

In alluvial soils, which depositions of parent material augment at regular intervals, there is very little time between depositions for profile development. Lovewell and Redwater soils, for example, are both alluvial, have relatively indistinct horizons, and show weak profile development.

Processes of Soil Formation

This section is a brief explanation of soil horizon nomenclature and a discussion of processes of soil profile development as related to soil formation.

The soil-forming factors form different layers, or soil horizons, in a soil profile. A soil profile extends from the surface downward into material that the soil-forming processes have little altered. Most soils have three major horizons, the A, B, and C horizons, which may be subdivided to indicate changes within a given horizon.

The surface layer is designated the A or Ap horizon; the subscript “p” is for a surface layer that has been plowed at regular intervals. The surface layer generally has uniform thickness; it also has organic matter distributed uniformly throughout. The A (or Ap) horizon is the zone of accumulation of organic matter from decaying native vegetation.

The E horizon commonly underlies the A horizon. It is the zone of maximum eluviation, or depletion, of clay, organic matter, and iron compounds. The E horizon, as a result of the loss of iron compounds, is noticeably lighter in color than the overlying horizon or the underlying horizons.

The B horizon, or subsoil, underlies the A horizon. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, or other compounds leached from the layers above it. The B horizon generally has blocky or prismatic structure and is firmer and lighter colored than the A horizon. However, in many soils in St. Lawrence County, instead of having formed through illuviation the B horizon formed through alteration in place, the cause of which was either oxidation and reduction of iron or weathering of clay minerals.

The C horizon, which is below the B horizon, consists of materials that weathering may have modified more than soil-forming processes have changed. For example, in Raquette soils the C horizon is structureless or is single grained and loose, but in Hogansburg and Malone soils it is platy and firm.

Several processes cause the formation of soil horizons. Among these are accumulation of organic matter, leaching of soluble salts and minerals, translocation of clay minerals, reduction and transfer of iron, and formation of dense and compact layers in the subsoil (Simonson 1959).

As plant residue decomposes, organic matter accumulates and darkens the surface layer and helps to form the A horizon. Organic matter, if lost, takes a long time to be replaced. The content of organic matter in the surface layer of soils in St. Lawrence County averages about 4 percent.

For soils to develop a distinct subsoil, some lime and other soluble salts must be leached to facilitate other soil processes, such as translocation of clay minerals. The kinds of salts originally present in the soil, the rate and depth of percolation, and soil texture are factors that affect leaching.

In some soils in St. Lawrence County, the translocation of silicate clay minerals is an important process in soil profile development. In these soils the clay content varies from soil horizon to soil horizon; clay particles are transported downward from the A horizon and redeposited in the B horizon as clay films on ped faces, as linings of pores and root channels, and as coatings on some coarse fragments. In some soils enough clay has been eluviated to the B horizon to form an overlying E horizon. In Heuvelton soils, for example, translocation of clay has resulted in a higher clay content in the B horizon than in the A horizon.

The reduction and transfer of iron compounds, or gleying, occur mainly in wetter, more poorly drained soils. In poorly drained and very poorly drained soils, such as Munuscong and Adjidaumo soils, the grayish subsoil indicates the reduction of iron. In moderately well drained and somewhat poorly drained soils, such as Kalurah and Malone soils, yellowish brown and reddish brown mottles indicate the segregation of iron compounds. Gleying has not occurred in well drained soils, such as Pyrites soils, which have a bright-colored, unmottled subsoil.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 2.4
Low	2.4 to 3.2
Moderate	3.2 to 5.2
High	more than 5.2

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Bajada. A broad alluvial slope extending from the base of a mountain range out into a basin and formed by coalescence of separate alluvial fans.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation to the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque. A semicircular, concave, bowllike area that has steep faces primarily resulting from glacial ice and snow abrasion.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Congeliturbate. Soil material disturbed by frost action.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either to drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material to eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated to wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity to accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and to which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head out. To form a flower head.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil to which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water to soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil to such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface to pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water to the soil.

Permafrost. Layers of soil, or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed continuously for a long time.

Permeability. The quality of the soil that enables water or air to move downward to the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See F.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving to the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending to all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	less than 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	greater than 9.0

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Seasonal high water table. A zone of saturation at the highest average depth during the wettest season. It is at least 6 inches thick, persists in the soil for more than a few weeks, and is within 6 feet of the soil surface. The depth to the seasonal high water table implies the degree of wetness in the soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shot rock. Shot rock consists of angular stones and boulders that blasting dislodged during mining operations. Shot rock thus came from rock strata overlying target ore seams; it has not passed through a crusher or other ore recovery processes.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	3 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent

Steep	25 to 35 percent
Very steep	35 percent and higher

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Spodic horizon. A dark reddish brown or reddish brown soil layer with fine sandy loam or coarser texture. This layer is a result of iluviated organic matter and aluminum, with or without iron.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift generally marking the end of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1951-86 at Canton, New York)

Month	Temperature: Average daily minimum	Temperature: Average daily minimum	Temperature: Average daily	Temperature: 2 years in 10 will have-- Maximum temperature higher than--	Temperature: 2 years in 10 will have-- Minimum temperature lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more	Precipitation: Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	25.2	4.6	14.9	56	0	0	2.09	1.22	2.85	7	21.2
February-	28.3	7.4	17.9	57	0	9	2.10	1.01	3.04	6	17.2
March----	38.4	19.3	28.9	70	0	24	2.22	1.16	3.13	7	12.3
April----	53.2	32.6	42.9	81	10	153	2.87	1.75	3.87	8	3.4
May------	66.1	43.4	54.8	86	24	459	3.19	1.89	4.35	8	0.2
June-----	74.7	52.7	63.7	89	33	711	3.15	2.01	4.18	7	0.0
July-----	79.6	57.5	68.6	91	39	887	3.36	2.03	4.56	7	0.0
August---	77.4	55.4	66.4	90	36	818	4.07	2.14	5.75	8	0.0
September	69.7	47.7	58.7	87	26	561	3.80	2.44	5.02	8	0.0
October--	58.2	37.1	47.7	80	16	261	3.12	1.81	4.28	8	0.3
November-	44.7	28.3	36.5	70	3	54	3.18	1.97	4.27	8	5.9
December-	30.9	12.6	21.8	61	3	18	2.83	1.67	3.86	8	20.5
Yearly:											
Average	53.9	33.2	43.6	---	---	---	---	---	---	---	---
Extreme	---	---	---	92	3	---	---	---	---	---	---
Total--	---	---	---	---	---	3,955	35.98	31.52	40.31	90	81.0

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1951-86 at Canton, New York)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 4	May 22	June 4
2 years in 10 later than--	Apr. 29	May 16	May 30
5 years in 10 later than--	Apr. 20	May 3	May 20
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 3	Sept. 21	Sept. 7
2 years in 10 earlier than--	Oct. 8	Sept. 27	Sept. 13
5 years in 10 earlier than--	Oct. 19	Oct. 8	Sept. 23

Table 3.--Growing Season

(Recorded in the period 1951-86 at Canton, New York)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	158	131	102
8 years in 10	166	140	110
5 years in 10	181	157	125
2 years in 10	197	173	140
1 year in 10	204	182	147

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
021	Dawson-Fluvaquents-Loxley complex, frequently flooded	46,271	2.6
023	Loxley-Dawson complex	16,036	0.9
363A	Adams sand, 0 to 3 percent slopes	4,042	0.2
363B	Adams sand, 3 to 15 percent slopes	18,570	1.0
363D	Adams sand, 15 to 35 percent slopes	4,037	0.2
365	Naumburg-Croghan complex	12,585	0.7
376A	Colton-Duxbury-Adams complex, 0 to 3 percent slopes	3,937	0.2
376C	Colton-Duxbury-Adams complex, 3 to 15 percent slopes	48,836	2.7
376D	Colton-Duxbury-Adams complex, 15 to 35 percent slopes	17,216	1.0
380B	Colton-Duxbury-Dawson complex, 0 to 15 percent slopes	12,977	0.7
380D	Colton-Duxbury-Dawson complex, 15 to 35 percent slopes	18,526	1.0
643C	Berkshire loam, 3 to 15 percent slopes, very bouldery	13,390	0.7
643D	Berkshire loam, 15 to 35 percent slopes, very bouldery	3,827	0.2
644C	Berkshire-Lyme complex, rolling, very bouldery	17,892	1.0
644D	Berkshire-Lyme complex, hilly, very bouldery	2,578	0.1
709B	Adirondack-Tughill-Lyme complex, 0 to 8 percent slopes, very bouldery	17,456	1.0
741C	Potsdam-Tunbridge-Crary complex, 3 to 15 percent slopes, very bouldery	68,283	3.8
741D	Potsdam-Tunbridge complex, 15 to 35 percent slopes, very bouldery	40,141	2.2
743C	Potsdam very fine sandy loam, 3 to 15 percent slopes, very bouldery	30,959	1.7
743D	Potsdam very fine sandy loam, 15 to 35 percent slopes, very bouldery	6,851	0.4
745C	Crary-Potsdam complex, 3 to 15 percent slopes, very bouldery	32,816	1.8
747B	Crary-Adirondack complex, 0 to 8 percent slopes, very bouldery	16,574	0.9
807	Udorthents, mine waste	1,872	0.1
831C	Tunbridge-Lyman complex, 3 to 15 percent slopes, very rocky	25,227	1.4
831D	Tunbridge-Lyman complex, 15 to 35 percent slopes, very rocky	49,244	2.7
831F	Tunbridge-Lyman complex, 35 to 60 percent slopes, very rocky	3,060	0.2
833C	Tunbridge-Adirondack-Lyman complex, rolling, very bouldery	16,706	0.9
835C	Tunbridge-Borosaprists-Ricker complex, rolling, very rocky	15,900	0.9
861C	Lyman-Ricker-Rock outcrop complex, 3 to 15 percent slopes, very bouldery	4,892	0.3
861D	Lyman-Ricker-Rock outcrop complex, 15 to 35 percent slopes, very bouldery	9,423	0.5
861F	Lyman-Ricker-Rock outcrop complex, 35 to 60 percent slopes, very bouldery	6,210	0.3
891F	Rock outcrop-Ricker-Lyman complex, 35 to 60 percent slopes, very bouldery	1,629	*
AaB	Adams sand, 2 to 8 percent slopes	17,582	1.0
AaC	Adams sand, rolling	9,258	0.5
AaD	Adams sand, 15 to 35 percent slopes	8,377	0.5
AdB	Adams loamy fine sand, 2 to 8 percent slopes	15,693	0.9
AdC	Adams loamy fine sand, 8 to 15 percent slopes	3,696	0.2
Ak	Adjidaumo silty clay	40,852	2.3
Am	Adjidaumo mucky silty clay	6,465	0.4
Ao	Adjidaumo silty clay, flooded	6,170	0.3
Ap	Adjidaumo silty clay, rocky	2,439	0.1
ArC	Adjidaumo-Summerville-Rock outcrop complex, rolling	6,200	0.3
BeB	Berkshire loam, 3 to 8 percent slopes	1,241	*
BgC	Berkshire-Lyme complex, rolling, very bouldery	3,668	0.2
BkC	Berkshire and Sunapee soils, 8 to 15 percent slopes, very bouldery	420	*
Bo	Borosaprists and Fluvaquents, frequently flooded	27,263	1.5
Ce	Carbondale muck	28,304	1.6
CgB	Colton-Duxbury complex, 2 to 8 percent slopes	4,480	0.2
CgC	Colton-Duxbury complex, rolling	2,320	0.1
CgD	Colton-Duxbury complex, hilly	1,478	*
Ck	Cook loamy fine sand	801	*
Cn	Cornish silt loam	1,435	*
Cp	Coveytown loamy fine sand	3,561	0.2
Cr	Coveytown and Cook soils, very stony	10,719	0.6
CsB	Crary silt loam, 3 to 8 percent slopes	1,064	*
CtB	Crary and Potsdam soils, 3 to 8 percent slopes, very bouldery	2,974	0.2
CuB	Croghan sand, 0 to 8 percent slopes	5,868	0.3
CvA	Croghan loamy fine sand, 0 to 3 percent slopes	10,102	0.6
CvB	Croghan loamy fine sand, 3 to 8 percent slopes	14,177	0.8
Da	Dawson peat	604	*
DAM	Large dams	15	*
Dd	Deford loamy fine sand	12,617	0.7

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
Df	Deford mucky loamy fine sand	12,502	0.7
DpA	Depeyster silt loam, 0 to 2 percent slopes	808	*
DpB	Depeyster silt loam, 2 to 6 percent slopes	4,718	0.3
DpC	Depeyster silt loam, rolling	3,056	0.2
Dr	Dorval muck	16,169	0.9
Du	Dune land	479	*
EeB	Eelweir fine sandy loam, 2 to 8 percent slopes	636	*
EmA	Elmwood fine sandy loam, 0 to 3 percent slopes	2,512	0.1
EmB	Elmwood fine sandy loam, 3 to 8 percent slopes	7,055	0.4
Fa	Fahey loamy fine sand	2,118	0.1
FkA	Flackville loamy fine sand, 0 to 3 percent slopes	4,504	0.2
FkB	Flackville loamy fine sand, 3 to 8 percent slopes	6,467	0.4
Fu	Fluvaquents-Udifluvents complex, frequently flooded	11,054	0.6
GrB	Grenville fine sandy loam, 3 to 8 percent slopes	11,435	0.6
GrC	Grenville fine sandy loam, 8 to 15 percent slopes	2,028	0.1
GsD	Grenville fine sandy loam, 15 to 25 percent slopes, very stony	424	*
Gu	Guff silty clay loam	2,873	0.2
HaA	Hailesboro silt loam, 0 to 2 percent slopes	7,626	0.4
HaB	Hailesboro silt loam, 2 to 6 percent slopes	4,830	0.3
Hc	Hannawa loam	4,192	0.2
HeB	Heuvelton silty clay loam, 2 to 6 percent slopes	4,599	0.3
HeC	Heuvelton silty clay loam, rolling	6,817	0.4
HkE	Heuvelton and Depeyster soils, 15 to 45 percent slopes	2,737	0.2
HnA	Hogansburg fine sandy loam, 0 to 3 percent slopes	8,964	0.5
HnB	Hogansburg fine sandy loam, 3 to 8 percent slopes	39,525	2.2
HrB	Hogansburg and Grenville soils, 0 to 8 percent slopes, very stony	29,529	1.6
IaB	Insula gravelly fine sandy loam, 0 to 8 percent slopes	1,107	*
InB	Insula gravelly fine sandy loam, 0 to 8 percent slopes, very rocky	6,286	0.3
IrC	Insula-Rock outcrop complex, rolling	54,754	3.0
IrD	Insula-Rock outcrop complex, hilly	47,829	2.6
KaA	Kalurah fine sandy loam, 0 to 3 percent slopes	1,915	0.1
KaB	Kalurah fine sandy loam, 3 to 8 percent slopes	17,438	1.0
KbB	Kalurah and Pyrities soils, 0 to 8 percent slopes, very stony	14,319	0.8
Lc	Lovewell silt loam	581	*
Ld	Loxley mucky peat	1,327	*
LeC	Lyman-Rock outcrop complex, 3 to 15 percent slopes, very bouldery	2,264	0.1
LeD	Lyman-Rock outcrop complex, 15 to 35 percent slopes, very bouldery	4,973	0.3
Lt	Lyme-Tughill complex, very bouldery	5,128	0.3
MaA	Malone loam, 0 to 3 percent slopes	13,817	0.8
MaB	Malone loam, 3 to 8 percent slopes	13,200	0.7
MbB	Malone loam, 0 to 8 percent slopes, very stony	33,326	1.8
MdB	Malone-Adjidaumo complex, undulating	900	*
MeB	Malone-Adjidaumo complex, 0 to 8 percent slopes, very stony	3,873	0.2
MfA	Matoon silty clay loam, 0 to 2 percent slopes	10,027	0.6
MfB	Matoon silty clay loam, 2 to 6 percent slopes	1,909	0.1
Mh	Mino fine sandy loam	3,936	0.2
Mn	Munuscong mucky fine sandy loam	10,692	0.6
MsA	Muskellunge silty clay loam, 0 to 2 percent slopes	54,361	3.0
MsB	Muskellunge silty clay loam, 2 to 6 percent slopes	31,572	1.7
MuB	Muskellunge silty clay loam, 0 to 6 percent slopes, rocky	14,496	0.8
MwB	Muskellunge-Adjidaumo complex, undulating	7,382	0.4
Na	Naumburg loamy fine sand	30,374	1.7
NhA	Nehasne sandy loam, 0 to 3 percent slopes	2,111	0.1
NhB	Nehasne sandy loam, 3 to 8 percent slopes	2,591	0.1
NhC	Nehasne sandy loam, 8 to 15 percent slopes	414	*
NoA	Nicholville very fine sandy loam, 0 to 2 percent slopes	396	*
NoB	Nicholville very fine sandy loam, 2 to 6 percent slopes	5,491	0.3
NoC	Nicholville very fine sandy loam, rolling	2,719	0.2
NrB	Nicholville very fine sandy loam, 0 to 6 percent slopes, rocky	648	*
OgA	Ogdensburg loam, 0 to 3 percent slopes	3,102	0.2
OgB	Ogdensburg loam, 3 to 8 percent slopes	709	*
Pg	Pits, gravel and sand	1,964	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
Ph	Pits, quarry	144	*
PmC	Potsdam very fine sandy loam, 8 to 15 percent slopes	644	*
PoC	Potsdam-Tunbridge complex, 3 to 15 percent slopes, very bouldery	14,546	0.8
PoD	Potsdam-Tunbridge complex, 15 to 35 percent slopes, very bouldery	735	*
PpD	Potsdam and Berkshire soils, 15 to 35 percent slopes, very bouldery	1,278	*
PsC	Potsdam and Crary soils, 8 to 15 percent slopes, very bouldery	1,509	*
PvB	Pyrities fine sandy loam, 3 to 8 percent slopes	8,596	0.5
PvC	Pyrities fine sandy loam, 8 to 15 percent slopes	3,074	0.2
PxD	Pyrities fine sandy loam, 15 to 25 percent slopes, very stony	8,154	0.5
PyB	Pyrities fine sandy loam, 3 to 8 percent slopes, rocky	2,559	0.1
PyC	Pyrities fine sandy loam, 8 to 15 percent slopes, rocky	1,906	0.1
PzC	Pyrities and Kalurah soils, 8 to 15 percent slopes, very stony	3,716	0.2
QwB	Quetico-Rock outcrop-Insula complex, 0 to 8 percent slopes	7,080	0.4
RaA	Raquette sandy loam, 0 to 3 percent slopes	1,087	*
RaB	Raquette sandy loam, 3 to 8 percent slopes	3,224	0.2
RaC	Raquette sandy loam, 8 to 15 percent slopes	768	*
Rd	Redwater fine sandy loam	3,542	0.2
RoA	Roundabout silt loam, 0 to 2 percent slopes	6,130	0.3
RoB	Roundabout silt loam, 2 to 6 percent slopes	3,285	0.2
Rt	Runeberg loam	2,713	0.2
Ru	Runeberg loam, very stony	1,951	0.1
SaB	Salmon very fine sandy loam, 2 to 6 percent slopes	1,221	*
SaC	Salmon very fine sandy loam, rolling	2,710	0.2
Se	Searsport muck	3,683	0.2
Sg	Stockholm loamy fine sand	16,648	0.9
ShB	Summerville fine sandy loam, 0 to 8 percent slopes	3,385	0.2
SkB	Summerville-Gouverneur complex, 0 to 8 percent slopes, rocky	10,389	0.6
SlD	Summerville-Rock outcrop complex, hilly	17,388	1.0
SmC	Summerville-Rock outcrop-Nehasne complex, rolling	20,339	1.1
SpB	Sunapee fine sandy loam, 3 to 8 percent slopes	611	*
SsB	Sunapee and Berkshire soils, 3 to 8 percent slopes, very bouldery	4,203	0.2
Sw	Swanton fine sandy loam	29,455	1.6
TdA	Trout River loamy sand, 0 to 3 percent slopes	402	*
TdB	Trout River loamy sand, 3 to 8 percent slopes	2,346	0.1
TfB	Trout River and Fahey soils, 0 to 8 percent slopes, very stony	4,373	0.2
TuD	Tunbridge-Lyman complex, 15 to 35 percent slopes, very rocky	25,442	1.4
TwC	Tunbridge-Lyman-Dawson complex, rolling, very rocky	26,802	1.5
Ua	Udipsamments, smoothed	1,039	*
Ue	Udorthents, loamy	6,344	0.4
Uf	Udorthents, clayey	1,197	*
Ug	Udorthents, mine waste, acid	120	*
Uh	Udorthents, mine waste, nonacid	567	*
Un	Udorthents, refuse substratum	398	*
Ur	Urban land	1,500	*
W	Water	92,359	5.1
WaA	Waddington gravelly sandy loam, 0 to 3 percent slopes	241	*
WaB	Waddington gravelly sandy loam, 3 to 8 percent slopes	3,688	0.2
WaC	Waddington gravelly sandy loam, rolling	1,415	*
WaD	Waddington gravelly sandy loam, 15 to 35 percent slopes	1,182	*
WdB	Waddington very cobbly sandy loam, 3 to 8 percent slopes	710	*
Wg	Wegatchie silt loam	5,208	0.3
	Total	1,805,400	100.0

* Less than 0.1 percent.

Table 5.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Soil name
BeB	Berkshire loam, 3 to 8 percent slopes
Cn	Cornish silt loam (if drained)
DpA	Depeyster silt loam, 0 to 2 percent slopes
DpB	Depeyster silt loam, 2 to 6 percent slopes
EeB	Eelweir fine sandy loam, 2 to 8 percent slopes
EmA	Elmwood fine sandy loam, 0 to 3 percent slopes
EmB	Elmwood fine sandy loam, 3 to 8 percent slopes
FkA	Flackville loamy fine sand, 0 to 3 percent slopes
FkB	Flackville loamy fine sand, 3 to 8 percent slopes
GrB	Grenville fine sandy loam, 3 to 8 percent slopes
HaA	Hailesboro silt loam, 0 to 2 percent slopes (if drained)
HaB	Hailesboro silt loam, 2 to 6 percent slopes (if drained)
HeB	Heuvelton silty clay loam, 2 to 6 percent slopes
HnA	Hogansburg fine sandy loam, 0 to 3 percent slopes
HnB	Hogansburg fine sandy loam, 3 to 8 percent slopes
KaA	Kalurah fine sandy loam, 0 to 3 percent slopes
KaB	Kalurah fine sandy loam, 3 to 8 percent slopes
Lc	Lovewell silt loam
MaA	Malone loam, 0 to 3 percent slopes (if drained)
MaB	Malone loam, 3 to 8 percent slopes (if drained)
MfA	Matoon silty clay loam, 0 to 2 percent slopes (if drained)
MfB	Matoon silty clay loam, 2 to 6 percent slopes (if drained)
Mh	Mino fine sandy loam (if drained)
MsA	Muskellunge silty clay loam, 0 to 2 percent slopes (if drained)
MsB	Muskellunge silty clay loam, 2 to 6 percent slopes (if drained)
NhA	Nehasne sandy loam, 0 to 3 percent slopes
NhB	Nehasne sandy loam, 3 to 8 percent slopes
NoA	Nicholville very fine sandy loam, 0 to 2 percent slopes
NoB	Nicholville very fine sandy loam, 2 to 6 percent slopes
OgA	Ogdensburg loam, 0 to 3 percent slopes (if drained)
OgB	Ogdensburg loam, 3 to 8 percent slopes (if drained)
PvB	Pyrities fine sandy loam, 3 to 8 percent slopes
RaA	Raquette sandy loam, 0 to 3 percent slopes
RaB	Raquette sandy loam, 3 to 8 percent slopes
Rd	Redwater fine sandy loam (if drained)
RoA	Roundabout silt loam, 0 to 2 percent slopes (if drained)
RoB	Roundabout silt loam, 2 to 6 percent slopes (if drained)
SaB	Salmon very fine sandy loam, 2 to 6 percent slopes
Sg	Stockholm loamy fine sand (if drained)
SpB	Sunapee fine sandy loam, 3 to 8 percent slopes
Sw	Swanton fine sandy loam (if drained)
WaA	Waddington gravelly sandy loam, 0 to 3 percent slopes
WaB	Waddington gravelly sandy loam, 3 to 8 percent slopes

Table 6.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
021:						
Dawson------------------	5w	---	---	---	---	---
Fluvaquents-------------	5w	---	---	---	---	2.00
Loxley------------------	5w	---	---	---	---	---
023:						
Loxley------------------	5w	---	---	---	---	---
Dawson------------------	5w	---	---	---	---	---
363A:						
Adams-------------------	4s	---	---	10.00	2.00	4.00
363B:						
Adams-------------------	6e	---	---	---	2.00	4.00
363D:						
Adams-------------------	7e	---	---	---	---	---
365:						
Naumburg----------------	4w	---	---	14.00	2.50	5.50
Croghan-----------------	2w	---	---	16.00	3.00	5.50
376A:						
Colton------------------	3s	---	---	16.00	3.00	6.00
Duxbury-----------------	1	---	---	20.00	---	---
Adams-------------------	4s	---	---	12.00	2.00	4.00
376C:						
Colton------------------	4s	---	---	14.00	3.00	6.00
Duxbury-----------------	3e	---	---	18.00	---	---
Adams-------------------	4e	---	---	---	2.00	3.50
376D:						
Colton------------------	7s	---	---	---	---	---
Duxbury-----------------	6e	---	---	---	---	---
Adams-------------------	7e	---	---	---	---	---
380B:						
Colton------------------	4s	---	---	---	3.00	6.00
Duxbury-----------------	3e	---	---	18.00	---	---
Dawson------------------	5w	---	---	---	---	---
380D:						
Colton------------------	7s	---	---	---	---	---
Duxbury-----------------	6e	---	---	---	---	---

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
380D:						
Dawson------------------	5w	---	---	---	---	---
643C:						
Berkshire, very bouldery	6s	---	---	---	---	3.00
643D:						
Berkshire, very bouldery	7s	---	---	---	---	---
644C:						
Berkshire, rolling, very bouldery---------------	6s	---	---	---	---	3.00
Lyme, very bouldery-----	6s	---	---	---	---	2.00
644D:						
Berkshire, hilly, very bouldery---------------	7s	---	---	---	---	---
Lyme, very bouldery-----	7s	---	---	---	---	2.00
709B:						
Adirondack, very bouldery---------------	6s	---	---	---	---	---
Tughill, very bouldery--	6s	---	---	---	---	---
Lyme, very bouldery-----	6s	---	---	---	---	2.00
741C:						
Potsdam, very bouldery--	6s	---	---	---	---	5.00
Tunbridge, very bouldery	6s	---	---	---	---	3.10
Crary, very bouldery----	6s	---	---	---	---	5.00
741D:						
Potsdam, very bouldery--	7s	---	---	---	---	---
Tunbridge, very bouldery	7s	---	---	---	---	---
743C:						
Potsdam, very bouldery--	6s	---	---	---	---	5.50
743D:						
Potsdam, very bouldery--	7s	---	---	---	---	5.00
745C:						
Crary, very bouldery----	6s	---	---	---	---	5.50
Potsdam, very bouldery--	6s	---	---	---	---	5.50
747B:						
Crary, very bouldery----	6s	---	---	---	---	4.00
Adirondack, very bouldery---------------	6s	---	---	---	---	---
807:						
Udorthents, mine waste--	7s	---	---	---	---	---
831C:						
Tunbridge, very bouldery	6s	---	---	---	---	3.10

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
831C:						
Lyman, very bouldery----	6s	---	---	---	---	---
831D:						
Tunbridge, very bouldery	7s	---	---	---	---	---
Lyman, very bouldery----	7s	---	---	---	---	---
831F:						
Tunbridge, very bouldery	7s	---	---	---	---	---
Lyman, very bouldery----	7s	---	---	---	---	---
833C:						
Tunbridge, very bouldery	6s	---	---	---	---	3.10
Adirondack, very bouldery---------------	6s	---	---	---	---	---
Lyman, very bouldery----	6s	---	---	---	---	---
835C:						
Tunbridge, very bouldery	6s	---	---	---	---	3.10
Borosaprists------------	5w	---	---	---	---	---
Ricker, very bouldery---	7s	---	---	---	---	---
861C:						
Lyman-------------------	6s	---	---	---	---	---
Ricker, very bouldery---	7s	---	---	---	---	---
Rock outcrop, very bouldery---------------	8	---	---	---	---	---
861D:						
Lyman, very bouldery----	7s	---	---	---	---	---
Ricker, very bouldery---	7s	---	---	---	---	---
Rock outcrop------------	8	---	---	---	---	---
861F:						
Lyman, very bouldery----	7s	---	---	---	---	---
Ricker, very bouldery---	8	---	---	---	---	---
Rock outcrop------------	8	---	---	---	---	---
891F:						
Rock outcrop------------	8	---	---	---	---	---
Ricker, very bouldery---	8	---	---	---	---	---
Lyman, very bouldery----	7s	---	---	---	---	---
AaB:						
Adams, sand-------------	4s	---	---	10.00	2.00	4.00
AaC:						
Adams, sand-------------	6e	---	---	---	1.50	3.50

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
AaD:						
Adams, sand	7e	---	---	---	---	---
AdB:						
Adams, loamy fine sand	3s	---	---	12.00	2.50	4.50
AdC:						
Adams, loamy fine sand	4e	---	---	12.00	2.50	4.50
Ak:						
Adjidaumo, silty clay	4w	---	---	10.00	3.00	3.50
Am:						
Adjidaumo, mucky silty clay	5w	---	---	---	---	---
Ao:						
Adjidaumo, flooded	5w	---	---	---	---	---
Ap:						
Adjidaumo, silty clay, rocky	5w	---	---	---	---	3.50
ArC:						
Adjidaumo	4w	---	---	---	---	---
Summerville	7s	---	---	---	---	---
BeB:						
Berkshire	2e	4.50	90.00	18.00	4.00	---
BgC:						
Berkshire, very bouldery	6s	---	---	---	---	4.00
Lyme, very bouldery	6s	---	---	---	---	---
BkC:						
Berkshire, very bouldery	6s	---	---	---	---	---
Sunapee, very bouldery	6s	---	---	---	---	---
Bo:						
Borosaprists	8	---	---	---	---	---
Fluvaquents	5w	---	---	---	---	---
Ce:						
Carbondale, undrained	5w	---	---	---	---	---
CgB:						
Colton	3s	2.00	---	12.00	---	4.00
Duxbury	2e	2.00	---	15.00	---	4.00
CgC:						
Colton	4s	2.00	---	---	1.50	3.00
Duxbury	3e	2.00	---	---	1.50	3.00
CgD:						
Colton	7s	---	---	---	---	---
Duxbury	6e	---	---	---	---	---

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
Ck:						
Cook	4w	---	---	---	1.50	5.00
Cn:						
Cornish	3w	---	---	18.00	3.50	7.00
Cp:						
Coveytown	3w	---	---	15.00	---	5.50
Cr:						
Coveytown, very stony	5s	---	---	---	---	3.50
Cook, very stony	7s	---	---	---	---	4.00
CsB:						
Crary	2e	3.50	90.00	18.00	4.00	7.00
CtB:						
Crary, very bouldery	6s	---	---	---	---	5.50
Potsdam, very bouldery	6s	---	---	---	---	5.50
CuB:						
Croghan, sand	2w	3.00	---	16.00	3.00	5.50
CvA:						
Croghan, loamy fine sand	2w	3.00	---	16.00	3.00	5.50
CvB:						
Croghan, loamy fine sand	2w	3.00	---	16.00	3.00	5.50
Da:						
Dawson	5w	---	---	---	---	---
DAM:						
Large dams.						
Dd:						
Deford, loamy fine sand	4w	---	---	---	---	---
Df:						
Deford, mucky loamy fine sand	5w	---	---	---	---	---
DpA:						
Depeyster	2w	4.50	105.00	21.00	3.00	---
DpB:						
Depeyster	2e	4.50	105.00	21.00	3.00	---
DpC:						
Depeyster	3e	4.00	90.00	18.00	3.00	---
Dr:						
Dorval	5w	---	---	---	---	---
Du:						
Dune Land	8	---	---	---	---	---
EeB:						
Eelweir	2w	4.00	100.00	21.00	3.50	8.00

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
EmA:						
Elmwood-----------------	2w	3.50	---	20.00	4.00	8.00
EmB:						
Elmwood-----------------	2w	4.00	---	20.00	4.00	8.00
Fa:						
Fahey-------------------	2w	---	---	15.00	3.00	---
FkA:						
Flackville--------------	2w	3.50	100.00	20.00	4.00	7.50
FkB:						
Flackville--------------	2w	4.00	100.00	20.00	4.00	7.50
Fu:						
Fluvaquents, frequently flooded----------------	5w	---	---	---	---	---
Udifluvents, frequently flooded.						
GrB:						
Grenville---------------	2e	6.00	125.00	25.00	4.50	8.50
GrC:						
Grenville---------------	3e	6.00	115.00	25.00	4.50	8.50
GsD:						
Grenville, very stony---	6s	---	---	---	---	3.00
Gu:						
Guff--------------------	4w	---	---	---	---	4.50
HaA:						
Hailesboro--------------	3w	---	65.00	17.00	2.50	4.50
HaB:						
Hailesboro--------------	3w	---	65.00	17.00	2.50	4.50
Hc:						
Hannawa-----------------	4w	---	---	---	1.50	4.00
HeB:						
Heuvelton---------------	2e	4.50	100.00	20.00	---	8.50
HeC:						
Heuvelton, rolling------	3e	4.00	90.00	18.00	---	8.00
HkE:						
Heuvelton---------------	7e	---	---	---	---	---
Depeyster---------------	7e	---	---	---	---	---
HnA:						
Hogansburg--------------	2w	4.50	110.00	22.00	4.00	7.50
HnB:						
Hogansburg--------------	2e	4.50	110.00	22.00	4.00	7.50
HrB:						
Hogansburg, very stony--	6s	---	---	---	---	3.00

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
HrB:						
Grenville, very stony---	6s	---	---	---	---	3.00
IaB:						
Insula------------------	3s	---	---	14.00	3.00	6.50
InB:						
Insula------------------	6s	---	---	---	---	---
IrC:						
Insula, rolling---------	6s	---	---	---	---	---
Rock outcrop.						
IrD:						
Insula, hilly-----------	7s	---	---	---	---	---
Rock outcrop.						
KaA:						
Kalurah-----------------	2w	4.00	100.00	20.00	4.00	6.50
KaB:						
Kalurah-----------------	2e	4.00	100.00	20.00	4.00	6.50
KbB:						
Kalurah, very stony-----	6s	---	---	---	---	3.50
Pyrities, very stony----	6s	---	---	---	---	3.80
Lc:						
Lovewell----------------	2w	4.50	110.00	22.00	4.50	8.50
Ld:						
Loxley------------------	5w	---	---	---	---	---
LeC:						
Lyman-------------------	6s	---	---	---	---	---
Rock outcrop------------	8	---	---	---	---	---
LeD:						
Lyman, very bouldery----	7s	---	---	---	---	---
Rock outcrop------------	8	---	---	---	---	---
Lt:						
Lyme, very bouldery-----	7s	---	---	---	---	---
Tughill, very bouldery--	7s	---	---	---	---	---
MaA:						
Malone------------------	3w	2.00	65.00	13.00	2.50	4.50
MaB:						
Malone------------------	3w	2.00	65.00	13.00	2.50	4.50
MbB:						
Malone, very stony------	6s	---	---	---	---	---
MdB:						
Malone, undulating------	3w	---	---	10.00	2.50	4.00

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
MdB:						
Adjidaumo	4w	---	---	---	---	3.50
MeB:						
Malone, very stony	6s	---	---	---	---	---
Adjidaumo	4w	---	---	---	---	---
MfA:						
Matoon	3w	---	65.00	13.00	3.00	5.50
MfB:						
Matoon	3w	---	65.00	13.00	3.00	5.50
Mh:						
Mino	3w	2.00	65.00	13.00	2.50	4.50
Mn:						
Munuscong	5w	---	---	---	---	---
MsA:						
Muskellunge	3w	---	85.00	17.00	3.50	5.50
MsB:						
Muskellunge	3w	---	85.00	17.00	3.50	5.50
MuB:						
Muskellunge	5s	---	---	---	2.00	4.00
MwB:						
Muskellunge, undulating	3w	---	---	10.00	2.00	4.00
Adjidaumo	4w	---	---	---	---	3.50
Na:						
Naumburg	4w	---	---	12.00	---	4.00
NhA:						
Nehasne	2s	3.00	95.00	19.00	4.50	8.50
NhB:						
Nehasne	2s	3.00	90.00	19.00	4.50	8.00
NhC:						
Nehasne	3e	3.00	85.00	17.00	4.00	7.50
NoA:						
Nicholville	2w	4.50	100.00	20.00	4.00	7.50
NoB:						
Nicholville	2e	4.50	100.00	20.00	4.00	7.50
NoC:						
Nicholville, rolling	3e	4.00	80.00	16.00	3.50	6.50
NrB:						
Nicholville	6s	---	---	---	2.50	4.50
OgA:						
Ogdensburg	3w	---	---	12.00	2.00	4.00
OgB:						
Ogdensburg	3w	---	---	12.00	2.00	4.00

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
Pg:						
Pits, gravel and sand.						
Ph:						
Pits, quarry.						
PmC:						
Potsdam-----------------	3e	3.50	90.00	19.00	3.50	6.50
PoC:						
Potsdam, very bouldery--	6s	---	---	---	---	4.00
Tunbridge, very bouldery	6s	---	---	---	---	---
PoD:						
Potsdam, very bouldery--	7s	---	---	---	---	---
Tunbridge, very bouldery	7s	---	---	---	---	---
PpD:						
Potsdam, very bouldery--	7s	---	---	---	---	---
Berkshire, very bouldery	7s	---	---	---	---	---
PsC:						
Potsdam, very bouldery--	6s	---	---	---	---	5.50
Crary, very bouldery----	6s	---	---	---	---	5.50
PvB:						
Pyrities----------------	2e	4.50	110.00	22.00	4.50	7.50
PvC:						
Pyrities----------------	3e	4.00	90.00	18.00	---	6.00
PxD:						
Pyrities, very stony----	6s	---	---	---	---	3.80
PyB:						
Pyrities, rocky---------	6s	4.00	---	---	4.00	6.00
PyC:						
Pyrities, rocky---------	6s	---	---	---	---	---
PzC:						
Pyrities, very stony----	6s	---	---	---	---	3.80
Kalurah, very stony-----	6s	---	---	---	---	3.50
QwB:						
Quetico-----------------	7s	---	---	---	---	---
Rock outcrop.						
Insula.						
RaA:						
Raquette----------------	2s	4.50	110.00	22.00	4.50	7.00
RaB:						
Raquette----------------	2s	4.50	110.00	22.00	4.50	7.00

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
RaC:						
Raquette----------------	3e	4.00	100.00	20.00	4.00	7.00
Rd:						
Redwater----------------	3w	2.00	90.00	14.00	2.50	4.50
RoA:						
Roundabout--------------	4w	---	---	---	2.00	5.50
RoB:						
Roundabout--------------	4w	---	---	---	2.00	5.50
Rt:						
Runeberg----------------	5w	---	---	---	---	2.50
Ru:						
Runeberg, very stony----	5s	---	---	---	---	2.50
SaB:						
Salmon------------------	2e	5.00	90.00	18.00	4.50	8.50
SaC:						
Salmon, rolling---------	3e	5.00	90.00	18.00	4.50	8.50
Se:						
Searsport---------------	5w	---	---	---	---	---
Sg:						
Stockholm---------------	4w	---	---	13.00	2.50	4.80
ShB:						
Summerville-------------	3s	2.00	---	10.00	3.00	4.00
SkB:						
Summerville, rocky------	7s	---	---	---	---	---
Gouverneur--------------	7s	---	---	---	---	---
SlD:						
Summerville, hilly------	7s	---	---	---	---	---
Rock outcrop------------	8	---	---	---	---	---
SmC:						
Summerville, rolling----	6s	---	---	---	---	2.00
Rock outcrop------------	8	---	---	---	---	---
Nehasne, rolling--------	6s	---	---	---	---	7.50
SpB:						
Sunapee-----------------	2w	3.50	90.00	18.00	3.50	---
SsB:						
Sunapee, very bouldery--	6s	---	---	---	---	---
Berkshire, very bouldery	6s	---	---	---	---	---
Sw:						
Swanton-----------------	4w	---	90.00	16.00	3.00	6.00
TdA:						
Trout River-------------	3s	3.00	---	12.00	2.50	5.00

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
TdB:						
Trout River-------------	3s	3.00	---	12.00	2.50	5.00
TfB:						
Trout River, very stony-	6s	---	---	---	---	---
Fahey, very stony-------	6s	---	---	---	---	---
TuD:						
Tunbridge---------------	7s	---	---	---	---	---
Lyman-------------------	7s	---	---	---	---	---
TwC:						
Tunbridge, rolling------	7s	---	---	---	---	---
Lyman, rolling----------	7s	---	---	---	---	---
Dawson------------------	7w	---	---	---	---	---
Ua:						
Udipsamments, smoothed--	6s	---	---	---	---	---
Ue:						
Udorthents, loamy-------	6s	---	---	---	---	---
Uf:						
Udorthents, clayey------	6s	---	---	---	---	---
Ug:						
Udorthents, mine waste, acid------------------	8	---	---	---	---	---
Uh:						
Udorthents, mine waste, nonacid---------------	7s	---	---	---	---	---
Un:						
Udorthents, refuse substratum-------------	7s	---	---	---	---	---
Ur:						
Urban land.						
W:						
Water.						
WaA:						
Waddington--------------	3s	3.50	90.00	18.00	3.00	7.00
WaB:						
Waddington--------------	3s	3.50	90.00	18.00	3.00	7.00
WaC:						
Waddington, rolling-----	3e	3.50	70.00	14.00	3.00	7.00
WaD:						
Waddington--------------	6e	---	---	---	---	2.50
WdB:						
Waddington, very cobbly sandy loam-------------	3s	3.50	80.00	16.00	3.00	6.50

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
		Tons	Bu	Tons	Tons	AUM
Wg:						
Wegatchie----------------	5w	---	---	10.00	3.00	5.50

Table 7.--Acreage by Capability Class and Subclass

Capability class	Capability subclass	Acreage
Unclassified	---	132,576
1	---	787
2	e	77,606
2	w	56,576
2	s	6,975
3	e	43,972
3	w	122,211
3	s	25,428
4	e	15,643
4	w	127,745
4	s	45,336
5	w	154,424
5	s	16,879
6	e	34,587
6	s	340,431
7	e	14,703
7	w	5,360
7	s	183,457
8	---	31,152

Table 8.--Forestland Management and Productivity

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
021:										
Dawson------------------	2W	Slight	Severe	Severe	Severe	Severe	black spruce--------	15	29	---
							tamarack------------	---	---	
Fluvaquents.										
Loxley------------------	2W	Slight	Severe	Severe	Severe	Severe	balsam fir----------	---	---	---
							black spruce--------	15	29	
							tamarack------------	---	---	
023:										
Loxley------------------	2W	Slight	Severe	Severe	Severe	Severe	balsam fir----------	---	---	---
							black spruce--------	15	29	
							tamarack------------	---	---	
Dawson------------------	2W	Slight	Severe	Severe	Severe	Severe	black spruce--------	15	29	---
							tamarack------------	---	---	
363A:										
Adams-------------------	3S	Slight	Slight	Severe	Slight	---	American beech------	---	---	European larch, eastern white pine, red pine
							eastern hemlock-----	---	---	
							eastern white pine--	66	114	
							red maple-----------	---	---	
							sugar maple---------	61	43	
363B:										
Adams-------------------	3S	Slight	Slight	Severe	Slight	---	American beech------	---	---	European larch, eastern white pine, red pine
							eastern hemlock-----	---	---	
							eastern white pine--	66	114	
							red maple-----------	---	---	
							sugar maple---------	61	43	
363D:										
Adams-------------------	3S	Slight	Moderate	Severe	Slight	---	American beech------	---	---	European larch, eastern white pine, red pine
							eastern hemlock-----	---	---	
							eastern white pine--	66	114	
							red maple-----------	---	---	
							sugar maple---------	61	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
365:										
Naumburg	2W	Slight	Moderate	Severe	Moderate	---	American elm	---	---	Norway spruce, eastern hemlock, eastern white pine, white spruce
							black ash	---	---	
							eastern hemlock	---	---	
							eastern white pine	60	100	
							green ash	---	---	
							paper birch	---	---	
							red maple	60	43	
							sugar maple	55	29	
							white spruce	50	114	
							yellow birch	---	---	
Croghan	10S	Slight	Slight	Moderate	Slight	---	eastern white pine	65	143	European larch, Norway spruce, eastern white pine
							red maple	---	---	
							sugar maple	55	29	
376A:										
Colton	3S	Slight	Slight	Severe	Slight	---	eastern white pine	62	114	European larch, eastern white pine, red pine
							red pine	52	86	
							red spruce	39	86	
							sugar maple	61	43	
							white spruce	52	114	
Duxbury	8A	Slight	Slight	Slight	Slight	Slight	balsam fir	---	---	eastern white pine, red pine
							eastern hemlock	---	---	
							eastern white pine	65	114	
							red maple	---	---	
							red pine	---	---	
							red spruce	---	---	
							sugar maple	55	29	
							white spruce	---	---	
Adams	3S	Slight	Slight	Severe	Slight	---	American beech	---	---	European larch, eastern white pine, red pine
							eastern hemlock	---	---	
							eastern white pine	66	114	
							red maple	---	---	
							sugar maple	61	43	
376C:										
Colton	3S	Slight	Slight	Severe	Slight	---	eastern white pine	62	114	European larch, eastern white pine, red pine
							red pine	52	86	
							red spruce	39	86	
							sugar maple	61	43	
							white spruce	52	114	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
376C:										
Duxbury-----------------	8A	Slight	Slight	Slight	Slight	Slight	balsam fir----------	---	---	eastern white pine, red pine
							eastern hemlock-----	---	---	
							eastern white pine--	65	114	
							red maple-----------	---	---	
							red pine------------	---	---	
							red spruce----------	---	---	
							sugar maple---------	55	29	
							white spruce--------	---	---	
Adams-------------------	3S	Slight	Slight	Severe	Slight	---	American beech------	---	---	European larch, eastern white pine, red pine
							eastern hemlock-----	---	---	
							eastern white pine--	66	114	
							red maple-----------	---	---	
							sugar maple---------	61	43	
376D:										
Colton------------------	3S	Slight	Moderate	Severe	Slight	---	eastern white pine--	62	114	European larch, eastern white pine, red pine
							red pine------------	52	86	
							red spruce----------	39	86	
							sugar maple---------	61	43	
							white spruce--------	52	114	
Duxbury-----------------	8R	Slight	Moderate	Slight	Slight	Slight	balsam fir----------	---	---	eastern white pine, red pine
							eastern hemlock-----	---	---	
							eastern white pine--	65	114	
							red maple-----------	---	---	
							red pine------------	---	---	
							red spruce----------	---	---	
							sugar maple---------	55	29	
							white spruce--------	---	---	
Adams-------------------	3S	Slight	Moderate	Severe	Slight	---	American beech------	---	---	European larch, eastern white pine, red pine
							eastern hemlock-----	---	---	
							eastern white pine--	66	114	
							red maple-----------	---	---	
							sugar maple---------	61	43	
380B:										
Colton------------------	3S	Slight	Slight	Severe	Slight	---	eastern white pine--	62	114	European larch, eastern white pine, red pine
							red pine------------	52	86	
							red spruce----------	39	86	
							sugar maple---------	61	43	
							white spruce--------	52	114	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
380B:										
Duxbury	8A	Slight	Slight	Slight	Slight	Slight	balsam fir	---	---	eastern white pine, red pine
							eastern hemlock	---	---	
							eastern white pine	65	114	
							red maple	---	---	
							red pine	---	---	
							red spruce	---	---	
							sugar maple	55	29	
							white spruce	---	---	
Dawson	2W	Slight	Severe	Severe	Severe	Severe	black spruce	15	29	---
							tamarack	---	---	
380D:										
Colton	3S	Slight	Moderate	Severe	Slight	---	eastern white pine	62	114	European larch, eastern white pine, red pine
							red pine	52	86	
							red spruce	39	86	
							sugar maple	61	43	
							white spruce	52	114	
Duxbury	8R	Slight	Moderate	Slight	Slight	Slight	balsam fir	---	---	eastern white pine, red pine
							eastern hemlock	---	---	
							eastern white pine	65	114	
							red maple	---	---	
							red pine	---	---	
							red spruce	---	---	
							sugar maple	55	29	
							white spruce	---	---	
Dawson	2W	Slight	Severe	Severe	Severe	Severe	black spruce	15	29	---
							tamarack	---	---	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
643C:										
Berkshire, very bouldery	9A	Slight	Slight	Slight	Slight	---	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							paper birch	60	57	
							red pine	65	114	
							red spruce	50	114	
							sugar maple	52	29	
							white ash	62	43	
							white spruce	55	129	
							yellow birch	55	29	
							sugar maple	52	29	
							white ash	62	43	
							white spruce	55	129	
							yellow birch	55	29	
643D:										
Berkshire, very bouldery	9R	Slight	Moderate	Slight	Slight	---	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							paper birch	60	57	
							red pine	65	114	
							red spruce	50	114	
							sugar maple	52	29	
							white ash	62	43	
							white spruce	55	129	
							yellow birch	55	29	
644C:										
Berkshire, rolling, very bouldery	9A	Slight	Slight	Slight	Slight	---	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							paper birch	60	57	
							red pine	65	114	
							red spruce	50	114	
Lyme, very bouldery	8W	Slight	Severe	Moderate	Severe	Severe	balsam fir	50	114	eastern white pine, white spruce
							eastern white pine	65	114	
							red maple	65	43	
							red spruce	50	114	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
644D:										
Berkshire, hilly, very bouldery	9R	Slight	Moderate	Slight	Slight	---	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							paper birch	60	57	
							red pine	65	114	
							red spruce	50	114	
							sugar maple	52	29	
							white ash	62	43	
							white spruce	55	129	
							yellow birch	55	29	
Lyme, very bouldery	8W	Slight	Severe	Moderate	Severe	Severe	balsam fir	50	114	eastern white pine, white spruce
							eastern white pine	65	114	
							red maple	65	43	
							red spruce	50	114	
709B:										
Adirondack, very bouldery	3W	Slight	Severe	Slight	Slight	Severe	red maple	65	43	Norway spruce, balsam fir, red spruce, white spruce
							white ash	---	---	
							yellow birch	50	29	
Tughill, very bouldery	2W	Slight	Severe	Severe	Severe	---	balsam fir	45	86	balsam fir, eastern white pine
							eastern hemlock	50	---	
							red maple	50	29	
							red spruce	35	72	
Lyme, very bouldery	8W	Slight	Severe	Moderate	Severe	Severe	balsam fir	50	114	eastern white pine, white spruce
							eastern white pine	65	114	
							red maple	65	43	
							red spruce	50	114	
741C:										
Potsdam, very bouldery	3R	Moderate	Slight	Slight	Slight	---	American beech	---	---	European larch, Norway spruce, eastern white pine, red pine, white spruce
							eastern hemlock	---	---	
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
741C:										
Tunbridge, very bouldery	3A	Slight	Slight	Slight	Moderate	Slight	eastern white pine	50	86	eastern white pine, red spruce, white spruce
							northern red oak	---	---	
							sugar maple	60	43	
Crary, very bouldery	3R	Moderate	Moderate	Slight	Slight	---	American beech	---	---	European larch, Norway spruce
							black ash	75	43	
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							yellow birch	70	43	
741D:										
Potsdam, very bouldery	3R	Severe	Moderate	Slight	Slight	---	American beech	---	---	European larch, Norway spruce, eastern white pine, red pine, white spruce
							eastern hemlock	---	---	
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	
Tunbridge, very bouldery	3R	Moderate	Moderate	Slight	Moderate	Slight	eastern white pine	50	86	eastern white pine, red spruce, white spruce
							northern red oak	---	---	
							sugar maple	60	43	
743C:										
Potsdam, very bouldery	3R	Moderate	Slight	Slight	Slight	---	American beech	---	---	European larch, Norway spruce, eastern white pine, red pine, white spruce
							eastern hemlock	---	---	
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	
743D:										
Potsdam, very bouldery	3R	Severe	Moderate	Slight	Slight	---	American beech	---	---	European larch, Norway spruce, eastern white pine, red pine, white spruce
							eastern hemlock	---	---	
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
745C:										
Crary, very bouldery----	3R	Moderate	Moderate	Slight	Slight	---	American beech------	---	---	European larch,
							black ash----------	75	43	Norway spruce
							eastern white pine--	75	143	
							northern red oak----	70	57	
							sugar maple---------	65	43	
							yellow birch--------	70	43	
Potsdam, very bouldery--	3R	Moderate	Slight	Slight	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	Norway spruce,
							eastern white pine--	75	143	eastern white
							northern red oak----	70	57	pine, red pine,
							sugar maple---------	65	43	white spruce
							white ash----------	75	43	
747B:										
Crary, very bouldery----	3W	Slight	Moderate	Slight	Slight	---	American beech------	---	---	European larch,
							black ash----------	75	43	Norway spruce
							eastern white pine--	75	143	
							northern red oak----	70	57	
							sugar maple---------	65	43	
							yellow birch--------	70	43	
Adirondack, very bouldery---------------	3W	Slight	Severe	Slight	Slight	Severe	red maple----------	65	43	Norway spruce,
							white ash----------	---	---	balsam fir, red
							yellow birch--------	50	29	spruce, white
										spruce
807:										
Udorthents, mine waste.										
831C:										
Tunbridge, very bouldery---------------	3A	Slight	Slight	Slight	Moderate	Slight	eastern white pine--	50	86	eastern white pine,
							northern red oak----	---	---	red spruce, white
							sugar maple---------	60	43	spruce
Lyman, very bouldery----	2D	Slight	Slight	Moderate	Severe	Moderate	balsam fir----------	60	114	balsam fir, eastern
							red spruce----------	40	86	white pine, red
							sugar maple---------	50	29	pine, white spruce
							white spruce--------	55	129	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordi-nation symbol	Management concerns: Erosion hazard	Management concerns: Equip-ment limita-tion	Management concerns: Seedling mortal-ity	Management concerns: Wind-throw hazard	Management concerns: Plant competi-tion	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
831D:										
Tunbridge, very bouldery	3R	Moderate	Moderate	Slight	Moderate	Slight	eastern white pine	50	86	eastern white pine, red spruce, white spruce
							northern red oak	---	---	
							sugar maple	60	43	
Lyman, very bouldery	2D	Moderate	Moderate	Moderate	Severe	Moderate	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce	40	86	
							sugar maple	50	29	
							white spruce	55	129	
831F:										
Tunbridge, very bouldery	3R	Severe	Severe	Slight	Moderate	Slight	eastern white pine	50	86	eastern white pine, red spruce, white spruce
							northern red oak	---	---	
							sugar maple	60	43	
Lyman, very bouldery	2R	Severe	Severe	Moderate	Severe	Moderate	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce	40	86	
							sugar maple	50	29	
							white spruce	55	129	
833C:										
Tunbridge, very bouldery	3A	Slight	Slight	Slight	Moderate	Slight	eastern white pine	50	86	eastern white pine, red spruce, white spruce
							northern red oak	---	---	
							sugar maple	60	43	
Adirondack, very bouldery	3W	Slight	Severe	Slight	Slight	Severe	red maple	65	43	Norway spruce, balsam fir, red spruce, white spruce
							white ash	---	---	
							yellow birch	50	29	
Lyman, very bouldery	2D	Slight	Slight	Moderate	Severe	Moderate	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce	40	86	
							sugar maple	50	29	
							white spruce	55	129	
835C:										
Tunbridge, very bouldery	3A	Slight	Slight	Slight	Moderate	Slight	eastern white pine	50	86	eastern white pine, red spruce, white spruce
							northern red oak	---	---	
							sugar maple	60	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
835C:										
Borosaprists.										
Ricker, very bouldery---	2D	Slight	Slight	Moderate	Severe	Moderate	Arizona mountainash-	---	---	---
							balsam fir----------	20	57	
							paper birch---------	---	---	
							red spruce----------	20	29	
							yellow birch--------	---	---	
861C:										
Lyman-------------------	2D	Slight	Slight	Moderate	Severe	Moderate	balsam fir----------	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce----------	40	86	
							sugar maple---------	50	29	
							white spruce--------	55	129	
Ricker, very bouldery---	2D	Slight	Slight	Moderate	Severe	Moderate	Arizona mountainash-	---	---	---
							balsam fir----------	20	57	
							paper birch---------	---	---	
							red spruce----------	20	29	
							yellow birch--------	---	---	
Rock outcrop, very bouldery.										
861D:										
Lyman, very bouldery----	2D	Moderate	Moderate	Moderate	Severe	Moderate	balsam fir----------	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce----------	40	86	
							sugar maple---------	50	29	
							white spruce--------	55	129	
Ricker, very bouldery---	2D	Moderate	Moderate	Moderate	Severe	---	Arizona mountainash-	---	---	---
							balsam fir----------	20	57	
							paper birch---------	---	---	
							red spruce----------	20	29	
							yellow birch--------	---	---	
Rock outcrop.										
861F:										
Lyman, very bouldery----	2R	Severe	Severe	Moderate	Severe	Moderate	balsam fir----------	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce----------	40	86	
							sugar maple---------	50	29	
							white spruce--------	55	129	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
861F:										
Ricker, very bouldery---	2R	Severe	Severe	Severe	Severe	---	Arizona mountainash-	---	---	---
							balsam fir----------	20	57	
							paper birch---------	---	---	
							red spruce----------	20	29	
							yellow birch--------	---	---	
Rock outcrop.										
891F:										
Rock outcrop.										
Ricker, very bouldery---	2R	Severe	Severe	Severe	Severe	---	Arizona mountainash-	---	---	---
							balsam fir----------	20	57	
							paper birch---------	---	---	
							red spruce----------	20	29	
							yellow birch--------	---	---	
Lyman, very bouldery----	2R	Severe	Severe	Moderate	Severe	Moderate	balsam fir----------	60	114	balsam fir, eastern
							red spruce----------	40	86	white pine, red
							sugar maple---------	50	29	pine, white spruce
							white spruce--------	55	129	
AaB:										
Adams, sand------------	3S	Slight	Slight	Severe	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	eastern white
							eastern white pine--	66	114	pine, red pine
							red maple-----------	---	---	
							sugar maple---------	61	43	
AaC:										
Adams, sand------------	3S	Slight	Slight	Severe	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	eastern white
							eastern white pine--	66	114	pine, red pine
							red maple-----------	---	---	
							sugar maple---------	61	43	
AaD:										
Adams, sand------------	3S	Slight	Moderate	Severe	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	eastern white
							eastern white pine--	66	114	pine, red pine
							red maple-----------	---	---	
							sugar maple---------	61	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
AdB:										
Adams, loamy fine sand--	3S	Slight	Slight	Severe	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	eastern white
							eastern white pine--	66	114	pine, red pine
							red maple-----------	---	---	
							sugar maple---------	61	43	
AdC:										
Adams, loamy fine sand--	3S	Slight	Slight	Severe	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	eastern white
							eastern white pine--	66	114	pine, red pine
							red maple-----------	---	---	
							sugar maple---------	61	43	
Ak:										
Adjidaumo, silty clay---	2W	Slight	Severe	Severe	Severe	---	American elm--------	---	---	eastern arborvitae,
							red maple-----------	50	29	eastern white
							white ash-----------	---	---	pine, white spruce
Am:										
Adjidaumo, mucky silty clay-------------------	2W	Slight	Severe	Severe	Severe	---	American elm--------	---	---	eastern arborvitae,
							red maple-----------	50	29	eastern white
							white ash-----------	---	---	pine, white spruce
Ao:										
Adjidaumo, flooded------	2W	Slight	Severe	Severe	Severe	---	American elm--------	---	---	eastern arborvitae,
							red maple-----------	50	29	eastern white
							white ash-----------	---	---	pine, white spruce
Ap:										
Adjidaumo, silty clay, rocky------------------	2W	Slight	Severe	Severe	Severe	---	American elm--------	---	---	eastern arborvitae,
							red maple-----------	50	29	eastern white
							white ash-----------	---	---	pine, white spruce
ArC:										
Adjidaumo---------------	2W	Slight	Severe	Severe	Severe	---	American elm--------	---	---	eastern arborvitae,
							red maple-----------	50	29	eastern white
							white ash-----------	---	---	pine, white spruce

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
ArC:										
Summerville	2D	Slight	Moderate	Moderate	Severe	Slight	American beech	---	---	eastern arborvitae, eastern white pine, white spruce
							balsam fir	---	---	
							basswood	---	---	
							eastern arborvitae	---	---	
							eastern white pine	48	86	
							paper birch	53	57	
							quaking aspen	---	---	
							red pine	---	---	
							sugar maple	57	29	
BeB:										
Berkshire	9A	Slight	Slight	Slight	Slight	---	balsam fir	60	114	Douglas fir, balsam fir, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							paper birch	60	57	
							red pine	65	114	
							red spruce	50	114	
							sugar maple	52	29	
							white ash	62	43	
							white spruce	55	129	
							yellow birch	55	29	
BgC:										
Berkshire, very bouldery	9A	Slight	Slight	Slight	Slight	---	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							paper birch	60	57	
							red pine	65	114	
							red spruce	50	114	
							sugar maple	52	29	
							white ash	62	43	
							white spruce	55	129	
							yellow birch	55	29	
Lyme, very bouldery	8W	Slight	Severe	Moderate	Severe	Severe	balsam fir	50	114	eastern white pine, white spruce
							eastern white pine	65	114	
							red maple	65	43	
							red spruce	50	114	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
BkC:										
Berkshire, very bouldery	9A	Slight	Slight	Slight	Slight	---	balsam fir	60	114	balsam fir, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							paper birch	60	57	
							red pine	65	114	
							red spruce	50	114	
							sugar maple	52	29	
							white ash	62	43	
							white spruce	55	129	
							yellow birch	55	29	
Sunapee, very bouldery	3A	Slight	Slight	Slight	Slight	Moderate	balsam fir	55	114	European larch, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							northern red oak	70	57	
							red spruce	45	100	
							sugar maple	67	43	
							white spruce	55	129	
Bo:										
Borosaprists.										
Fluvaquents.										
Ce:										
Carbondale, undrained	5W	Slight	Severe	Severe	Severe	Severe	balsam fir	40	72	---
							black spruce	15	29	
							eastern arborvitae	---	---	
							paper birch	---	---	
							silver maple	78	29	
							tamarack	---	---	
CgB:										
Colton	3S	Slight	Slight	Severe	Slight	---	eastern white pine	62	114	European larch, eastern white pine, red pine
							red pine	52	86	
							red spruce	39	86	
							sugar maple	61	43	
							white spruce	52	114	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
CgB:										
Duxbury	8A	Slight	Slight	Slight	Slight	Slight	balsam fir	---	---	eastern white pine, red pine
							eastern hemlock	---	---	
							eastern white pine	65	114	
							red maple	---	---	
							red pine	---	---	
							red spruce	---	---	
							sugar maple	55	29	
							white spruce	---	---	
CgC:										
Colton	3S	Slight	Slight	Severe	Slight	---	eastern white pine	62	114	European larch, eastern white pine, red pine
							red pine	52	86	
							red spruce	39	86	
							sugar maple	61	43	
							white spruce	52	114	
Duxbury	8A	Slight	Slight	Slight	Slight	Slight	balsam fir	---	---	eastern white pine, red pine
							eastern hemlock	---	---	
							eastern white pine	65	114	
							red maple	---	---	
							red pine	---	---	
							red spruce	---	---	
							sugar maple	55	29	
							white spruce	---	---	
CgD:										
Colton	3S	Slight	Moderate	Severe	Slight	---	eastern white pine	62	114	European larch, eastern white pine, red pine
							red pine	52	86	
							red spruce	39	86	
							sugar maple	61	43	
							white spruce	52	114	
Duxbury	8R	Slight	Moderate	Slight	Slight	Slight	balsam fir	---	---	eastern white pine, red pine
							eastern hemlock	---	---	
							eastern white pine	65	114	
							red maple	---	---	
							red pine	---	---	
							red spruce	---	---	
							sugar maple	55	29	
							white spruce	---	---	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
Ck:										
Cook--------------------	6W	Slight	Severe	Severe	Severe	Severe	eastern white pine--	55	86	eastern arborvitae
							red maple-----------	50	29	
Cn:										
Cornish-----------------	8W	Slight	Moderate	Severe	Moderate	Severe	American elm--------	---	---	European larch, black spruce, red spruce, tamarack
							balsam fir----------	55	114	
							eastern white pine--	65	114	
							gray birch----------	---	---	
							red maple-----------	57	29	
							red spruce----------	45	100	
Cp:										
Coveytown---------------	2W	Slight	Moderate	Moderate	Moderate	---	eastern white pine--	65	114	Norway spruce, eastern white pine, white spruce
							red maple-----------	55	29	
Cr:										
Coveytown, very stony---	2W	Slight	Moderate	Moderate	Moderate	---	eastern white pine--	65	114	Norway spruce, white spruce
							red maple-----------	55	29	
Cook, very stony--------	6W	Slight	Severe	Severe	Severe	Severe	eastern white pine--	55	86	eastern arborvitae
							red maple-----------	50	29	
CsB:										
Crary-------------------	3W	Slight	Moderate	Slight	Slight	---	American beech------	---	---	European larch, Norway spruce, eastern white pine, white spruce
							black ash-----------	75	43	
							eastern white pine--	75	143	
							northern red oak----	70	57	
							sugar maple---------	65	43	
							yellow birch--------	70	43	
CtB:										
Crary, very bouldery----	3W	Slight	Moderate	Slight	Slight	---	American beech------	---	---	European larch, Norway spruce
							black ash-----------	75	43	
							eastern white pine--	75	143	
							northern red oak----	70	57	
							sugar maple---------	65	43	
							yellow birch--------	70	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber (cu ft/ac)	Trees to manage
CtB:										
Potsdam, very bouldery	3A	Slight	Slight	Slight	Slight	---	American beech	---	---	European larch,
							eastern hemlock	---	---	Norway spruce,
							eastern white pine	75	143	eastern white
							northern red oak	70	57	pine, red pine,
							sugar maple	65	43	white spruce
							white ash	75	43	
CuB:										
Croghan, sand	10S	Slight	Slight	Moderate	Slight	---	eastern white pine	65	143	European larch,
							red maple	---	---	Norway spruce,
							sugar maple	55	29	eastern white pine
CvA:										
Croghan, loamy fine sand	10S	Slight	Slight	Moderate	Slight	---	eastern white pine	65	143	European larch,
							red maple	---	---	Norway spruce,
							sugar maple	55	29	eastern white pine
CvB:										
Croghan, loamy fine sand	10S	Slight	Slight	Moderate	Slight	---	eastern white pine	65	143	European larch,
							red maple	---	---	Norway spruce,
							sugar maple	55	29	eastern white pine
Da:										
Dawson	2W	Slight	Severe	Severe	Severe	Severe	black spruce	15	29	---
							tamarack	---	---	
DAM:										
Large dams.										
Dd:										
Deford, loamy fine sand	4W	Slight	Severe	Severe	Severe	Severe	American basswood	---	---	eastern white pine,
							balsam fir	---	---	white spruce
							eastern arborvitae	---	---	
							quaking aspen	60	57	
							red maple	64	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to manage
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									cu ft/ac	
Df:										
Deford, mucky loamy fine sand	4W	Slight	Severe	Severe	Severe	Severe	American basswood	---	---	eastern white pine, white spruce
							balsam fir	---	---	
							eastern arborvitae	---	---	
							quaking aspen	60	57	
							red maple	64	43	
DpA:										
Depeyster	3A	Slight	Slight	Slight	Slight	---	American basswood	75	43	Douglas fir, European larch, Norway spruce, Scotch pine, balsam fir, eastern white pine, white spruce
							black cherry	80	57	
							northern red oak	80	57	
							sugar maple	70	43	
							white ash	85	57	
DpB:										
Depeyster	3A	Slight	Slight	Slight	Slight	---	American basswood	75	43	Douglas fir, European larch, Norway spruce, Scotch pine, balsam fir, eastern white pine, white spruce
							black cherry	80	57	
							northern red oak	80	57	
							sugar maple	70	43	
							white ash	85	57	
DpC:										
Depeyster	3R	Moderate	Slight	Slight	Slight	---	American basswood	75	43	Douglas fir, European larch, Norway spruce, Scotch pine, balsam fir, eastern white pine, white spruce
							black cherry	80	57	
							northern red oak	80	57	
							sugar maple	70	43	
							white ash	85	57	
Dr:										
Dorval	2W	Slight	Severe	Severe	Severe	---	American elm	---	---	eastern arborvitae, white spruce
							eastern arborvitae	---	---	
							red maple	50	29	
							white ash	---	---	
Du:										
Dune land.										

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
EeB:										
Eelweir	3A	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	75	143	European larch, Norway spruce, eastern white pine, red pine, white spruce
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	80	57	
EmA:										
Elmwood	8A	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	66	114	European larch, eastern white pine, red pine, white spruce
							northern red oak	70	57	
							sugar maple	62	43	
EmB:										
Elmwood	8A	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	66	114	European larch, eastern white pine, red pine, white spruce
							northern red oak	70	57	
							sugar maple	62	43	
Fa:										
Fahey	8A	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114	European larch, eastern white pine, red pine, white spruce
							northern red oak	60	43	
							red pine	65	114	
							red spruce	45	100	
FkA:										
Flackville	3S	Slight	Slight	Slight	Slight	---	eastern white pine	75	143	Norway spruce, eastern white pine, white spruce
							northern red oak	70	57	
							sugar maple	65	43	
FkB:										
Flackville	3S	Slight	Slight	Slight	Slight	---	eastern white pine	75	143	Norway spruce, eastern white pine, white spruce
							northern red oak	70	57	
							sugar maple	65	43	
Fu:										
Fluvaquents, frequently flooded.										
Udifluvents, frequently flooded.										

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordi-nation symbol	Management concerns: Erosion hazard	Equip-ment limita-tion	Seedling mortal-ity	Wind-throw hazard	Plant competi-tion	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
GrB:										
Grenville---------------	3A	Slight	Slight	Slight	Slight	Slight	American basswood---	80	57	Austrian pine,
							eastern white pine--	85	143	Douglas fir,
							northern red oak----	80	57	European larch,
							sugar maple---------	70	43	Norway spruce,
										black walnut,
										eastern white pine
GrC:										
Grenville---------------	3A	Slight	Slight	Slight	Slight	Slight	American basswood---	80	57	Austrian pine,
							eastern white pine--	85	143	Douglas fir,
							northern red oak----	80	57	European larch,
							sugar maple---------	70	43	Norway spruce,
										black walnut,
										eastern white pine
GsD:										
Grenville, very stony---	3X	Slight	Moderate	Slight	Slight	Slight	American basswood---	80	57	Austrian pine,
							eastern white pine--	85	143	Douglas fir,
							northern red oak----	80	57	European larch,
							sugar maple---------	70	43	Norway spruce,
										black walnut,
										eastern white pine
Gu:										
Guff--------------------	2W	Slight	Severe	Severe	Severe	Severe	American elm--------	---	---	---
							red maple-----------	---	29	
							white ash-----------	---	---	
HaA:										
Hailesboro--------------	3W	Slight	Moderate	Moderate	Moderate	---	eastern hemlock-----	65	---	European larch,
							northern red oak----	70	57	Norway spruce,
							red maple-----------	65	43	eastern white
							white ash-----------	70	43	pine, white spruce
HaB:										
Hailesboro--------------	3W	Slight	Moderate	Moderate	Moderate	---	eastern hemlock-----	65	---	European larch,
							northern red oak----	70	57	Norway spruce,
							red maple-----------	65	43	eastern white
							white ash-----------	70	43	pine, white spruce
Hc:										
Hannawa-----------------	6W	Slight	Severe	Moderate	Severe	Severe	balsam fir----------	40	86	balsam fir, white
							eastern arborvitae--	40	57	spruce

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
HeB:										
Heuvelton	2A	Slight	Slight	Slight	Slight	---	eastern white pine	---	---	Scotch pine, eastern white pine, white spruce
							northern red oak	---	---	
							sugar maple	---	---	
							white ash	---	---	
HeC:										
Heuvelton, rolling	2R	Moderate	Slight	Slight	Slight	---	eastern white pine	---	---	Scotch pine, eastern white pine, white spruce
							northern red oak	---	---	
							sugar maple	---	---	
							white ash	---	---	
HkE:										
Heuvelton	2R	Severe	Moderate	Slight	Slight	---	eastern white pine	---	---	Scotch pine, eastern white pine, white spruce
							northern red oak	---	---	
							sugar maple	---	---	
							white ash	---	---	
Depeyster	3R	Severe	Moderate	Slight	Slight	---	American basswood	75	43	Douglas fir, European larch, Norway spruce, Scotch pine, balsam fir, eastern white pine, white spruce
							black cherry	80	57	
							northern red oak	80	57	
							sugar maple	70	43	
							white ash	85	57	
HnA:										
Hogansburg	3A	Slight	Slight	Slight	Slight	---	American basswood	---	---	European larch, Norway spruce, eastern white pine, white spruce
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	
HnB:										
Hogansburg	3A	Slight	Slight	Slight	Slight	---	American basswood	---	---	European larch, Norway spruce, eastern white pine, white spruce
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
HrB:										
Hogansburg, very stony	3A	Slight	Slight	Slight	Slight	---	American basswood	---	---	European larch, Norway spruce, eastern white pine, white spruce
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	
Grenville, very stony	3X	Slight	Slight	Slight	Slight	Slight	American basswood	80	57	Austrian pine, Douglas fir, European larch, Norway spruce, black walnut, eastern white pine
							eastern white pine	85	143	
							northern red oak	80	57	
							sugar maple	70	43	
IaB:										
Insula	2D	Slight	Slight	Severe	Moderate	---	northern red oak	47	29	eastern white pine, red pine
							sugar maple	56	29	
InB:										
Insula	2D	Slight	Slight	Severe	Moderate	---	northern red oak	47	29	eastern white pine, red pine
							sugar maple	56	29	
IrC:										
Insula, rolling	2D	Slight	Slight	Severe	Moderate	---	northern red oak	---	29	eastern white pine, red pine
							sugar maple	---	86	
Rock outcrop.										
IrD:										
Insula, hilly	2D	Slight	Moderate	Severe	Moderate	---	northern red oak	---	29	eastern white pine, red pine
							sugar maple	---	86	
Rock outcrop.										
KaA:										
Kalurah	3A	Slight	Slight	Slight	Slight	---	northern red oak	75	57	Norway spruce, Scotch pine, eastern white pine, red pine
							sugar maple	65	43	
							white oak	70	57	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
KaB:										
Kalurah-----------------	3A	Slight	Slight	Slight	Slight	---	northern red oak----	75	57	Norway spruce, Scotch pine, eastern white pine, red pine
							sugar maple---------	65	43	
							white oak-----------	70	57	
KbB:										
Kalurah, very stony-----	4A	Slight	Slight	Slight	Slight	---	northern red oak----	75	57	European larch, Norway spruce, eastern white pine, white spruce
							sugar maple---------	65	---	
							white oak-----------	70	---	
Pyrities, very stony----	3A	Slight	Slight	Slight	Slight	---	American beech------	---	---	European larch, Norway spruce, eastern white pine, red pine
							northern red oak----	---	---	
							sugar maple---------	65	43	
							white oak-----------	---	---	
Lc:										
Lovewell----------------	10A	Slight	Slight	Slight	Slight	Severe	American elm--------	---	---	European larch, eastern white pine, red spruce, white spruce
							balsam fir----------	65	129	
							eastern white pine--	75	143	
							red maple-----------	62	43	
							red spruce----------	55	129	
							white spruce--------	65	143	
Ld:										
Loxley------------------	2W	Slight	Severe	Severe	Severe	Severe	balsam fir----------	---	---	---
							black spruce--------	15	29	
							tamarack------------	---	---	
LeC:										
Lyman-------------------	2D	Slight	Slight	Moderate	Severe	Moderate	balsam fir----------	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce----------	40	86	
							sugar maple---------	50	29	
							white spruce--------	55	129	
Rock outcrop.										
LeD:										
Lyman, very bouldery----	2D	Moderate	Moderate	Moderate	Severe	Moderate	balsam fir----------	60	114	balsam fir, eastern white pine, red pine, white spruce
							red spruce----------	40	86	
							sugar maple---------	50	29	
							white spruce--------	55	129	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
LeD:										
Rock outcrop.										
Lt:										
Lyme, very bouldery-----	8W	Slight	Severe	Moderate	Severe	Severe	balsam fir----------	50	114	eastern white pine, white spruce
							eastern white pine--	65	114	
							red maple-----------	65	43	
							red spruce----------	50	114	
Tughill, very bouldery--	2W	Slight	Severe	Severe	Severe	---	balsam fir----------	45	86	balsam fir, eastern white pine
							eastern hemlock-----	50	---	
							red maple-----------	50	29	
							red spruce----------	35	72	
MaA:										
Malone------------------	3W	Slight	Moderate	Moderate	Moderate	---	eastern arborvitae--	---	---	Norway spruce, eastern white pine, white spruce
							eastern hemlock-----	---	---	
							northern red oak----	---	---	
							red maple-----------	70	43	
MaB:										
Malone------------------	3W	Slight	Moderate	Moderate	Moderate	---	eastern arborvitae--	---	---	Norway spruce, eastern white pine, white spruce
							eastern hemlock-----	---	---	
							northern red oak----	---	---	
							red maple-----------	70	43	
MbB:										
Malone, very stony------	3W	Slight	Moderate	Moderate	Moderate	---	eastern arborvitae--	---	---	Norway spruce, eastern white pine, white spruce
							eastern hemlock-----	---	---	
							northern red oak----	---	---	
							red maple-----------	70	43	
MdB:										
Malone, undulating------	3W	Slight	Moderate	Moderate	Moderate	---	eastern arborvitae--	---	---	Norway spruce, eastern white pine, white spruce
							eastern hemlock-----	---	---	
							northern red oak----	---	---	
							red maple-----------	70	43	
Adjidaumo---------------	2W	Slight	Severe	Severe	Severe	---	American elm--------	---	---	eastern arborvitae, eastern white pine, white spruce
							red maple-----------	50	29	
							white ash-----------	---	---	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
MeB:										
Malone, very stony	3W	Slight	Moderate	Moderate	Moderate	---	eastern arborvitae	---	---	Norway spruce, eastern white pine, white spruce
							eastern hemlock	---	---	
							northern red oak	---	---	
							red maple	70	43	
Adjidaumo	2W	Slight	Severe	Severe	Severe	---	American elm	---	---	eastern arborvitae, eastern white pine, white spruce
							red maple	50	29	
							white ash	---	---	
MfA:										
Matoon	3W	Slight	Severe	Slight	Moderate	---	eastern hemlock	---	---	Norway spruce, white spruce
							eastern white pine	---	---	
							northern red oak	---	---	
							red maple	60	43	
							white ash	---	---	
MfB:										
Matoon	3W	Slight	Severe	Slight	Moderate	---	eastern hemlock	---	---	Norway spruce, white spruce
							eastern white pine	---	---	
							northern red oak	---	---	
							red maple	60	43	
							white ash	---	---	
Mh:										
Mino	3W	Slight	Moderate	Moderate	Moderate	---	eastern hemlock	65	---	European larch, Norway spruce, eastern white pine, white spruce
							northern red oak	70	57	
							white ash	69	43	
Mn:										
Munuscong	3W	Slight	Severe	Severe	Severe	Severe	balsam fir	---	---	eastern white pine, white spruce
							black ash	---	---	
							black spruce	---	---	
							eastern arborvitae	---	---	
							paper birch	---	---	
							quaking aspen	50	43	
							red maple	---	---	
							tamarack	---	---	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
MsA:										
Muskellunge-------------	3W	Slight	Moderate	Slight	Slight	---	eastern white pine--	---	---	European larch,
							northern red oak----	70	57	Norway spruce,
							red maple-----------	---	---	eastern white
							sugar maple---------	65	43	pine, white spruce
MsB:										
Muskellunge-------------	3W	Slight	Moderate	Slight	Slight	---	eastern white pine--	---	---	European larch,
							northern red oak----	70	57	Norway spruce,
							red maple-----------	---	---	eastern white
							sugar maple---------	65	43	pine, white spruce
MuB:										
Muskellunge-------------	3W	Slight	Moderate	Slight	Slight	---	eastern white pine--	---	---	European larch,
							northern red oak----	70	57	Norway spruce,
							red maple-----------	---	---	eastern white
							sugar maple---------	65	43	pine, white spruce
MwB:										
Muskellunge, undulating-	3W	Slight	Moderate	Slight	Slight	---	eastern white pine--	---	---	European larch,
							northern red oak----	70	57	Norway spruce,
							red maple-----------	---	---	eastern white
							sugar maple---------	65	43	pine, white spruce
Adjidaumo---------------	2W	Slight	Severe	Severe	Severe	---	American elm--------	---	---	eastern arborvitae,
							red maple-----------	50	29	eastern white
							white ash-----------	---	---	pine, white spruce
Na:										
Naumburg----------------	2W	Slight	Moderate	Severe	Moderate	---	American elm--------	---	---	Norway spruce,
							black ash-----------	---	---	eastern hemlock,
							eastern hemlock-----	---	---	eastern white
							eastern white pine--	60	100	pine, white spruce
							green ash-----------	---	---	
							paper birch---------	---	---	
							red maple-----------	60	43	
							sugar maple---------	55	29	
							white spruce--------	50	114	
							yellow birch--------	---	---	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
NhA:										
Nehasne	3A	Slight	Slight	Slight	Slight	---	northern red oak	70	57	European larch,
							sugar maple	65	43	Norway spruce,
							white ash	75	43	eastern white
										pine, red pine
NhB:										
Nehasne	3A	Slight	Slight	Slight	Slight	---	northern red oak	70	57	European larch,
							sugar maple	65	43	Norway spruce,
							white ash	75	43	eastern white
										pine, red pine
NhC:										
Nehasne	3A	Slight	Slight	Slight	Slight	---	northern red oak	70	57	European larch,
							sugar maple	65	43	Norway spruce,
							white ash	75	43	eastern white
										pine, red pine
NoA:										
Nicholville	3A	Slight	Slight	Slight	Slight	---	eastern white pine	75	172	European larch,
							northern red oak	70	57	Norway spruce,
							sugar maple	65	43	eastern white
										pine, white spruce
NoB:										
Nicholville	3A	Slight	Slight	Slight	Slight	---	eastern white pine	75	172	European larch,
							northern red oak	70	57	Norway spruce,
							sugar maple	65	43	eastern white
										pine, white spruce
NoC:										
Nicholville, rolling	3R	Moderate	Slight	Slight	Slight	---	eastern white pine	75	172	European larch,
							northern red oak	70	57	Norway spruce,
							sugar maple	65	43	eastern white
										pine, white spruce
NrB:										
Nicholville	3A	Slight	Slight	Slight	Slight	---	eastern white pine	75	172	European larch,
							northern red oak	70	57	Norway spruce,
							sugar maple	65	43	eastern white
										pine, white spruce

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
OgA:										
Ogdensburg	3W	Slight	Moderate	Moderate	Moderate	---	American basswood	---	---	European larch, Norway spruce, white spruce
							eastern arborvitae	---	---	
							northern red oak	70	43	
							red maple	70	43	
							white ash	78	43	
OgB:										
Ogdensburg	3W	Slight	Moderate	Moderate	Moderate	---	American basswood	---	---	European larch, Norway spruce, white spruce
							eastern arborvitae	---	---	
							northern red oak	70	43	
							red maple	70	43	
							white ash	78	43	
Pg:										
Pits, gravel and sand.										
Ph:										
Pits, quarry.										
PmC:										
Potsdam	3R	Moderate	Slight	Slight	Slight	---	American beech	---	---	European larch, Norway spruce, eastern white pine, red pine, white spruce
							eastern hemlock	---	---	
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	
PoC:										
Potsdam, very bouldery	3R	Severe	Moderate	Slight	Slight	---	American beech	---	---	European larch, Norway spruce, eastern white pine, red pine, white spruce
							eastern hemlock	---	---	
							eastern white pine	75	143	
							northern red oak	70	57	
							sugar maple	65	43	
							white ash	75	43	
Tunbridge, very bouldery	3R	Moderate	Moderate	Slight	Moderate	Slight	eastern white pine	50	86	eastern white pine, red spruce, white spruce
							northern red oak	---	---	
							sugar maple	60	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
PoD:										
Potsdam, very bouldery--	3R	Severe	Moderate	Slight	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	Norway spruce,
							eastern white pine--	75	143	eastern white
							northern red oak----	70	57	pine, red pine,
							sugar maple---------	65	43	white spruce
							white ash-----------	75	43	
Tunbridge, very bouldery---------------	3R	Moderate	Moderate	Slight	Moderate	Slight	eastern white pine--	50	86	eastern white pine,
							northern red oak----	---	---	red spruce, white
							sugar maple---------	60	43	spruce
PpD:										
Potsdam, very bouldery--	3R	Severe	Moderate	Slight	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	Norway spruce,
							eastern white pine--	75	143	eastern white
							northern red oak----	70	57	pine, red pine,
							sugar maple---------	65	43	white spruce
							white ash-----------	75	43	
Berkshire, very bouldery---------------	9R	Slight	Moderate	Slight	Slight	---	balsam fir----------	60	114	balsam fir, eastern
							eastern white pine--	72	129	white pine, red
							paper birch---------	60	57	pine, white spruce
							red pine------------	65	114	
							red spruce----------	50	114	
							sugar maple---------	52	29	
							white ash-----------	62	43	
							white spruce--------	55	129	
							yellow birch--------	55	29	
PsC:										
Potsdam, very bouldery--	3R	Moderate	Slight	Slight	Slight	---	American beech------	---	---	European larch,
							eastern hemlock-----	---	---	Norway spruce,
							eastern white pine--	75	143	eastern white
							northern red oak----	70	57	pine, red pine,
							sugar maple---------	65	43	white spruce
							white ash-----------	75	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns: Erosion hazard	Management concerns: Equip- ment limita- tion	Management concerns: Seedling mortal- ity	Management concerns: Wind- throw hazard	Management concerns: Plant competi- tion	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
PsC:										
Crary, very bouldery----	3R	Moderate	Moderate	Slight	Slight	---	American beech------	---	---	European larch,
							black ash----------	75	43	Norway spruce
							eastern white pine--	75	143	
							northern red oak----	70	57	
							sugar maple---------	65	43	
							yellow birch--------	70	43	
PvB:										
Pyrities----------------	3A	Slight	Slight	Slight	Slight	---	American beech------	---	---	European larch,
							northern red oak----	---	---	Norway spruce,
							sugar maple---------	65	43	eastern white
							white oak-----------	---	---	pine, red pine
PvC:										
Pyrities----------------	3A	Slight	Slight	Slight	Slight	---	American beech------	---	---	European larch,
							northern red oak----	---	---	Norway spruce,
							sugar maple---------	65	43	eastern white
							white oak-----------	---	---	pine, red pine
PxD:										
Pyrities, very stony----	3R	Slight	Moderate	Slight	Slight	---	American beech------	---	---	European larch,
							northern red oak----	---	---	Norway spruce,
							sugar maple---------	65	43	eastern white
							white oak-----------	---	---	pine, red pine
PyB:										
Pyrities, rocky---------	3A	Slight	Slight	Slight	Slight	---	American beech------	---	---	European larch,
							northern red oak----	---	---	Norway spruce,
							sugar maple---------	65	43	eastern white
							white oak-----------	---	---	pine, red pine
PyC:										
Pyrities, rocky---------	3A	Slight	Slight	Slight	Slight	---	American beech------	---	---	European larch,
							northern red oak----	---	---	Norway spruce,
							sugar maple---------	65	43	eastern white
							white oak-----------	---	---	pine, red pine
PzC:										
Pyrities, very stony----	3A	Slight	Slight	Slight	Slight	---	American beech------	---	---	European larch,
							northern red oak----	---	---	Norway spruce,
							sugar maple---------	65	43	eastern white
							white oak-----------	---	---	pine, red pine

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
PzC:										
Kalurah, very stony-----	4A	Slight	Slight	Slight	Slight	---	northern red oak----	75	57	European larch,
							sugar maple---------	65	---	Norway spruce,
							white oak-----------	70	---	eastern white
										pine, white spruce
QwB:										
Quetico-----------------	2D	Slight	Severe	Severe	Severe	Slight	eastern white pine--	35	72	jack pine
							jack pine-----------	35	29	
							paper birch---------	40	43	
							quaking aspen-------	35	29	
							red pine------------	35	57	
Rock outcrop.										
Insula------------------	2D	Slight	Slight	Severe	Moderate	---	northern red oak----	47	29	eastern white pine,
							sugar maple---------	56	29	red pine
RaA:										
Raquette----------------	8A	Slight	Slight	Slight	Slight	---	eastern white pine--	---	114	European larch,
							northern red oak----	---	---	eastern white
							sugar maple---------	---	---	pine, red pine
RaB:										
Raquette----------------	8A	Slight	Slight	Slight	Slight	---	eastern white pine--	---	114	European larch,
							northern red oak----	---	---	eastern white
							sugar maple---------	---	---	pine, red pine
RaC:										
Raquette----------------	8A	Slight	Slight	Slight	Slight	---	eastern white pine--	---	114	European larch,
							northern red oak----	---	---	eastern white
							sugar maple---------	---	---	pine, red pine
Rd:										
Redwater----------------	3W	Slight	Moderate	Slight	Slight	---	eastern cottonwood--	---	---	Norway spruce,
							quaking aspen-------	---	---	idahybrid poplar,
							red maple-----------	70	43	white spruce

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
RoA:										
Roundabout	9W	Slight	Severe	Moderate	Severe	Severe	balsam fir	55	114	European larch,
							eastern white pine	70	129	balsam fir,
							gray birch	---	129	eastern white
							hemlock	---	---	pine, white spruce
							red maple	55	29	
							red spruce	45	100	
							tamarack	---	---	
							white spruce	55	129	
RoB:										
Roundabout	9W	Slight	Severe	Moderate	Severe	Severe	balsam fir	55	114	European larch,
							eastern white pine	70	129	balsam fir,
							gray birch	---	129	eastern white
							hemlock	---	---	pine, white spruce
							red maple	55	29	
							red spruce	45	100	
							tamarack	---	---	
							white spruce	55	129	
Rt:										
Runeberg	5W	Slight	Severe	Severe	Severe	Severe	eastern arborvitae	45	72	eastern arborvitae,
							red maple	65	43	white spruce
							white ash	---	---	
Ru:										
Runeberg, very stony	3W	Slight	Severe	Severe	Severe	Severe	eastern arborvitae	45	72	eastern arborvitae,
							red maple	65	43	white spruce
							white ash	---	---	
SaB:										
Salmon	3A	Slight	Slight	Slight	Slight	---	black cherry	---	---	European larch,
							eastern white pine	---	---	Norway spruce,
							northern red oak	---	---	eastern white
							sugar maple	68	43	pine, red pine,
							white ash	---	---	red spruce
							white spruce	---	---	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
SaC:										
Salmon, rolling	3R	Moderate	Slight	Slight	Slight	---	black cherry	---	---	European larch, Norway spruce, eastern white pine, red pine, red spruce
							eastern white pine	---	---	
							northern red oak	---	---	
							sugar maple	68	43	
							white ash	---	---	
							white spruce	---	---	
Se:										
Searsport	6W	Slight	Severe	Severe	Severe	Severe	European larch	---	---	European larch, eastern arborvitae
							balsam fir	53	100	
							black spruce	---	---	
							eastern arborvitae	45	72	
							eastern white pine	55	86	
							red maple	55	29	
							tamarack	---	---	
Sg:										
Stockholm	3W	Slight	Moderate	Moderate	Moderate	---	eastern hemlock	60	---	Norway spruce, eastern white pine, white spruce
							eastern white pine	65	114	
							red maple	75	43	
ShB:										
Summerville	2D	Slight	Moderate	Moderate	Severe	Slight	American beech	---	---	eastern arborvitae, eastern white pine, white spruce
							balsam fir	---	---	
							basswood	---	---	
							eastern arborvitae	---	---	
							eastern white pine	48	86	
							paper birch	53	57	
							quaking aspen	---	---	
							red pine	---	---	
							sugar maple	57	29	
SkB:										
Summerville, rocky	2D	Slight	Moderate	Moderate	Severe	Slight	American beech	---	---	eastern arborvitae, eastern white pine, white spruce
							balsam fir	---	---	
							basswood	---	---	
							eastern arborvitae	---	---	
							eastern white pine	48	86	
							paper birch	53	57	
							quaking aspen	---	---	
							red pine	---	---	
							sugar maple	57	29	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
SkB:										
Gouverneur	2D	Slight	Slight	Severe	Severe	Slight	basswood	40	29	Scotch pine, eastern white pine, red pine
							northern red oak	30	29	
							quaking aspen	40	29	
							red maple	30	29	
SlD:										
Summerville, hilly	2R	Moderate	Moderate	Moderate	Severe	Slight	American beech	---	---	eastern arborvitae, eastern white pine, white spruce
							balsam fir	---	---	
							basswood	---	---	
							eastern arborvitae	---	---	
							eastern white pine	48	86	
							paper birch	53	57	
							quaking aspen	---	---	
							red pine	---	---	
							sugar maple	57	29	
Rock outcrop.										
SmC:										
Summerville, rolling	2D	Slight	Moderate	Moderate	Severe	Slight	American beech	---	---	eastern arborvitae, eastern white pine, white spruce
							balsam fir	---	---	
							basswood	---	---	
							eastern arborvitae	---	---	
							eastern white pine	48	86	
							paper birch	53	57	
							quaking aspen	---	---	
							red pine	---	---	
							sugar maple	57	29	
Rock outcrop.										
Nehasne, rolling	3A	Slight	Slight	Slight	Slight	---	northern red oak	70	57	European larch, Norway spruce, eastern white pine, red pine
							sugar maple	65	43	
							white ash	75	43	
SpB:										
Sunapee	3A	Slight	Slight	Slight	Slight	Moderate	balsam fir	55	114	European larch, eastern white pine, red pine, white spruce
							eastern white pine	72	129	
							northern red oak	70	57	
							red spruce	45	100	
							sugar maple	67	43	
							white spruce	55	129	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to manage
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									cu ft/ac	
SsB:										
Sunapee, very bouldery--	3A	Slight	Slight	Slight	Slight	Moderate	balsam fir---------	55	114	European larch, eastern white pine, red pine, white spruce
							eastern white pine--	72	129	
							northern red oak----	70	57	
							red spruce---------	45	100	
							sugar maple---------	67	43	
							white spruce--------	55	129	
Berkshire, very bouldery---------------	9A	Slight	Slight	Slight	Slight	---	balsam fir---------	60	114	balsam fir, eastern white pine, red pine, white spruce
							eastern white pine--	72	129	
							paper birch---------	60	57	
							red pine-----------	65	114	
							red spruce---------	50	114	
							sugar maple---------	52	29	
							white ash----------	62	43	
							white spruce--------	55	129	
							yellow birch--------	55	29	
Sw:										
Swanton-----------------	7W	Slight	Severe	Severe	Severe	Severe	balsam fir---------	45	86	eastern white pine, white spruce
							eastern white pine--	60	100	
							red maple----------	55	29	
							red spruce---------	50	114	
							sugar maple---------	55	29	
							white spruce--------	45	100	
TdA:										
Trout River-------------	8S	Slight	Slight	Severe	Slight	---	eastern white pine--	62	114	eastern white pine, red pine
							red pine-----------	52	86	
							red spruce---------	39	86	
							sugar maple---------	61	43	
TdB:										
Trout River-------------	8S	Slight	Slight	Severe	Slight	---	eastern white pine--	62	114	eastern white pine, red pine
							red pine-----------	52	86	
							red spruce---------	39	86	
							sugar maple---------	61	43	
TfB:										
Trout River, very stony-	3S	Slight	Slight	Severe	Slight	---	eastern white pine--	62	114	eastern white pine, red pine
							red pine-----------	52	86	
							red spruce---------	39	86	
							sugar maple---------	61	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
TfB:										
Fahey, very stony	8A	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114	European larch, eastern white pine, red pine, white spruce
							northern red oak	60	43	
							red pine	65	114	
							red spruce	45	100	
TuD:										
Tunbridge	3R	Moderate	Moderate	Slight	Moderate	Slight	balsam fir	---	---	Douglas fir, Fraser's fir, Norway spruce, balsam fir, blue spruce, eastern white pine, larch, red spruce, white spruce
							eastern white pine	65	114	
							northern red oak	68	57	
							paper birch	78	43	
							red maple	---	---	
							red spruce	45	100	
							sugar maple	60	43	
							white ash	65	43	
							white spruce	55	129	
							yellow birch	60	43	
Lyman	2D	Moderate	Moderate	Moderate	Severe	Moderate	American beech	---	---	Austrian pine, balsam fir, eastern white pine, white spruce
							balsam fir	48	114	
							eastern hemlock	---	---	
							eastern white pine	56	100	
							northern red oak	54	43	
							paper birch	---	---	
							red spruce	42	86	
							sugar maple	---	---	
							white spruce	55	129	
TwC:										
Tunbridge, rolling	3A	Slight	Slight	Slight	Moderate	Slight	balsam fir	---	---	Douglas fir, Fraser's fir, Norway spruce, balsam fir, blue spruce, eastern white pine, larch, red spruce, white spruce
							eastern white pine	65	114	
							northern red oak	68	57	
							paper birch	78	43	
							red maple	---	---	
							red spruce	45	100	
							sugar maple	60	43	
							white ash	65	43	
							white spruce	55	129	
							yellow birch	60	43	

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
									cu ft/ac	
TwC:										
Lyman, rolling	2D	Slight	Slight	Moderate	Severe	Moderate	American beech	---	---	Austrian pine, balsam fir, eastern white pine, white spruce
							balsam fir	48	114	
							eastern hemlock	---	---	
							eastern white pine	56	100	
							northern red oak	54	43	
							paper birch	---	---	
							red spruce	42	86	
							sugar maple	---	---	
							white spruce	55	129	
Dawson	2W	Slight	Severe	Severe	Severe	Severe	black spruce	15	29	---
							tamarack	---	---	
Ua: Udipsamments, smoothed.										
Ue: Udorthents, loamy.										
Uf: Udorthents, clayey.										
Ug: Udorthents, mine waste, acid.										
Uh: Udorthents, mine waste, nonacid.										
Un: Udorthents, refuse substratum.										
Ur: Urban land.										
W: Water.										

Table 8.--Forestland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
									cu ft/ac	
WaA:										
Waddington	3F	Slight	Slight	Moderate	Slight	---	American basswood	---	---	European larch, eastern white pine, red pine
							American beech	---	---	
							northern red oak	60	43	
							sugar maple	---	---	
WaB:										
Waddington	3F	Slight	Slight	Moderate	Slight	---	American basswood	---	---	European larch, eastern white pine, red pine
							American beech	---	---	
							northern red oak	60	43	
							sugar maple	---	---	
WaC:										
Waddington, rolling	3F	Slight	Slight	Moderate	Slight	---	American basswood	---	---	European larch, eastern white pine, red pine
							American beech	---	---	
							northern red oak	60	43	
							sugar maple	---	---	
WaD:										
Waddington	3F	Slight	Moderate	Moderate	Slight	---	American basswood	---	---	European larch, eastern white pine, red pine
							American beech	---	---	
							northern red oak	60	43	
							sugar maple	---	---	
WdB:										
Waddington, very cobbly sandy loam	3F	Slight	Slight	Moderate	Slight	---	American basswood	---	---	European larch, eastern white pine, red pine
							American beech	---	---	
							northern red oak	60	43	
							sugar maple	---	---	
Wg:										
Wegatchie	2W	Slight	Severe	Severe	Severe	---	American elm	---	---	---
							quaking aspen	---	---	
							red maple	50	29	
							white ash	---	---	

Table 9.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
021:					
Dawson	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Fluvaquents	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding droughty
Loxley	Severe: excess humus too acid ponding	Severe: excess humus too acid ponding	Severe: excess humus too acid ponding	Severe: excess humus ponding	Severe: excess humus too acid ponding
023:					
Loxley	Severe: excess humus too acid ponding	Severe: excess humus too acid ponding	Severe: excess humus too acid ponding	Severe: excess humus ponding	Severe: excess humus too acid ponding
Dawson	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
363A:					
Adams	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: droughty
363B:					
Adams	Severe: too sandy	Severe: too sandy	Severe: slope too sandy	Severe: too sandy	Severe: droughty
363D:					
Adams	Severe: slope too sandy	Severe: slope too sandy	Severe: slope too sandy	Severe: slope too sandy	Severe: slope droughty
365:					
Naumburg	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Croghan	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness	Severe: droughty
376A:					
Colton	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: small stones droughty
Duxbury	Slight	Slight	Moderate: small stones	Severe: erodes easily	Slight
Adams	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: droughty

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
376C:					
Colton	Moderate: slope small stones	Moderate: slope small stones	Severe: slope small stones	Slight	Severe: small stones droughty
Duxbury	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Adams	Severe: too sandy	Severe: too sandy	Severe: slope too sandy	Severe: too sandy	Severe: droughty
376D:					
Colton	Severe: slope	Severe: slope	Severe: slope small stones	Severe: slope	Severe: slope small stones droughty
Duxbury	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
Adams	Severe: slope too sandy	Severe: slope too sandy	Severe: slope too sandy	Severe: slope too sandy	Severe: slope droughty
380B:					
Colton	Moderate: slope small stones	Moderate: slope small stones	Severe: slope small stones	Slight	Severe: small stones droughty
Duxbury	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Dawson	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
380D:					
Colton	Severe: slope	Severe: slope	Severe: slope small stones	Severe: slope	Severe: slope small stones droughty
Duxbury	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
Dawson	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
643C:					
Berkshire, very bouldery	Moderate: slope small stones	Moderate: slope small stones	Severe: large stones slope small stones	Slight	Moderate: small stones
643D:					
Berkshire, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
644C:					
Berkshire, rolling, very bouldery	Moderate: slope small stones	Moderate: slope small stones	Severe: large stones slope small stones	Slight	Moderate: small stones
Lyme, very bouldery	Severe: wetness	Severe: large stones wetness	Severe: large stones wetness	Severe: wetness	Severe: wetness
644D:					
Berkshire, hilly, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope
Lyme, very bouldery	Severe: wetness	Severe: large stones wetness	Severe: large stones wetness	Severe: wetness	Severe: wetness
709B:					
Adirondack, very bouldery	Severe: wetness too acid	Moderate: large stones wetness	Severe: large stones small stones	Severe: erodes easily	Moderate: large stones small stones wetness
Tughill, very bouldery	Severe: ponding	Severe: ponding	Severe: large stones small stones ponding	Severe: ponding	Severe: ponding
Lyme, very bouldery	Severe: wetness	Severe: large stones wetness	Severe: large stones wetness	Severe: wetness	Severe: wetness
741C:					
Potsdam, very bouldery	Moderate: large stones slope wetness	Moderate: large stones slope wetness	Severe: large stones slope	Severe: erodes easily	Moderate: large stones slope
Tunbridge, very bouldery	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope small stones	Slight	Moderate: large stones slope small stones
Crary, very bouldery	Severe: wetness	Moderate: large stones slope wetness	Severe: large stones slope wetness	Severe: erodes easily	Moderate: large stones slope wetness
741D:					
Potsdam, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope	Severe: erodes easily slope	Severe: slope

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
741D:					
Tunbridge, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope
743C:					
Potsdam, very bouldery	Moderate: large stones slope wetness	Moderate: large stones slope wetness	Severe: large stones slope	Severe: erodes easily	Moderate: large stones slope
743D:					
Potsdam, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope	Severe: erodes easily slope	Severe: slope
745C:					
Crary, very bouldery	Severe: wetness	Moderate: large stones slope wetness	Severe: large stones slope wetness	Severe: erodes easily	Moderate: large stones slope wetness
Potsdam, very bouldery	Moderate: large stones slope wetness	Moderate: large stones slope wetness	Severe: large stones slope	Severe: erodes easily	Moderate: large stones slope
747B:					
Crary, very bouldery	Severe: wetness	Moderate: large stones wetness	Severe: large stones wetness	Severe: erodes easily	Moderate: large stones wetness
Adirondack, very bouldery	Severe: wetness too acid	Moderate: large stones wetness	Severe: large stones small stones	Severe: erodes easily	Moderate: large stones small stones wetness
807:					
Udorthents, mine waste	Unranked	Unranked	Unranked	Unranked	Unranked
831C:					
Tunbridge, very bouldery	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope small stones	Slight	Moderate: large stones slope small stones
Lyman, very bouldery	Severe: depth to rock	Severe: depth to rock	Severe: large stones slope depth to rock	Slight	Severe: depth to rock
831D:					
Tunbridge, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
831D:					
Lyman, very bouldery---	Severe: slope depth to rock	Severe: slope depth to rock	Severe: large stones slope depth to rock	Severe: slope	Severe: slope depth to rock
831F:					
Tunbridge, very bouldery-------------	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope
Lyman, very bouldery---	Severe: slope depth to rock	Severe: slope depth to rock	Severe: large stones slope depth to rock	Severe: slope	Severe: slope depth to rock
833C:					
Tunbridge, very bouldery-------------	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope small stones	Slight	Moderate: large stones slope small stones
Adirondack, very bouldery-------------	Severe: wetness too acid	Moderate: large stones wetness	Severe: large stones small stones	Severe: erodes easily	Moderate: large stones small stones wetness
Lyman, very bouldery---	Severe: depth to rock	Severe: depth to rock	Severe: large stones slope depth to rock	Slight	Severe: depth to rock
835C:					
Tunbridge, very bouldery-------------	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope small stones	Slight	Moderate: large stones slope small stones
Borosaprists-----------	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Ricker, very bouldery--	Severe: excess humus depth to rock	Severe: excess humus depth to rock	Severe: excess humus slope depth to rock	Severe: excess humus fragile	Severe: excess humus thin layer
861C:					
Lyman------------------	Severe: depth to rock	Severe: depth to rock	Severe: large stones slope depth to rock	Slight	Severe: depth to rock
Ricker, very bouldery--	Severe: excess humus depth to rock	Severe: excess humus depth to rock	Severe: excess humus slope depth to rock	Severe: excess humus fragile	Severe: excess humus thin layer

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
861C:					
Rock outcrop, very bouldery	Severe: depth to rock	Severe: depth to rock	Severe: slope, depth to rock	Slight	Severe: depth to rock
861D:					
Lyman, very bouldery	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: large stones, slope, depth to rock	Severe: slope	Severe: slope, depth to rock
Ricker, very bouldery	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, fragile	Severe: excess humus, slope, thin layer
Rock outcrop	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Severe: slope, depth to rock
861F:					
Lyman, very bouldery	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: large stones, slope, depth to rock	Severe: slope	Severe: slope, depth to rock
Ricker, very bouldery	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, fragile	Severe: excess humus, slope, thin layer
Rock outcrop	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Severe: slope, depth to rock
891F:					
Rock outcrop	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Severe: slope, depth to rock
Ricker, very bouldery	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, depth to rock	Severe: excess humus, slope, fragile	Severe: excess humus, slope, thin layer
Lyman, very bouldery	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: large stones, slope, depth to rock	Severe: slope	Severe: slope, depth to rock
AaB:					
Adams, sand	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: droughty
AaC:					
Adams, sand	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Severe: droughty
AaD:					
Adams, sand	Severe: slope, too sandy	Severe: slope, too sandy	Severe: slope, too sandy	Severe: slope, too sandy	Severe: slope, droughty

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AdB:					
Adams, loamy fine sand-	Slight	Slight	Moderate: slope	Slight	Severe: droughty
AdC:					
Adams, loamy fine sand-	Moderate: slope	Moderate: slope	Severe: slope	Slight	Severe: droughty
Ak:					
Adjidaumo, silty clay--	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness
Am:					
Adjidaumo, mucky silty clay------------------	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: ponding	Severe: ponding
Ao:					
Adjidaumo, flooded-----	Severe: flooding percs slowly ponding	Severe: percs slowly too clayey ponding	Severe: flooding too clayey ponding	Severe: too clayey ponding	Severe: flooding too clayey ponding
Ap:					
Adjidaumo, silty clay, rocky-----------------	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness
ArC:					
Adjidaumo--------------	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness
Summerville------------	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Slight	Severe: depth to rock
BeB:					
Berkshire--------------	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: large stones small stones
BgC:					
Berkshire, very bouldery--------------	Moderate: slope small stones	Moderate: slope small stones	Severe: large stones slope small stones	Slight	Moderate: small stones
Lyme, very bouldery----	Severe: wetness	Severe: large stones wetness	Severe: large stones wetness	Severe: wetness	Severe: wetness

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
BkC:					
Berkshire, very bouldery	Moderate: slope small stones	Moderate: slope small stones	Severe: large stones slope small stones	Slight	Moderate: small stones
Sunapee, very bouldery	Moderate: large stones slope wetness	Moderate: large stones slope wetness	Severe: large stones slope	Moderate: large stones wetness	Moderate: large stones small stones wetness
Bo:					
Borosaprists	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Fluvaquents	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding droughty
Ce:					
Carbondale, undrained	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
CgB:					
Colton	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: small stones droughty
Duxbury	Slight	Slight	Moderate: slope small stones	Severe: erodes easily	Slight
CgC:					
Colton	Moderate: slope small stones	Moderate: slope small stones	Severe: slope small stones	Slight	Severe: small stones droughty
Duxbury	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
CgD:					
Colton	Severe: slope	Severe: slope	Severe: slope small stones	Severe: slope	Severe: slope small stones droughty
Duxbury	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
Ck:					
Cook	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Cn:					
Cornish	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Cp:					
Coveytown	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Cr:					
Coveytown	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Cook, very stony	Severe: wetness	Severe: wetness	Severe: large stones small stones wetness	Severe: wetness	Severe: wetness
CsB:					
Crary	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
CtB:					
Crary, very bouldery	Severe: wetness	Moderate: large stones wetness	Severe: large stones wetness	Severe: erodes easily	Moderate: large stones wetness
Potsdam, very bouldery	Moderate: large stones wetness	Moderate: large stones wetness	Severe: large stones	Severe: erodes easily	Moderate: large stones
CuB:					
Croghan, sand	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: droughty
CvA:					
Croghan, loamy fine sand	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness	Severe: droughty
CvB:					
Croghan, loamy fine sand	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Moderate: wetness	Severe: droughty
Da:					
Dawson	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
DAM:					
Large dams.					
Dd:					
Deford, loamy fine sand	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding droughty
Df:					
Deford, mucky loamy fine sand	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding droughty

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
DpA:					
Depeyster	Moderate: wetness	Moderate: wetness	Moderate: wetness	Severe: erodes easily	Moderate: wetness
DpB:					
Depeyster	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Severe: erodes easily	Moderate: wetness
DpC:					
Depeyster	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Severe: erodes easily	Moderate: slope wetness
Dr:					
Dorval	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Du:					
Dune land	Severe: slope too sandy	Severe: slope too sandy	Severe: slope too sandy	Severe: too sandy	Severe: slope droughty
EeB:					
Eelweir	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Moderate: wetness	Moderate: wetness
EmA:					
Elmwood	Severe: percs slowly	Severe: percs slowly	Severe: percs slowly	Moderate: wetness	Moderate: wetness
EmB:					
Elmwood	Severe: percs slowly	Severe: percs slowly	Severe: percs slowly	Moderate: wetness	Moderate: wetness
Fa:					
Fahey	Moderate: small stones too sandy	Moderate: small stones too sandy	Severe: small stones	---	Severe: droughty
FkA:					
Flackville	Severe: percs slowly	Severe: percs slowly	Severe: percs slowly	Moderate: wetness	Moderate: wetness droughty
FkB:					
Flackville	Severe: percs slowly	Severe: percs slowly	Severe: percs slowly	Moderate: wetness	Moderate: wetness droughty
Fu:					
Fluvaquents, frequently flooded	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding	Severe: ponding	Severe: flooding ponding droughty
Udifluvents, frequently flooded	Severe: flooding	Moderate: flooding wetness	Severe: flooding	Moderate: flooding wetness	Severe: flooding droughty

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
GrB:					
Grenville	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope small stones	Slight	Moderate: droughty
GrC:					
Grenville	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: slope droughty
GsD:					
Grenville, very stony	Severe: slope	Severe: slope	Severe: large stones slope small stones	Moderate: slope	Severe: slope
Gu:					
Guff	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: percs slowly ponding	Severe: ponding	Severe: ponding
HaA:					
Hailesboro	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
HaB:					
Hailesboro	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Hc:					
Hannawa	Severe: wetness depth to rock	Severe: wetness depth to rock	Severe: wetness depth to rock	Severe: wetness	Severe: wetness depth to rock
HeB:					
Heuvelton	Moderate: wetness	Moderate	Moderate: slope small stones	Severe: erodes easily	Moderate
HeC:					
Heuvelton, rolling	Moderate: slope wetness	Moderate	Severe: slope	Severe: erodes easily	Moderate
HkE:					
Heuvelton	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
Depeyster	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
HnA:					
Hogansburg	Moderate: wetness	Moderate: wetness	Moderate: small stones	Moderate: wetness	Moderate: wetness
HnB:					
Hogansburg	Moderate: wetness	Moderate: wetness	Moderate: slope small stones	Moderate: wetness	Moderate: wetness

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
HrB:					
Hogansburg, very stony-	Moderate: large stones	Moderate: large stones	Severe: large stones small stones	Moderate: wetness	Severe: small stones
Grenville, very stony--	Moderate: large stones small stones	Moderate: large stones small stones	Severe: large stones small stones	Slight	Moderate: large stones small stones
IaB:					
Insula-----------------	Severe: depth to rock	Severe: depth to rock	Severe: small stones depth to rock	Slight	Severe: depth to rock
InB:					
Insula-----------------	Severe: depth to rock	Severe: depth to rock	Severe: small stones depth to rock	Slight	Severe: depth to rock
IrC:					
Insula, rolling--------	Severe: depth to rock	Severe: depth to rock	Severe: large stones small stones depth to rock	Slight	Severe: depth to rock
Rock outcrop-----------	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Slight	Severe: depth to rock
IrD:					
Insula, hilly----------	Severe: depth to rock	Severe: depth to rock	Severe: large stones small stones depth to rock	Slight	Severe: depth to rock
Rock outcrop-----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock
KaA:					
Kalurah----------------	Moderate: wetness	Moderate: wetness	Moderate: small stones wetness	Moderate: wetness	Moderate: wetness
KaB:					
Kalurah----------------	Moderate: wetness	Moderate: wetness	Moderate: slope small stones	Moderate: wetness	Moderate: wetness
KbB:					
Kalurah, very stony----	Moderate: large stones small stones	Moderate: large stones wetness	Severe: large stones small stones	Moderate: wetness	Moderate: large stones small stones wetness
Pyrities, very stony---	Moderate: large stones	Moderate: large stones	Severe: large stones small stones	Slight	Moderate: large stones small stones
Lc:					
Lovewell---------------	Severe: flooding	Moderate: wetness	Moderate: flooding wetness	Moderate: wetness	Moderate: flooding wetness

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Ld:					
Loxley	Severe: excess humus too acid ponding	Severe: excess humus too acid ponding	Severe: excess humus too acid ponding	Severe: excess humus ponding	Severe: excess humus too acid ponding
LeC:					
Lyman	Severe: depth to rock	Severe: depth to rock	Severe: large stones slope depth to rock	Slight	Severe: depth to rock
Rock outcrop	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Slight	Severe: depth to rock
LeD:					
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: large stones slope depth to rock	Severe: slope	Severe: slope depth to rock
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock
Lt:					
Lyme, very bouldery	Severe: wetness	Severe: large stones wetness	Severe: large stones wetness	Severe: wetness	Severe: wetness
Tughill, very bouldery	Severe: ponding	Severe: ponding	Severe: large stones small stones ponding	Severe: ponding	Severe: ponding
MaA:					
Malone	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
MaB:					
Malone	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
MbB:					
Malone, very stony	Severe: wetness	Severe: wetness	Severe: large stones small stones	Severe: wetness	Severe: wetness
MdB:					
Malone, undulating	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Adjidaumo	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
MeB:					
Malone, very stony	Severe: wetness	Severe: wetness	Severe: large stones small stones	Severe: wetness	Severe: wetness

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
MeB:					
Adjidaumo	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: percs slowly too clayey wetness	Severe: too clayey wetness	Severe: too clayey wetness
MfA:					
Matoon	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
MfB:					
Matoon	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Mh:					
Mino	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Mn:					
Munuscong	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
MsA:					
Muskellunge	Severe: wetness	Severe: wetness	Severe: wetness	Severe: erodes easily wetness	Severe: wetness
MsB:					
Muskellunge	Severe: wetness	Severe: wetness	Severe: wetness	Severe: erodes easily wetness	Severe: wetness
MuB:					
Muskellunge	Severe: wetness	Severe: wetness	Severe: wetness	Severe: erodes easily wetness	Severe: wetness
MwB:					
Muskellunge, undulating	Severe: wetness	Severe: wetness	Severe: wetness	Severe: erodes easily wetness	Severe: wetness
Adjidaumo	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
Na:					
Naumburg	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
NhA:					
Nehasne	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
NhB:					
Nehasne	Slight	Slight	Moderate: slope small stones	Slight	Moderate: droughty
NhC:					
Nehasne	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope droughty

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
NoA:					
Nicholville	Slight	Slight	Slight	Slight	Slight
NoB:					
Nicholville	Slight	Slight	Moderate: slope	Slight	Slight
NoC:					
Nicholville, rolling	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
NrB:					
Nicholville	Slight	Slight	Moderate: slope	Slight	Slight
OgA:					
Ogdensburg	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
OgB:					
Ogdensburg	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Pg:					
Pits, gravel and sand	Severe: small stones too sandy	Severe: small stones too sandy	Severe: small stones too sandy	Severe: small stones too sandy	Severe: small stones too sandy droughty
Ph:					
Pits, quarry	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Severe: depth to rock
PmC:					
Potsdam	Moderate: percs slowly slope wetness	Moderate: percs slowly slope wetness	Severe: slope	Severe: erodes easily	Moderate: slope wetness
PoC:					
Potsdam, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope	Severe: erodes easily slope	Severe: slope
Tunbridge, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope
PoD:					
Potsdam, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope	Severe: erodes easily slope	Severe: slope
Tunbridge, very bouldery	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
PpD:					
Potsdam, very bouldery-	Severe: slope	Severe: slope	Severe: large stones slope	Severe: erodes easily slope	Severe: slope
Berkshire, very bouldery--------------	Severe: slope	Severe: slope	Severe: large stones slope small stones	Severe: slope	Severe: slope
PsC:					
Potsdam, very bouldery-	Moderate: large stones slope wetness	Moderate: large stones slope wetness	Severe: large stones slope	Severe: erodes easily	Moderate: large stones slope
Crary, very bouldery---	Severe: wetness	Moderate: large stones slope wetness	Severe: large stones slope wetness	Severe: erodes easily	Moderate: large stones slope wetness
PvB:					
Pyrities---------------	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope small stones	Slight	Moderate: droughty
PvC:					
Pyrities---------------	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: droughty
PxD:					
Pyrities, very stony---	Severe: slope	Severe: slope	Severe: large stones slope small stones	Moderate: slope	Severe: slope
PyB:					
Pyrities, rocky--------	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope small stones	Slight	Moderate: droughty
PyC:					
Pyrities, rocky--------	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: droughty
PzC:					
Pyrities, very stony---	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope small stones	Slight	Moderate: large stones slope small stones
Kalurah, very stony----	Moderate: large stones slope small stones	Moderate: large stones slope wetness	Severe: large stones slope small stones	Moderate: wetness	Moderate: large stones small stones wetness
QwB:					
Quetico----------------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Severe: depth to rock

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
QwB:					
Rock outcrop	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Severe: depth to rock
Insula	Severe: depth to rock	Severe: depth to rock	Severe: small stones depth to rock	Slight	Severe: depth to rock
RaA:					
Raquette	Slight	Slight	Moderate: small stones	Slight	Moderate: droughty
RaB:					
Raquette	Slight	Slight	Moderate: slope small stones	Slight	Moderate: droughty
RaC:					
Raquette	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope droughty
Rd:					
Redwater	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness
RoA:					
Roundabout	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
RoB:					
Roundabout	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Rt:					
Runeberg	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Ru:					
Runeberg, very stony	Severe: wetness	Severe: wetness	Severe: large stones wetness	Severe: wetness	Severe: wetness
SaB:					
Salmon	Slight	Slight	Moderate: slope	Moderate: erodes easily	Slight
SaC:					
Salmon, rolling	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Se:					
Searsport	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding droughty
Sg:					
Stockholm	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness depth to rock	Severe: wetness	Severe: wetness depth to rock

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
ShB:					
Summerville------------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Severe: depth to rock
SkB:					
Summerville, rocky-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Severe: depth to rock
Gouverneur-------------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Severe: depth to rock
SlD:					
Summerville, hilly-----	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock
Rock outcrop-----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock
SmC:					
Summerville, rolling---	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Slight	Severe: depth to rock
Rock outcrop-----------	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Slight	Severe: depth to rock
Nehasne, rolling-------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope droughty
SpB:					
Sunapee----------------	Moderate: wetness	Moderate: wetness	Moderate: slope small stones	Moderate: wetness	Moderate: wetness
SsB:					
Sunapee, very bouldery-	Moderate: large stones wetness	Moderate: large stones wetness	Severe: large stones	Moderate: large stones wetness	Moderate: large stones small stones wetness
Berkshire, very bouldery--------------	Moderate: small stones	Moderate: small stones	Severe: large stones small stones	Slight	Moderate: small stones
Sw:					
Swanton----------------	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: percs slowly wetness	Severe: wetness	Severe: wetness
TdA:					
Trout River------------	Slight	Slight	Moderate: small stones	Slight	Severe: droughty
TdB:					
Trout River------------	Slight	Slight	Moderate: slope small stones	Slight	Severe: droughty

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
TfB:					
Trout River, very stony	Moderate: large stones too sandy	Moderate: large stones too sandy	Severe: large stones small stones	Slight	Severe: droughty
Fahey, very stony	Moderate: large stones too sandy wetness	Moderate: large stones too sandy wetness	Severe: large stones small stones	Moderate: large stones wetness	Severe: large stones droughty
TuD:					
Tunbridge	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Lyman	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope small stones depth to rock	Severe: slope	Severe: slope depth to rock
TwC:					
Tunbridge, rolling	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope droughty
Lyman, rolling	Severe: depth to rock	Severe: depth to rock	Severe: slope small stones depth to rock	Slight	Severe: depth to rock
Dawson	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
Ua: Udipsamments, smoothed.					
Ue: Udorthents, loamy.					
Uf: Udorthents, clayey.					
Ug: Udorthents, mine waste, acid.					
Uh: Udorthents, mine waste, nonacid.					
Un: Udorthents, refuse substratum.					
Ur:					
Urban land	Variable	Variable	Variable	Variable	Variable
W: Water.					

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
WaA:					
Waddington-------------	Severe: small stones	Severe: small stones	Severe: small stones	Slight	Severe: small stones droughty
WaB:					
Waddington-------------	Severe: small stones	Severe: small stones	Severe: small stones	Slight	Severe: small stones droughty
WaC:					
Waddington, rolling----	Severe: small stones	Severe: small stones	Severe: slope small stones	Slight	Severe: small stones droughty
WaD:					
Waddington-------------	Severe: slope small stones	Severe: slope small stones	Severe: slope small stones	Severe: slope	Severe: slope small stones droughty
WdB:					
Waddington, very cobbly sandy loam-----	Severe: small stones	Severe: small stones	Severe: large stones small stones	Severe: small stones	Severe: small stones droughty
Wg:					
Wegatchie--------------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 10.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
021:										
Dawson	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Poor	Poor	Fair
Fluvaquents	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Loxley	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
023:										
Loxley	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Dawson	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Poor	Poor	Fair
363A:										
Adams	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
363B:										
Adams	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
363D:										
Adams	Very poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
365:										
Naumburg	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Croghan	Poor	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
376A:										
Colton	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Duxbury	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Adams	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
376C:										
Colton	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Duxbury	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Adams	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
376D:										
Colton	Very poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
376D:										
Duxbury	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Adams	Very poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
380B:										
Colton	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Duxbury	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Dawson	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Poor	Poor	Fair
380D:										
Colton	Very poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Duxbury	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Dawson	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Poor	Poor	Fair
643C:										
Berkshire, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
643D:										
Berekshire, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
644C:										
Berkshire, rolling, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Lyme, very bouldery	Very poor	Poor	Fair	Fair	Fair	Good	Good	Very poor	Fair	Very poor
644D:										
Berkshire, hilly, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Lyme, very bouldery	Very poor	Poor	Fair	Fair	Fair	Good	Good	Very poor	Fair	Very poor
709B:										
Adirondack, very bouldery	Very poor	Fair	Fair	Fair	Fair	Fair	Very poor	Fair	Fair	Very poor
Tughill, very bouldery	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
709B:										
Lyme, very bouldery	Very poor	Poor	Fair	Fair	Fair	Poor	Very poor	Very poor	Fair	Very poor
741C:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Crary, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
741D:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
743C:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
743D:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
745C:										
Crary, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
747B:										
Crary, very bouldery	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Adirondack, very bouldery	Very poor	Fair	Fair	Fair	Fair	Fair	Very poor	Fair	Fair	Very poor
807:										
Udorthents, mine waste.										
831C:										
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
831D:										
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
831F:										
Tunbridge, very bouldery	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
833C:										
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Adirondack, very bouldery	Very poor	Fair	Fair	Fair	Fair	Fair	Very poor	Fair	Fair	Very poor
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
835C:										
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Borosaprists.										
Ricker, very bouldery	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
861C:										
Lyman	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Ricker, very bouldery	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
Rock outcrop, very bouldery	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
861D:										
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Ricker, very bouldery	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
861F:										
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Ricker, very bouldery	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
891F:										
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Ricker, very bouldery	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
AaB:										
Adams, sand	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
AaC:										
Adams, sand	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
AaD:										
Adams, sand	Very poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
AdB:										
Adams, loamy fine sand	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
AdC:										
Adams, loamy fine sand	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Ak:										
Adjidaumo, silty clay	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Fair	Good
Am:										
Adjidaumo, mucky silty clay	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Ao:										
Adjidaumo, flooded	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Ap:										
Adjidaumo, silty clay, rocky	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Fair	Good
ArC:										
Adjidaumo	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Fair	Good
Summerville	Poor	Fair	Fair	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
BeB:										
Berkshire	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
BgC:										
Berkshire, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Lyme, very bouldery	Very poor	Very poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
BkC:										
Berkshire, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Sunapee, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Bo:										
Borosaprists.										
Fluvaquents	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Ce:										
Carbondale, undrained	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
CgB:										
Colton	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Duxbury	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
CgC:										
Colton	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Duxbury	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
CgD:										
Colton	Very poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Duxbury	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Ck:										
Cook	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Cn:										
Cornish	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
Cp:										
Coveytown	Fair	Fair	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Cr:										
Coveytown, very stony---	Very poor	Poor	Good	Fair	Fair	Fair	Fair	Poor	Fair	Fair
Cook, very stony--------	Very poor	Very poor	Poor	Poor	Poor	Good	Fair	Very poor	Poor	Fair
CsB:										
Crary-------------------	Good	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
CtB:										
Crary, very bouldery----	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Potsdam, very bouldery--	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
CuB:										
Croghan, sand-----------	Poor	Fair	Fair	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
CvA:										
Croghan, loamy fine sand-------------------	Poor	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor
CvB:										
Croghan, loamy fine sand	Poor	Fair	Fair	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
Da:										
Dawson------------------	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Poor	Poor	Fair
DAM:										
Large dams.										
Dd:										
Deford, loamy fine sand-	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Df:										
Deford, mucky loamy fine sand-------------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
DpA:										
Depeyster---------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
DpB:										
Depeyster---------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
DpC:										
Depeyster---------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Dr:										
Dorval------------------	Very poor	Very poor	Very poor	Poor	Poor	Good	Good	Very poor	Poor	Good

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Du:										
Dune land	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
EeB:										
Eelweir	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
EmA:										
Elmwood	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
EmB:										
Elmwood	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Fa:										
Fahey	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
FkA:										
Flackville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
FkB:										
Flackville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
Fu:										
Fluvaquents, frequently flooded	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
Udifluvents, frequently flooded	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
GrB:										
Grenville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
GrC:										
Grenville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
GsD:										
Grenville, very stony	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Gu:										
Guff	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
HaA:										
Hailesboro	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
HaB:										
Hailesboro	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Hc:										
Hannawa	Poor	Fair	Fair	Poor	Poor	Good	Poor	Fair	Poor	Fair

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Open- land wild- life	Wood- land wild- life	Wet- land wild- life
HeB:										
Heuvelton	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
HeC:										
Heuvelton, rolling	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
HkE:										
Heuvelton	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Depeyster	Poor	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
HnA:										
Hogansburg	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
HnB:										
Hogansburg	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
HrB:										
Hogansburg, very stony	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Grenville, very stony	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
IaB:										
Insula	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
InB:										
Insula	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
IrC:										
Insula, rolling	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
IrD:										
Insula, hilly	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
KaA:										
Kalurah	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
KaB:										
Kalurah	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
KbB:										
Kalurah, very stony	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
KbB:										
Pyrities, very stony	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Lc:										
Lovewell	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Ld:										
Loxley	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
LeC:										
Lyman	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
LeD:										
Lyman, very bouldery	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Lt:										
Lyme, very bouldery	Very poor	Poor	Fair	Fair	Fair	Good	Good	Very poor	Fair	Very poor
Tughill, very bouldery	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
MaA:										
Malone	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
MaB:										
Malone	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
MbB:										
Malone, very stony	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
MdB:										
Malone, undulating	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Adjidaumo	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Fair	Good
MeB:										
Malone, very stony	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Adjidaumo	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Fair	Good
MfA:										
Matoon	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Poor
MfB:										
Matoon	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Mh:										
Mino	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Mn:										
Munuscong	Good	Good	Poor	Poor	Poor	Good	Good	Good	Poor	Good
MsA:										
Muskellunge	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
MsB:										
Muskellunge	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
MuB:										
Muskellunge	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
MwB:										
Muskellunge, undulating	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Adjidaumo	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Fair	Good
Na:										
Naumburg	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
NhA:										
Nehasne	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
NhB:										
Nehasne	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
NhC:										
Nehasne	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
NoA:										
Nicholville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
NoB:										
Nicholville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
NoC:										
Nicholville, rolling	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
NrB:										
Nicholville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
OgA:										
Ogdensburg	Fair	Fair	Good	Good	Good	Fair	Fair	Fair	Fair	Fair
OgB:										
Ogdensburg	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Fair	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Pg:										
Pits, gravel and sand	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Ph:										
Pits, quarry	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
PmC:										
Potsdam	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
PoC:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
PoD:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Tunbridge, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
PpD:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Berkshire, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
PsC:										
Potsdam, very bouldery	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Crary, very bouldery	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
PvB:										
Pyrities	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
PvC:										
Pyrities	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
PxD:										
Pyrities, very stony	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
PyB:										
Pyrities, rocky	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
PyC:										
Pyrities, rocky	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
PzC:										
Pyrities, very stony	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Kalurah, very stony	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
QwB:										
Quetico	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Insula	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
RaA:										
Raquette	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
RaB:										
Raquette	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
RaC:										
Raquette	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Rd:										
Redwater	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
RoA:										
Roundabout	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
RoB:										
Roundabout	Poor	Fair	Fair	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
Rt:										
Runeberg	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Ru:										
Runeberg, very stony	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
SaB:										
Salmon	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
SaC:										
Salmon, rolling	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Se:										
Searsport	Very poor	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair
Sg:										
Stockholm	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
ShB:										
Summerville	Fair	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
SkB:										
Summerville, rocky	Fair	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
Gouverneur	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Very poor	Poor	Very poor
SlD:										
Summerville, hilly	Very poor	Poor	Fair	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
SmC:										
Summerville, rolling	Poor	Fair	Fair	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Nehasne, rolling	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SpB:										
Sunapee	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
SsB:										
Sunapee, very bouldery	Very poor	Poor	Good	Good	Good	Poor	Poor	Poor	Good	Poor
Berkshire, very bouldery	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Sw:										
Swanton	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
TdA:										
Trout River	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
TdB:										
Trout River	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
TfB:										
Trout River, very stony	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wet- wild- life
TfB:										
Fahey, very stony	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
TuD:										
Tunbridge	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Lyman	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
TwC:										
Tunbridge, rolling	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Lyman, rolling	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Dawson	Very poor	Poor	Poor	Poor	Poor	Poor	Good	Poor	Poor	Fair
Ua: Udipsamments, smoothed.										
Ue: Udorthents, loamy.										
Uf: Udorthents, clayey.										
Ug: Udorthents, mine waste, acid.										
Uh: Udorthents, mine waste, nonacid.										
Un: Udorthents, refuse substratum.										
Ur: Urban land.										
W: Water.										
WaA:										
Waddington	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Good	Very poor
WaB:										
Waddington	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Good	Very poor
WaC:										
Waddington, rolling	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
WaD: Waddington	Very poor	Fair	Good	Fair	Fair	Very poor	Very poor	Poor	Good	Very poor
WdB: Waddington, very cobbly sandy loam	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Good	Very poor
Wg: Wegatchie	Poor	Fair	Fair	Fair	Fair	Good	Good	Poor	Fair	Good

Table 11.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
021:						
Dawson	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Fluvaquents	Severe: ponding cutbanks cave	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding frost action ponding	Severe: flooding ponding droughty
Loxley	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus too acid ponding
023:						
Loxley	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus too acid ponding
Dawson	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
363A:						
Adams	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
363B:						
Adams	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
363D:						
Adams	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
365:						
Naumburg	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Croghan	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Severe: droughty
376A:						
Colton	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: small stones droughty
Duxbury	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Adams	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
376C:						
Colton	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: small stones droughty
Duxbury	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Adams	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
376D:						
Colton	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope small stones droughty
Duxbury	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Adams	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
380B:						
Colton	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: small stones droughty
Duxbury	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Dawson	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
380D:						
Colton	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope small stones droughty
Duxbury	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Dawson	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
643C:						
Berkshire, very bouldery	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: small stones
643D:						
Berkshire, very bouldery	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
644C:						
Berkshire, rolling, very bouldery	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: small stones

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
644C:						
Lyme, very bouldery-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
644D:						
Berkshire, hilly, very bouldery---------------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Lyme, very bouldery-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
709B:						
Adirondack, very bouldery---------------	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action	Moderate: large stones small stones wetness
Tughill, very bouldery--	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
Lyme, very bouldery-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
741C:						
Potsdam, very bouldery--	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones slope
Tunbridge, very bouldery---------------	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Moderate: large stones slope small stones
Crary, very bouldery----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: slope wetness	Severe: frost action	Moderate: large stones slope wetness

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
741D:						
Potsdam, very bouldery--	Severe: slope wetness	Severe: slope	Severe: slope wetness	Severe: slope	Severe: slope	Severe: slope
Tunbridge, very bouldery---------------	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope
743C:						
Potsdam, very bouldery--	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones slope
743D:						
Potsdam, very bouldery--	Severe: slope wetness	Severe: slope	Severe: slope wetness	Severe: slope	Severe: slope	Severe: slope
745C:						
Crary, very bouldery----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: slope wetness	Severe: frost action	Moderate: large stones slope wetness
Potsdam, very bouldery--	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones slope
747B:						
Crary, very bouldery----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action	Moderate: large stones wetness
Adirondack, very bouldery---------------	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action	Moderate: large stones small stones wetness
807:						
Udorthents, mine waste.						

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
831C:						
Tunbridge, very bouldery	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Moderate: large stones slope small stones
Lyman, very bouldery	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
831D:						
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
831F:						
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
833C:						
Tunbridge, very bouldery	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Moderate: large stones slope small stones
Adirondack, very bouldery	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action	Moderate: large stones small stones wetness
Lyman, very bouldery	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
835C:						
Tunbridge, very bouldery	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Moderate: large stones slope small stones
Borosaprists	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Ricker, very bouldery	Severe: excess humus depth to rock	Severe: low strength depth to rock	Severe: depth to rock	Severe: low strength slope depth to rock	Severe: depth to rock	Severe: excess humus thin layer
861C:						
Lyman	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Ricker, very bouldery	Severe: excess humus depth to rock	Severe: low strength depth to rock	Severe: depth to rock	Severe: low strength slope depth to rock	Severe: depth to rock	Severe: excess humus thin layer
Rock outcrop, very bouldery	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
861D:						
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Ricker, very bouldery	Severe: excess humus slope depth to rock	Severe: low strength slope depth to rock	Severe: slope depth to rock	Severe: low strength slope depth to rock	Severe: slope depth to rock	Severe: excess humus slope thin layer
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
861F:						
Lyman, very bouldery----	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Ricker, very bouldery---	Severe: excess humus slope depth to rock	Severe: low strength slope depth to rock	Severe: slope depth to rock	Severe: low strength slope depth to rock	Severe: slope depth to rock	Severe: excess humus slope thin layer
Rock outcrop------------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
891F:						
Rock outcrop------------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Ricker, very bouldery---	Severe: excess humus slope depth to rock	Severe: low strength slope depth to rock	Severe: slope depth to rock	Severe: low strength slope depth to rock	Severe: slope depth to rock	Severe: excess humus slope thin layer
Lyman, very bouldery----	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
AaB:						
Adams, sand-------------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
AaC:						
Adams, sand-------------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
AaD:						
Adams, sand-------------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
AdB:						
Adams, loamy fine sand--	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AdC:						
Adams, loamy fine sand	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
Ak:						
Adjidaumo, silty clay	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: too clayey wetness
Am:						
Adjidaumo, mucky silty clay	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
Ao:						
Adjidaumo, flooded	Severe: ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding low strength ponding	Severe: flooding too clayey ponding
Ap:						
Adjidaumo, silty clay, rocky	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: too clayey wetness
ArC:						
Adjidaumo	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: too clayey wetness
Summerville	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
BeB:						
Berkshire	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: large stones small stones

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
BgC:						
Berkshire, very bouldery	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: small stones
Lyme, very bouldery	Severe: wetness	Severe: wetness	Severe: wetness	Severe: slope wetness	Severe: frost action wetness	Severe: wetness
BkC:						
Berkshire, very bouldery	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: small stones
Sunapee, very bouldery	Severe: wetness cutbanks cave	Moderate: wetness slope	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones small stones wetness
Bo:						
Borosaprists	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Fluvaquents	Severe: ponding cutbanks cave	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding frost action ponding	Severe: flooding ponding droughty
Ce:						
Carbondale, undrained	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
CgB:						
Colton	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: small stones droughty
Duxbury	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
CgC:						
Colton	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: small stones droughty
Duxbury	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
CgD:						
Colton	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope small stones droughty
Duxbury	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Ck:						
Cook	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
Cn:						
Cornish	Severe: wetness cutbanks cave	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding frost action wetness	Severe: flooding wetness
Cp:						
Coveytown	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness droughty
Cr:						
Coveytown, very stony	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Severe: large stones wetness
Cook, very stony	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
CsB:						
Crary	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
CtB:						
Crary, very bouldery----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action	Moderate: large stones wetness
Potsdam, very bouldery--	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: large stones
CuB:						
Croghan, sand-----------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Severe: droughty
CvA:						
Croghan, loamy fine sand------------------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Severe: droughty
CvB:						
Croghan, loamy fine sand------------------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Severe: droughty
Da:						
Dawson------------------	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
DAM:						
Large dams.						
Dd:						
Deford, loamy fine sand-	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding droughty
Df:						
Deford, mucky loamy fine sand-------------	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
DpA:						
Depeyster	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Severe: frost action	Moderate: wetness
DpB:						
Depeyster	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
DpC:						
Depeyster	Severe: wetness cutbanks cave	Moderate: slope wetness	Severe: wetness	Severe: slope	Severe: frost action	Moderate: slope wetness
Dr:						
Dorval	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: shrink-swell subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Du:						
Dune land	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
EeB:						
Eelweir	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: wetness
EmA:						
Elmwood	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action low strength	Moderate: wetness
EmB:						
Elmwood	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: frost action low strength	Moderate: wetness
Fa:						
Fahey	Severe: small stones cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Slight	Severe: droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
FkA:						
Flackville	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
FkB:						
Flackville	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: wetness droughty
Fu:						
Fluvaquents, frequently flooded	Severe: ponding cutbanks cave	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding ponding	Severe: flooding frost action ponding	Severe: flooding ponding droughty
Udifluvents, frequently flooded	Severe: wetness cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: flooding	Severe: flooding droughty
GrB:						
Grenville	Moderate: dense layer	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
GrC:						
Grenville	Moderate: slope dense layer	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope droughty
GsD:						
Grenville, very stony	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Gu:						
Guff	Severe: ponding depth to rock	Severe: ponding	Severe: ponding depth to rock	Severe: ponding	Severe: frost action low strength ponding	Severe: ponding
HaA:						
Hailesboro	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
HaB:						
Hailesboro	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Hc:						
Hannawa	Severe: wetness depth to rock	Severe: wetness depth to rock	Severe: wetness depth to rock	Severe: wetness depth to rock	Severe: frost action wetness depth to rock	Severe: wetness depth to rock
HeB:						
Heuvelton	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: frost action low strength	Moderate
HeC:						
Heuvelton, rolling	Severe: wetness	Moderate: shrink-swell slope wetness	Severe: wetness	Severe: slope	Severe: frost action low strength	Moderate
HkE:						
Heuvelton	Severe: slope wetness	Severe: slope	Severe: slope wetness	Severe: slope	Severe: frost action low strength slope	Severe: slope
Depeyster	Severe: slope wetness cutbanks cave	Severe: slope	Severe: slope wetness	Severe: slope	Severe: frost action slope	Severe: slope
HnA:						
Hogansburg	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Severe: frost action	Moderate: wetness
HnB:						
Hogansburg	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
HrB:						
Hogansburg, very stony	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Severe: small stones

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
HrB:						
Grenville, very stony---	Moderate: dense layer	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: large stones small stones
IaB:						
Insula------------------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
InB:						
Insula------------------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
IrC:						
Insula, rolling---------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop------------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
IrD:						
Insula, hilly-----------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop------------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
KaA:						
Kalurah-----------------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Severe: frost action	Moderate: wetness
KaB:						
Kalurah-----------------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
KbB:						
Kalurah, very stony-----	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: large stones small stones wetness
Pyrities, very stony----	Moderate: dense layer	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: large stones small stones

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Lc:						
Lovewell	Severe: wetness cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: flooding frost action	Moderate: flooding wetness
Ld:						
Loxley	Severe: excess humus ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus too acid ponding
LeC:						
Lyman	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
LeD:						
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Lt:						
Lyme, very bouldery	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Tughill, very bouldery	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
MaA:						
Malone	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
MaB:						
Malone	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
MbB:						
Malone, very stony	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
MdB:						
Malone, undulating	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Adjidaumo	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
MeB:						
Malone, very stony	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Adjidaumo	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: too clayey wetness
MfA:						
Matoon	Severe: wetness depth to rock	Severe: wetness	Severe: wetness depth to rock	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
MfB:						
Matoon	Severe: wetness depth to rock	Severe: wetness	Severe: wetness depth to rock	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
Mh:						
Mino	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Mn:						
Munuscong	Severe: ponding	Severe: ponding	Severe: shrink-swell ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
MsA:						
Muskellunge-------------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
MsB:						
Muskellunge-------------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
MuB:						
Muskellunge-------------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
MwB:						
Muskellunge, undulating-	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
Adjidaumo---------------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
Na:						
Naumburg----------------	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
NhA:						
Nehasne-----------------	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: depth to rock	Moderate: frost action depth to rock	Moderate: droughty
NhB:						
Nehasne-----------------	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: slope depth to rock	Moderate: frost action depth to rock	Moderate: droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
NhC:						
Nehasne-----------------	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Moderate: slope droughty
NoA:						
Nicholville-------------	Severe: wetness	Severe: frost action	Severe: wetness	Severe: frost action	Severe: frost action	Slight
NoB:						
Nicholville-------------	Severe: wetness	Severe: frost action	Severe: wetness	Severe: frost action	Severe: frost action	Slight
NoC:						
Nicholville, rolling----	Severe: wetness	Severe: frost action	Severe: wetness	Severe: frost action slope	Severe: frost action	Moderate: slope
NrB:						
Nicholville-------------	Severe: wetness	Severe: frost action	Severe: wetness	Severe: frost action	Severe: frost action	Slight
OgA:						
Ogdensburg--------------	Severe: wetness depth to rock	Severe: wetness	Severe: wetness depth to rock	Severe: wetness	Severe: frost action wetness	Severe: wetness
OgB:						
Ogdensburg--------------	Severe: wetness depth to rock	Severe: wetness	Severe: wetness depth to rock	Severe: wetness	Severe: frost action wetness	Severe: wetness
Pg:						
Pits, gravel and sand---	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: small stones too sandy droughty
Ph:						
Pits, quarry------------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
PmC:						
Potsdam	Moderate: slope wetness dense layer	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: slope wetness
PoC:						
Potsdam, very bouldery	Severe: slope wetness	Severe: slope	Severe: slope wetness	Severe: slope	Severe: slope	Severe: slope
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope
PoD:						
Potsdam, very bouldery	Severe: slope wetness	Severe: slope	Severe: slope wetness	Severe: slope	Severe: slope	Severe: slope
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope
PpD:						
Potsdam, very bouldery	Severe: slope wetness	Severe: slope	Severe: slope wetness	Severe: slope	Severe: slope	Severe: slope
Berkshire, very bouldery	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
PsC:						
Potsdam, very bouldery	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones slope
Crary, very bouldery	Severe: wetness	Severe: wetness	Severe: wetness	Severe: slope wetness	Severe: frost action	Moderate: large stones slope wetness

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
PvB:						
Pyrities	Moderate: dense layer	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
PvC:						
Pyrities	Moderate: slope dense layer	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: droughty
PxD:						
Pyrities, very stony	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
PyB:						
Pyrities, rocky	Moderate: dense layer	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
PyC:						
Pyrities, rocky	Moderate: slope dense layer	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: droughty
PzC:						
Pyrities, very stony	Moderate: slope dense layer	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: large stones slope small stones
Kalurah, very stony	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Severe: frost action	Moderate: large stones small stones wetness
QwB:						
Quetico	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
Insula	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
RaA:						
Raquette	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
RaB:						
Raquette	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
RaC:						
Raquette	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope droughty
Rd:						
Redwater	Severe: wetness cutbanks cave	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding frost action wetness	Severe: flooding wetness
RoA:						
Roundabout	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
RoB:						
Roundabout	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Rt:						
Runeberg	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
Ru:						
Runeberg, very stony	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
SaB:						
Salmon	Slight	Slight	Slight	Moderate: slope	Severe: frost action	Slight
SaC:						
Salmon, rolling	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: frost action	Moderate: slope

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Se:						
Searsport	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: excess humus ponding droughty
Sg:						
Stockholm	Severe: wetness cutbanks cave depth to rock	Severe: wetness depth to rock	Severe: wetness depth to rock	Severe: wetness depth to rock	Severe: low strength wetness depth to rock	Severe: wetness depth to rock
ShB:						
Summerville	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
SkB:						
Summerville, rocky	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
Gouverneur	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
SlD:						
Summerville, hilly	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
SmC:						
Summerville, rolling	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Nehasne, rolling	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Moderate: slope droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
SpB:						
Sunapee	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: wetness
SsB:						
Sunapee, very bouldery	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: large stones small stones wetness
Berkshire, very bouldery	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones
Sw:						
Swanton	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness
TdA:						
Trout River	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: large stones	Severe: droughty
TdB:						
Trout River	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones slope	Moderate: large stones	Severe: droughty
TfB:						
Trout River, very stony	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones slope	Moderate: large stones	Severe: droughty
Fahey, very stony	Severe: wetness cutbanks cave	Moderate: large stones wetness	Severe: wetness	Moderate: large stones slope wetness	Moderate: large stones wetness	Severe: large stones droughty
TuD:						
Tunbridge	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
TuD:						
Lyman	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
TwC:						
Tunbridge, rolling	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Moderate: slope droughty
Lyman, rolling	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Dawson	Severe: excess humus ponding cutbanks cave	Severe: low strength subsides ponding	Severe: subsides ponding	Severe: low strength subsides ponding	Severe: frost action subsides ponding	Severe: excess humus ponding
Ua:						
Udipsamments, smoothed.						
Ue:						
Udorthents, loamy.						
Uf:						
Udorthents, clayey.						
Ug:						
Udorthents, mine waste, acid.						
Uh:						
Udorthents, mine waste, nonacid.						
Un:						
Udorthents, refuse substratum.						
Ur:						
Urban land	Variable	Variable	Variable	Variable	Variable	Variable

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
W: Water.						
WaA: Waddington	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Severe: small stones droughty
WaB: Waddington	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Severe: small stones droughty
WaC: Waddington, rolling	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Severe: small stones droughty
WaD: Waddington	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope small stones droughty
WdB: Waddington, very cobbly sandy loam	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones slope	Moderate: frost action large stones	Severe: small stones droughty
Wg: Wegatchie	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action low strength wetness	Severe: wetness

Table 12.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
021:					
Dawson	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Fluvaquents	Severe: flooding percs slowly ponding	Severe: flooding seepage ponding	Severe: flooding seepage depth to rock	Severe: flooding seepage ponding	Poor: small stones too sandy ponding
Loxley	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus too acid ponding
023:					
Loxley	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus too acid ponding
Dawson	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
363A:					
Adams	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
363B:					
Adams	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
363D:					
Adams	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
365:					
Naumburg	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
Croghan	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
376A:					
Colton	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
376A:					
Duxbury	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Adams	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
376C:					
Colton	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Duxbury	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Adams	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
376D:					
Colton	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage small stones too sandy
Duxbury	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage small stones too sandy
Adams	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
380B:					
Colton	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Duxbury	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Dawson	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
380D:					
Colton	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage small stones too sandy

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
380D:					
Duxbury	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage small stones too sandy
Dawson	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
643C:					
Berkshire, very bouldery	Moderate: percs slowly slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
643D:					
Berkshire, very bouldery	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
644C:					
Berkshire, rolling, very bouldery	Moderate: percs slowly slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
Lyme, very bouldery	Severe: wetness	Severe: seepage slope wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: wetness
644D:					
Berkshire, hilly, very bouldery	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
Lyme, very bouldery	Severe: wetness	Severe: seepage slope wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: wetness
709B:					
Adirondack, very bouldery	Severe: percs slowly wetness	Moderate: large stones seepage slope	Severe: wetness too acid	Severe: wetness	Poor: small stones wetness
Tughill, very bouldery	Severe: percs slowly ponding	Severe: ponding	Severe: large stones too acid ponding	Severe: ponding	Poor: small stones ponding
Lyme, very bouldery	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
741C:					
Potsdam, very bouldery-	Severe: percs slowly wetness	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Poor: small stones
Tunbridge, very bouldery--------------	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: depth to rock
Crary, very bouldery---	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Severe: wetness	Poor: small stones wetness
741D:					
Potsdam, very bouldery-	Severe: percs slowly slope wetness	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones
Tunbridge, very bouldery--------------	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
743C:					
Potsdam, very bouldery-	Severe: percs slowly wetness	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Poor: small stones
743D:					
Potsdam, very bouldery-	Severe: percs slowly slope wetness	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones
745C:					
Crary, very bouldery---	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Severe: wetness	Poor: small stones wetness
Potsdam, very bouldery-	Severe: percs slowly wetness	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Poor: small stones
747B:					
Crary, very bouldery---	Severe: percs slowly wetness	Moderate: seepage slope	Severe: wetness	Severe: wetness	Poor: small stones wetness
Adirondack, very bouldery--------------	Severe: percs slowly wetness	Moderate: large stones seepage slope	Severe: wetness too acid	Severe: wetness	Poor: small stones wetness
807:					
Udorthents, mine waste.					

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
831C:					
Tunbridge, very bouldery	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: depth to rock
Lyman, very bouldery	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: seepage depth to rock	Poor: depth to rock
831D:					
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
831F:					
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
833C:					
Tunbridge, very bouldery	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: depth to rock
Adirondack, very bouldery	Severe: percs slowly wetness	Moderate: large stones seepage slope	Severe: wetness too acid	Severe: wetness	Poor: small stones wetness
Lyman, very bouldery	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: seepage depth to rock	Poor: depth to rock
835C:					
Tunbridge, very bouldery	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: depth to rock
Borosaprists	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
835C:					
Ricker, very bouldery	Severe: depth to rock	Severe: excess humus slope depth to rock	Severe: excess humus depth to rock	Severe: depth to rock	Poor: area reclaim excess humus
861C:					
Lyman	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: seepage depth to rock	Poor: depth to rock
Ricker, very bouldery	Severe: depth to rock	Severe: excess humus slope depth to rock	Severe: excess humus depth to rock	Severe: depth to rock	Poor: area reclaim excess humus
Rock outcrop, very bouldery	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
861D:					
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
Ricker, very bouldery	Severe: slope depth to rock	Severe: excess humus slope depth to rock	Severe: excess humus slope depth to rock	Severe: slope depth to rock	Poor: area reclaim excess humus slope
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
861F:					
Lyman, very bouldery	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
Ricker, very bouldery	Severe: slope depth to rock	Severe: excess humus slope depth to rock	Severe: excess humus slope depth to rock	Severe: slope depth to rock	Poor: area reclaim excess humus slope
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
891F:					
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
Ricker, very bouldery	Severe: slope depth to rock	Severe: excess humus slope depth to rock	Severe: excess humus slope depth to rock	Severe: slope depth to rock	Poor: area reclaim excess humus slope

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
891F:					
Lyman, very bouldery---	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
AaB:					
Adams, sand------------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
AaC:					
Adams, sand------------	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
AaD:					
Adams, sand------------	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
AdB:					
Adams, loamy fine sand-	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
AdC:					
Adams, loamy fine sand-	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
Ak:					
Adjidaumo, silty clay--	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Am:					
Adjidaumo, mucky silty clay------------------	Severe: percs slowly ponding	Severe: ponding	Severe: too clayey ponding	Severe: ponding	Poor: hard to pack too clayey ponding
Ao:					
Adjidaumo, flooded-----	Severe: flooding percs slowly ponding	Severe: flooding ponding	Severe: flooding too clayey ponding	Severe: flooding ponding	Poor: hard to pack too clayey ponding
Ap:					
Adjidaumo, silty clay, rocky-----------------	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
ArC:					
Adjidaumo--------------	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
ArC:					
Summerville	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
BeB:					
Berkshire	Moderate: percs slowly	Severe: seepage	Severe: seepage	Severe: seepage	Poor: small stones
BgC:					
Berkshire, very bouldery	Moderate: percs slowly slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
Lyme, very bouldery	Severe: wetness	Severe: seepage slope wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: wetness
BkC:					
Berkshire, very bouldery	Moderate: percs slowly slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
Sunapee, very bouldery	Severe: wetness	Severe: seepage slope wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: slope small stones wetness
Bo:					
Borosaprists	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Fluvaquents	Severe: flooding percs slowly ponding	Severe: flooding seepage ponding	Severe: flooding seepage depth to rock	Severe: flooding seepage ponding	Poor: small stones too sandy ponding
Ce:					
Carbondale, undrained	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
CgB:					
Colton	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Duxbury	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
CgC:					
Colton	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Duxbury	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
CgD:					
Colton	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage small stones too sandy
Duxbury	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage small stones too sandy
Ck:					
Cook	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: small stones wetness
Cn:					
Cornish	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Poor: wetness
Cp:					
Coveytown	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: small stones wetness
Cr:					
Coveytown, very stony	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Cook, very stony	Severe: percs slowly wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: seepage wetness	Poor: small stones wetness
CsB:					
Crary	Severe: percs slowly wetness	Moderate: seepage slope	Severe: wetness	Severe: wetness	Poor: wetness
CtB:					
Crary, very bouldery	Severe: percs slowly wetness	Moderate: seepage slope	Severe: wetness	Severe: wetness	Poor: small stones wetness
Potsdam, very bouldery	Severe: percs slowly wetness	Moderate: seepage slope	Moderate: wetness	Moderate: wetness	Poor: small stones

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
CuB:					
Croghan, sand----------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
CvA:					
Croghan, loamy fine sand------------------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
CvB:					
Croghan, loamy fine sand------------------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
Da:					
Dawson-----------------	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
DAM:					
Large dams.					
Dd:					
Deford, loamy fine sand------------------	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Df:					
Deford, mucky loamy fine sand-------------	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
DpA:					
Depeyster--------------	Severe: percs slowly wetness	Severe: wetness	Severe: too sandy wetness	Severe: wetness	Fair: too clayey too sandy
DpB:					
Depeyster--------------	Severe: percs slowly wetness	Severe: wetness	Severe: too sandy wetness	Severe: wetness	Fair: too clayey too sandy
DpC:					
Depeyster--------------	Severe: percs slowly wetness	Severe: slope wetness	Severe: too sandy wetness	Severe: wetness	Fair: slope too clayey too sandy

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Dr:					
Dorval	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
Du:					
Dune land	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
EeB:					
Eelweir	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: too sandy
EmA:					
Elmwood	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage	Poor: hard to pack too clayey
EmB:					
Elmwood	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage	Poor: hard to pack too clayey
Fa:					
Fahey	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: area reclaim thin layer
FkA:					
Flackville	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage	Poor: too clayey
FkB:					
Flackville	Severe: percs slowly wetness poor filter	Severe: seepage	Severe: too clayey wetness	Severe: seepage	Poor: too clayey
Fu:					
Fluvaquents, frequently flooded	Severe: flooding percs slowly ponding	Severe: flooding seepage ponding	Severe: flooding seepage depth to rock	Severe: flooding seepage ponding	Poor: small stones too sandy ponding
Udifluvents, frequently flooded	Severe: flooding percs slowly wetness	Severe: flooding seepage	Severe: flooding seepage depth to rock	Severe: flooding seepage wetness	Poor: seepage small stones too sandy
GrB:					
Grenville	Severe: percs slowly	Moderate: seepage slope	Slight	Slight	Poor: small stones

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
GrC:					
Grenville	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
GsD:					
Grenville, very stony	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones
Gu:					
Guff	Severe: percs slowly ponding depth to rock	Severe: ponding depth to rock	Severe: too clayey ponding depth to rock	Severe: ponding depth to rock	Poor: hard to pack too clayey depth to rock
HaA:					
Hailesboro	Severe: percs slowly wetness	Slight	Severe: wetness	Severe: wetness	Poor: wetness
HaB:					
Hailesboro	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Severe: wetness	Poor: wetness
Hc:					
Hannawa	Severe: wetness depth to rock	Severe: seepage wetness depth to rock	Severe: seepage wetness depth to rock	Severe: wetness depth to rock	Poor: wetness depth to rock
HeB:					
Heuvelton	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Moderate: wetness	Poor: too clayey
HeC:					
Heuvelton, rolling	Severe: percs slowly wetness	Severe: slope wetness	Severe: too clayey wetness	Moderate: slope wetness	Poor: too clayey
HkE:					
Heuvelton	Severe: percs slowly slope wetness	Severe: slope wetness	Severe: slope too clayey wetness	Severe: slope	Poor: slope too clayey
Depeyster	Severe: percs slowly slope wetness	Severe: slope wetness	Severe: slope too sandy wetness	Severe: slope wetness	Poor: slope
HnA:					
Hogansburg	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Poor: small stones
HnB:					
Hogansburg	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Poor: small stones

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
HrB:					
Hogansburg, very stony-	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Poor: small stones
Grenville, very stony--	Severe: percs slowly	Moderate: seepage slope	Slight	Slight	Poor: small stones
IaB:					
Insula-----------------	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: small stones depth to rock
InB:					
Insula-----------------	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: small stones depth to rock
IrC:					
Insula, rolling--------	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: small stones depth to rock
Rock outcrop-----------	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
IrD:					
Insula, hilly----------	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: small stones depth to rock
Rock outcrop-----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
KaA:					
Kalurah----------------	Severe: percs slowly wetness	Slight	Severe: wetness	Moderate: wetness	Fair: wetness
KaB:					
Kalurah----------------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: wetness
KbB:					
Kalurah, very stony----	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Poor: small stones
Pyrities, very stony---	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
Lc:					
Lovewell---------------	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Fair: wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Ld:					
Loxley-----------------	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus too acid ponding
LeC:					
Lyman------------------	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: seepage depth to rock	Poor: depth to rock
Rock outcrop-----------	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
LeD:					
Lyman, very bouldery---	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
Rock outcrop-----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
Lt:					
Lyme, very bouldery----	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Poor: wetness
Tughill, very bouldery-	Severe: percs slowly ponding	Severe: ponding	Severe: large stones too acid ponding	Severe: ponding	Poor: small stones ponding
MaA:					
Malone-----------------	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: small stones wetness
MaB:					
Malone-----------------	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: small stones wetness
MbB:					
Malone, very stony-----	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: small stones wetness
MdB:					
Malone, undulating-----	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: small stones wetness
Adjidaumo--------------	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
MeB:					
Malone, very stony	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: small stones wetness
Adjidaumo	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
MfA:					
Matoon	Severe: percs slowly wetness depth to rock	Severe: wetness depth to rock	Severe: too clayey wetness depth to rock	Severe: wetness depth to rock	Poor: hard to pack too clayey depth to rock
MfB:					
Matoon	Severe: percs slowly wetness depth to rock	Severe: wetness depth to rock	Severe: too clayey wetness depth to rock	Severe: wetness depth to rock	Poor: hard to pack too clayey depth to rock
Mh:					
Mino	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Mn:					
Munuscong	Severe: percs slowly ponding	Severe: seepage ponding	Severe: too clayey ponding	Severe: seepage ponding	Poor: hard to pack too clayey ponding
MsA:					
Muskellunge	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
MsB:					
Muskellunge	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
MuB:					
Muskellunge	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
MwB:					
Muskellunge, undulating	Severe: percs slowly wetness	Severe: wetness	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness
Adjidaumo	Severe: percs slowly wetness	Slight	Severe: too clayey wetness	Severe: wetness	Poor: hard to pack too clayey wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Na:					
Naumburg---------------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy wetness
NhA:					
Nehasne----------------	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: small stones depth to rock
NhB:					
Nehasne----------------	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: small stones depth to rock
NhC:					
Nehasne----------------	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: small stones depth to rock
NoA:					
Nicholville------------	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Good
NoB:					
Nicholville------------	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Good
NoC:					
Nicholville, rolling---	Severe: wetness	Severe: slope wetness	Severe: wetness	Moderate: slope wetness	Fair: slope
NrB:					
Nicholville------------	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: wetness	Good
OgA:					
Ogdensburg-------------	Severe: wetness depth to rock	Severe: seepage depth to rock	Severe: seepage wetness depth to rock	Severe: seepage wetness depth to rock	Poor: small stones wetness depth to rock
OgB:					
Ogdensburg-------------	Severe: wetness depth to rock	Severe: seepage depth to rock	Severe: seepage wetness depth to rock	Severe: seepage wetness depth to rock	Poor: small stones wetness depth to rock
Pg:					
Pits, gravel and sand--	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Slight	Poor: seepage small stones too sandy
Ph:					
Pits, quarry-----------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
PmC:					
Potsdam	Severe: percs slowly	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Fair: slope small stones wetness
PoC:					
Potsdam, very bouldery	Severe: percs slowly slope wetness	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
PoD:					
Potsdam, very bouldery	Severe: percs slowly slope wetness	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones
Tunbridge, very bouldery	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
PpD:					
Potsdam, very bouldery	Severe: percs slowly slope wetness	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones
Berkshire, very bouldery	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
PsC:					
Potsdam, very bouldery	Severe: percs slowly wetness	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Poor: small stones
Crary, very bouldery	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Severe: wetness	Poor: small stones wetness
PvB:					
Pyrities	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
PvC:					
Pyrities	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
PxD:					
Pyrities, very stony	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
PyB:					
Pyrities, rocky	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
PyC:					
Pyrities, rocky	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
PzC:					
Pyrities, very stony	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
Kalurah, very stony	Severe: percs slowly wetness	Severe: slope wetness	Severe: wetness	Moderate: slope wetness	Poor: small stones
QwB:					
Quetico	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Rock outcrop	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Insula	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: small stones depth to rock
RaA:					
Raquette	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
RaB:					
Raquette	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
RaC:					
Raquette	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Rd:					
Redwater	Severe: flooding wetness poor filter	Severe: flooding seepage wetness	Severe: flooding seepage depth to rock	Severe: flooding seepage wetness	Poor: thin layer wetness
RoA:					
Roundabout	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
RoB:					
Roundabout	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Rt:					
Runeberg	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Ru:					
Runeberg, very stony	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
SaB:					
Salmon	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
SaC:					
Salmon, rolling	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Se:					
Searsport	Severe: ponding poor filter	Severe: excess humus seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage too sandy ponding
Sg:					
Stockholm	Severe: percs slowly wetness depth to rock	Severe: seepage depth to rock	Severe: too clayey wetness depth to rock	Severe: seepage wetness depth to rock	Poor: too clayey wetness depth to rock
ShB:					
Summerville	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
SkB:					
Summerville, rocky	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Gouverneur	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
SlD:					
Summerville, hilly	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
Rock outcrop	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope depth to rock
SmC:					
Summerville, rolling	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
Rock outcrop	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
SmC:					
Nehasne, rolling	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: small stones depth to rock
SpB:					
Sunapee	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: wetness
SsB:					
Sunapee, very bouldery	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: seepage wetness	Fair: small stones wetness
Berkshire, very bouldery	Moderate: percs slowly	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones
Sw:					
Swanton	Severe: percs slowly wetness	Severe: seepage	Severe: too clayey wetness	Severe: seepage wetness	Poor: hard to pack too clayey wetness
TdA:					
Trout River	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
TdB:					
Trout River	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
TfB:					
Trout River, very stony	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Fahey, very stony	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
TuD:					
Tunbridge	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope small stones depth to rock
Lyman	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
TwC:					
Tunbridge, rolling-----	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: small stones depth to rock
Lyman, rolling---------	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: seepage depth to rock	Poor: small stones depth to rock
Dawson-----------------	Severe: percs slowly subsides ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
Ua: Udipsamments, smoothed.					
Ue: Udorthents, loamy.					
Uf: Udorthents, clayey.					
Ug: Udorthents, mine waste, acid.					
Uh: Udorthents, mine waste, nonacid.					
Un: Udorthents, refuse substratum.					
Ur:					
Urban land-------------	Variable	Variable	Variable	Variable	Variable
W: Water.					
WaA:					
Waddington-------------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
WaB:					
Waddington-------------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
WaC:					
Waddington, rolling----	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
WaD:					
Waddington-------------	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage small stones too sandy
WdB:					
Waddington, very cobbly sandy loam-----	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Wg:					
Wegatchie--------------	Severe: percs slowly wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness

Table 13.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
021:				
Dawson	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
Fluvaquents	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too sandy
Loxley	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness too acid
023:				
Loxley	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness too acid
Dawson	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
363A:				
Adams	Good	Probable	Improbable: too sandy	Poor: too sandy
363B:				
Adams	Good	Probable	Improbable: too sandy	Poor: too sandy
363D:				
Adams	Poor: slope	Probable	Improbable: too sandy	Poor: slope too sandy
365:				
Naumburg	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Croghan	Fair: wetness	Probable	Improbable: too sandy	Fair: small stones too sandy
376A:				
Colton	Good	Probable	Probable	Poor: small stones too sandy
Duxbury	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Adams	Good	Probable	Improbable: too sandy	Poor: too sandy

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
376C:				
Colton	Good	Probable	Probable	Poor: small stones too sandy
Duxbury	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Adams	Good	Probable	Improbable: too sandy	Poor: too sandy
376D:				
Colton	Poor: slope	Probable	Probable	Poor: slope small stones too sandy
Duxbury	Poor: slope	Probable	Probable	Poor: area reclaim small stones too sandy
Adams	Poor: slope	Probable	Improbable: too sandy	Poor: slope too sandy
380B:				
Colton	Good	Probable	Probable	Poor: small stones too sandy
Duxbury	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Dawson	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
380D:				
Colton	Poor: slope	Probable	Probable	Poor: slope small stones too sandy
Duxbury	Poor: slope	Probable	Probable	Poor: area reclaim small stones too sandy
Dawson	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
643C:				
Berkshire, very bouldery	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
643D:				
Berkshire, very bouldery	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
644C:				
Berkshire, rolling, very bouldery	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Lyme, very bouldery	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
644D:				
Berkshire, hilly, very bouldery	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
Lyme, very bouldery	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
709B:				
Adirondack, very bouldery	Fair: large stones wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Tughill, very bouldery	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness
Lyme, very bouldery	Poor: wetness	Improbable: excess fines	Improbable: excess fines	---
741C:				
Potsdam, very bouldery	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Tunbridge, very bouldery	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Crary, very bouldery	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
741D:				
Potsdam, very bouldery	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
Tunbridge, very bouldery	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
743C:				
Potsdam, very bouldery--	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
743D:				
Potsdam, very bouldery--	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
745C:				
Crary, very bouldery----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Potsdam, very bouldery--	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
747B:				
Crary, very bouldery----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Adirondack, very bouldery---------------	Fair: large stones wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
807:				
Udorthents, mine waste.				
831C:				
Tunbridge, very bouldery---------------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Lyman, very bouldery----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
831D:				
Tunbridge, very bouldery---------------	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
Lyman, very bouldery----	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
831F:				
Tunbridge, very bouldery---------------	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
Lyman, very bouldery----	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
833C:				
Tunbridge, very bouldery	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Adirondack, very bouldery	Fair: large stones wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Lyman, very bouldery	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
835C:				
Tunbridge, very bouldery	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Borosaprists	Poor: wetness	Probable: excess humus	Improbable: too sandy	Poor: excess humus wetness
Ricker, very bouldery	Poor: area reclaim thin layer	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim excess humus
861C:				
Lyman	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Ricker, very bouldery	Poor: area reclaim thin layer	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim excess humus
Rock outcrop, very bouldery	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
861D:				
Lyman, very bouldery	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
Ricker, very bouldery	Poor: area reclaim slope thin layer	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim excess humus slope
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
861F:				
Lyman, very bouldery	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
861F:				
Ricker, very bouldery---	Poor: area reclaim slope thin layer	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim excess humus slope
Rock outcrop-----------	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
891F:				
Rock outcrop-----------	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Ricker, very bouldery---	Poor: area reclaim slope thin layer	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim excess humus slope
Lyman, very bouldery----	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
AaB:				
Adams, sand------------	Good	Probable	Improbable: too sandy	Poor: too sandy
AaC:				
Adams, sand------------	Good	Probable	Improbable: too sandy	Poor: too sandy
AaD:				
Adams, sand------------	Poor: slope	Probable	Improbable: too sandy	Poor: slope too sandy
AdB:				
Adams, loamy fine sand--	Good	Probable	Improbable: too sandy	Poor: too sandy
AdC:				
Adams, loamy fine sand--	Good	Probable	Improbable: too sandy	Poor: too sandy
Ak:				
Adjidaumo, silty clay---	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Am:				
Adjidaumo, mucky silty clay------------------	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Ao:				
Adjidaumo, flooded------	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Ap:				
Adjidaumo, silty clay, rocky	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
ArC:				
Adjidaumo	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Summerville	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
BeB:				
Berkshire	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
BgC:				
Berkshire, very bouldery	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Lyme, very bouldery	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
BkC:				
Berkshire, very bouldery	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Sunapee, very bouldery	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Bo:				
Borosaprists	Poor: wetness	Probable: excess humus	Improbable: too sandy	Poor: excess humus wetness
Fluvaquents	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too sandy
Ce:				
Carbondale, undrained	Poor: wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness
CgB:				
Colton	Good	Probable	Probable	Poor: small stones too sandy
Duxbury	Good	Probable	Probable	Poor: area reclaim small stones too sandy

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
CgC:				
Colton	Good	Probable	Probable	Poor: small stones too sandy
Duxbury	Good	Probable	Probable	Poor: area reclaim small stones too sandy
CgD:				
Colton	Poor: slope	Probable	Probable	Poor: slope small stones too sandy
Duxbury	Poor: slope	Probable	Probable	Poor: area reclaim small stones too sandy
Ck:				
Cook	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too sandy
Cn:				
Cornish	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Cp:				
Coveytown	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Cr:				
Coveytown, very stony	Poor: wetness	Improbable: thin layer	Improbable: thin layer	Poor: large stones wetness
Cook, very stony	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too sandy
CsB:				
Crary	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
CtB:				
Crary, very bouldery	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Potsdam, very bouldery	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
CuB:				
Croghan, sand	Fair: wetness	Probable	Improbable: too sandy	Poor: too sandy

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
CvA:				
Croghan, loamy fine sand	Fair: wetness	Probable	Improbable: too sandy	Fair: small stones too sandy
CvB:				
Croghan, loamy fine sand	Fair: wetness	Probable	Improbable: too sandy	Fair: small stones too sandy
Da:				
Dawson	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
DAM:				
Large dams.				
Dd:				
Deford, loamy fine sand	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
Df:				
Deford, mucky loamy fine sand	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
DpA:				
Depeyster	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too clayey
DpB:				
Depeyster	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: thin layer too clayey
DpC:				
Depeyster	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: slope thin layer too clayey
Dr:				
Dorval	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness
Du:				
Dune land	Fair: slope	Probable	Improbable: too sandy	Poor: slope too sandy
EeB:				
Eelweir	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: small stones thin layer

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
EmA:				
Elmwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
EmB:				
Elmwood	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Fa:				
Fahey	Good	Probable	Probable	Poor: area reclaim small stones too sandy
FkA:				
Flackville	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
FkB:				
Flackville	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
Fu:				
Fluvaquents, frequently flooded	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too sandy
Udifluvents, frequently flooded	Fair: wetness depth to rock	Probable	Probable	Poor: area reclaim small stones too sandy
GrB:				
Grenville	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
GrC:				
Grenville	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
GsD:				
Grenville, very stony	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
Gu:				
Guff	Poor: low strength wetness depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
HaA:				
Hailesboro	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
HaB:				
Hailesboro	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Hc:				
Hannawa-----------------	Poor: wetness depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: large stones wetness depth to rock
HeB:				
Heuvelton---------------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
HeC:				
Heuvelton, rolling------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
HkE:				
Heuvelton---------------	Poor: low strength slope	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
Depeyster---------------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
HnA:				
Hogansburg--------------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
HnB:				
Hogansburg--------------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
HrB:				
Hogansburg, very stony--	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Grenville, very stony---	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
IaB:				
Insula------------------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
InB:				
Insula------------------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
IrC:				
Insula, rolling---------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Rock outcrop------------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
IrD:				
Insula, hilly	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
KaA:				
Kalurah	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Good
KaB:				
Kalurah	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Good
KbB:				
Kalurah, very stony	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Pyrities, very stony	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Lc:				
Lovewell	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too sandy
Ld:				
Loxley	Poor: low strength wetness	Improbable: excess humus	Improbable: excess humus	Poor: excess humus wetness too acid
LeC:				
Lyman	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
LeD:				
Lyman, very bouldery	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Lt:				
Lyme, very bouldery	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Tughill, very bouldery	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
MaA:				
Malone	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness
MaB:				
Malone	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness
MbB:				
Malone, very stony	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness
MdB:				
Malone, undulating	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness
Adjidaumo	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
MeB:				
Malone, very stony	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness
Adjidaumo	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
MfA:				
Matoon	Poor: low strength wetness depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
MfB:				
Matoon	Poor: low strength wetness depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Mh:				
Mino	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Mn:				
Munuscong	Poor: low strength shrink-swell wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
MsA:				
Muskellunge	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
MsB:				
Muskellunge-------------	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
MuB:				
Muskellunge-------------	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
MwB:				
Muskellunge, undulating-	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
Adjidaumo---------------	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
Na:				
Naumburg----------------	Poor: wetness	Probable	Improbable: too sandy	Poor: too sandy wetness
NhA:				
Nehasne-----------------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
NhB:				
Nehasne-----------------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
NhC:				
Nehasne-----------------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
NoA:				
Nicholville-------------	Poor: frost action	Improbable: excess fines	Improbable: excess fines	Good
NoB:				
Nicholville-------------	Poor: frost action	Improbable: excess fines	Improbable: excess fines	Good
NoC:				
Nicholville, rolling----	Poor: frost action	Improbable: excess fines	Improbable: excess fines	Fair: slope
NrB:				
Nicholville-------------	Poor: frost action	Improbable: excess fines	Improbable: excess fines	Good
OgA:				
Ogdensburg--------------	Poor: wetness depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
OgB:				
Ogdensburg--------------	Poor: wetness depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Pg:				
Pits, gravel and sand---	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Ph:				
Pits, quarry-----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
PmC:				
Potsdam----------------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
PoC:				
Potsdam, very bouldery--	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
Tunbridge, very bouldery--------------	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
PoD:				
Potsdam, very bouldery--	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
Tunbridge, very bouldery--------------	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
PpD:				
Potsdam, very bouldery--	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
Berkshire, very bouldery--------------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
PsC:				
Potsdam, very bouldery--	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Crary, very bouldery----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
PvB:				
Pyrities---------------	Good	Probable	Probable	Poor: area reclaim small stones

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
PvC:				
Pyrities	Good	Probable	Probable	Poor: area reclaim small stones
PxD:				
Pyrities, very stony	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones
PyB:				
Pyrities, rocky	Good	Probable	Probable	Poor: area reclaim small stones
PyC:				
Pyrities, rocky	Good	Probable	Probable	Poor: area reclaim small stones
PzC:				
Pyrities, very stony	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Kalurah, very stony	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
QwB:				
Quetico	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Insula	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
RaA:				
Raquette	Good	Probable	Probable	Poor: area reclaim small stones
RaB:				
Raquette	Good	Probable	Probable	Poor: area reclaim small stones
RaC:				
Raquette	Good	Probable	Probable	Poor: area reclaim small stones
Rd:				
Redwater	Poor: wetness	Probable	Probable	Poor: area reclaim small stones wetness

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
RoA:				
Roundabout	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
RoB:				
Roundabout	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Rt:				
Runeberg	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
Ru:				
Runeberg, very stony	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones wetness
SaB:				
Salmon	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Good
SaC:				
Salmon, rolling	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: slope
Se:				
Searsport	Poor: wetness	Probable	Probable	Poor: area reclaim too sandy wetness
Sg:				
Stockholm	Poor: low strength wetness depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness depth to rock
ShB:				
Summerville	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
SkB:				
Summerville, rocky	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Gouverneur	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
SlD:				
Summerville, hilly	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Rock outcrop	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
SmC:				
Summerville, rolling	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
SmC:				
Rock outcrop	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Nehasne, rolling	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
SpB:				
Sunapee	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
SsB:				
Sunapee, very bouldery	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Berkshire, very bouldery	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Sw:				
Swanton	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey wetness
TdA:				
Trout River	Fair: large stones	Probable	Probable	Poor: area reclaim small stones
TdB:				
Trout River	Fair: large stones	Probable	Probable	Poor: area reclaim small stones
TfB:				
Trout River, very stony	Fair: large stones	Probable	Probable	Poor: area reclaim small stones too sandy
Fahey, very stony	Fair: large stones wetness	Probable	Probable	Poor: small stones
TuD:				
Tunbridge	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
Lyman	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
TwC:				
Tunbridge, rolling	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Lyman, rolling	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones depth to rock

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
TwC:				
Dawson------------------	Poor: wetness	Probable	Improbable: too sandy	Poor: excess humus wetness
Ua:				
Udipsamments, smoothed.				
Ue:				
Udorthents, loamy.				
Uf:				
Udorthents, clayey.				
Ug:				
Udorthents, mine waste, acid.				
Uh:				
Udorthents, mine waste, nonacid.				
Un:				
Udorthents, refuse substratum.				
Ur:				
Urban land--------------	Variable	Variable	Variable	Variable
W:				
Water.				
WaA:				
Waddington--------------	Good	Improbable: small stones	Probable	Poor: area reclaim small stones too sandy
WaB:				
Waddington--------------	Good	Improbable: small stones	Probable	Poor: area reclaim small stones too sandy
WaC:				
Waddington, rolling-----	Good	Improbable: small stones	Probable	Poor: area reclaim small stones too sandy
WaD:				
Waddington--------------	Poor: slope	Improbable: small stones	Probable	Poor: area reclaim small stones too sandy
WdB:				
Waddington, very cobbly sandy loam-------------	Fair: large stones	Improbable: small stones	Probable	Poor: area reclaim small stones too sandy

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Wg:				
Wegatchie---------------	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness

Table 14.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
021:							
Dawson-----------------	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth ponding	Limitation: ponding	Limitation: rooting depth wetness
Fluvaquents------------	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Limitation: flooding percs slowly ponding	Limitation: ponding droughty	Limitation: percs slowly too sandy ponding	Limitation: percs slowly wetness droughty
Loxley-----------------	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Limitation: frost action subsides ponding	Limitation: too acid ponding	Limitation: ponding	Limitation: wetness
023:							
Loxley-----------------	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Limitation: frost action subsides ponding	Limitation: too acid ponding	Limitation: ponding	Limitation: wetness
Dawson-----------------	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth ponding	Limitation: ponding	Limitation: rooting depth wetness
363A:							
Adams------------------	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: too sandy soil blowing	Limitation: droughty
363B:							
Adams------------------	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
363D:							
Adams------------------	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
365:							
Naumburg	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: wetness droughty
Croghan	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: droughty
376A:							
Colton	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: large stones too sandy	Limitation: large stones droughty
Duxbury	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Favorable	Limitation: erodes easily too sandy	Limitation: erodes easily
Adams	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: too sandy soil blowing	Limitation: droughty
376C:							
Colton	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Duxbury	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
Adams	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
376D:							
Colton	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
376D:							
Duxbury	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
Adams	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
380B:							
Colton	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Duxbury	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
Dawson	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth ponding	Limitation: ponding	Limitation: rooting depth wetness
380D:							
Colton	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Duxbury	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
Dawson	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth ponding	Limitation: ponding	Limitation: rooting depth wetness

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
643C:							
Berkshire, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	---
643D:							
Berkshire, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	---
644C:							
Berkshire, rolling, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	---
Lyme, very bouldery	Severe: seepage	Severe: piping wetness	Moderate: slow refill	Unranked: frost action slope	---	Unranked: slope wetness	Unranked: slope wetness
644D:							
Berkshire, hilly, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	---
Lyme, very bouldery	Severe: seepage	Severe: piping wetness	Moderate: slow refill	Unranked: frost action slope	---	Unranked: slope wetness	Unranked: slope wetness
709B:							
Adirondack, very bouldery	Moderate: seepage slope	Severe: seepage	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones	Limitation: large stones wetness
Tughill, very bouldery	Slight	Severe: large stones seepage ponding	Severe: slow refill	Limitation: large stones percs slowly ponding	Limitation: large stones ponding	Limitation: percs slowly ponding	Limitation: rooting depth wetness droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
709B:							
Lyme, very bouldery----	Severe: seepage	Severe: piping wetness	Moderate: slow refill	Unranked: frost action slope	---	Unranked: wetness	Unranked: wetness
741C:							
Potsdam, very bouldery-	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
Tunbridge, very bouldery--------------	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Crary, very bouldery---	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones slope	Limitation: large stones slope wetness
741D:							
Potsdam, very bouldery-	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
Tunbridge, very bouldery--------------	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
743C:							
Potsdam, very bouldery-	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
743D:							
Potsdam, very bouldery-	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
745C:							
Crary, very bouldery	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones slope	Limitation: large stones slope wetness
Potsdam, very bouldery	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
747B:							
Crary, very bouldery	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones	Limitation: large stones wetness
Adirondack, very bouldery	Moderate: seepage slope	Severe: seepage	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones	Limitation: large stones wetness
807:							
Udorthents, mine waste.							
831C:							
Tunbridge, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Lyman, very bouldery	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
831D:							
Tunbridge, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
831D:							
Lyman, very bouldery	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
831F:							
Tunbridge, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Lyman, very bouldery	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
833C:							
Tunbridge, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Adirondack, very bouldery	Moderate: seepage slope	Severe: seepage	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones	Limitation: large stones wetness
Lyman, very bouldery	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
835C:							
Tunbridge, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
835C:							
Borosaprists	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth ponding	Limitation: ponding	Limitation: rooting depth wetness
Ricker, very bouldery	Severe: slope depth to rock	Severe: thin layer	Severe: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
861C:							
Lyman	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Ricker, very bouldery	Severe: slope depth to rock	Severe: thin layer	Severe: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Rock outcrop, very bouldery	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
861D:							
Lyman, very bouldery	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Ricker, very bouldery	Severe: slope depth to rock	Severe: thin layer	Severe: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Rock outcrop	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
861F:							
Lyman, very bouldery	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
861F:							
Ricker, very bouldery--	Severe: slope depth to rock	Severe: thin layer	Severe: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Rock outcrop-----------	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
891F:							
Rock outcrop-----------	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Ricker, very bouldery--	Severe: slope depth to rock	Severe: thin layer	Severe: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Lyman, very bouldery---	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
AaB:							
Adams, sand------------	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: too sandy soil blowing	Limitation: droughty
AaC:							
Adams, sand------------	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
AaD:							
Adams, sand------------	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
AdB: Adams, loamy fine sand-	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy soil blowing	Limitation: droughty
AdC: Adams, loamy fine sand-	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
Ak: Adjidaumo, silty clay--	Slight	Severe: wetness	Severe: slow refill	Limitation: frost action percs slowly	Limitation: percs slowly slow intake wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
Am: Adjidaumo, mucky silty clay------------------	Slight	Severe: ponding	Severe: slow refill	Limitation: frost action percs slowly ponding	Limitation: erodes easily percs slowly ponding	Limitation: erodes easily percs slowly ponding	Limitation: erodes easily percs slowly wetness
Ao: Adjidaumo, flooded-----	Slight	Severe: ponding	Severe: slow refill	Limitation: flooding percs slowly ponding	Limitation: percs slowly slow intake ponding	Limitation: erodes easily percs slowly ponding	Limitation: erodes easily percs slowly wetness
Ap: Adjidaumo, silty clay, rocky-----------------	Slight	Severe: wetness	Severe: slow refill	Limitation: frost action percs slowly	Limitation: percs slowly slow intake wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
ArC: Adjidaumo--------------	Slight	Severe: wetness	Severe: slow refill	Limitation: frost action percs slowly	Limitation: percs slowly slow intake wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
ArC:							
Summerville	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock droughty
BeB:							
Berkshire	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing	Limitation: large stones soil blowing	Limitation: large stones
BgC:							
Berkshire, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	---
Lyme, very bouldery	Severe: seepage slope	Severe: piping wetness	Moderate: slow refill	Unranked: frost action slope	---	Unranked: slope wetness	Unranked: slope wetness
BkC:							
Berkshire, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	---
Sunapee, very bouldery	Severe: seepage slope	Severe: piping wetness	Severe: cutbanks cave	Unranked: slope cutbanks cave	---	Unranked: slope too sandy wetness	Unranked: slope
Bo:							
Borosaprists	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth ponding	Limitation: ponding	Limitation: rooting depth wetness
Fluvaquents	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Limitation: flooding percs slowly ponding	Limitation: ponding droughty	Limitation: percs slowly too sandy ponding	Limitation: percs slowly wetness droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
Ce:							
Carbondale, undrained--	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Limitation: frost action subsides ponding	Limitation: soil blowing ponding	Limitation: soil blowing ponding	Limitation: wetness
CgB:							
Colton----------------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones too sandy	Limitation: large stones droughty
Duxbury---------------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily too sandy	Limitation: erodes easily
CgC:							
Colton----------------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Duxbury---------------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
CgD:							
Colton----------------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Duxbury---------------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
Ck:							
Cook------------------	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Favorable	Limitation: wetness droughty	Limitation: wetness	Limitation: rooting depth wetness droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
Cn:							
Cornish	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: flooding frost action cutbanks cave	Limitation: flooding wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
Cp:							
Coveytown	Severe: seepage	Severe: wetness	Severe: slow refill cutbanks cave	Favorable	Limitation: fast intake wetness droughty	Limitation: wetness soil blowing	Limitation: rooting depth wetness droughty
Cr:							
Coveytown, very stony	Severe: seepage	Severe: seepage wetness	Severe: slow refill cutbanks cave	Limitation: large stones cutbanks cave	Limitation: wetness	Limitation: large stones too sandy wetness	Limitation: large stones wetness
Cook, very stony	Severe: seepage	Severe: piping wetness	Severe: slow refill cutbanks cave	Favorable	Limitation: wetness droughty	Limitation: wetness	Limitation: rooting depth wetness droughty
CsB:							
Crary	Moderate: seepage slope	Severe: piping wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly rooting depth wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
CtB:							
Crary, very bouldery	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones	Limitation: large stones wetness
Potsdam, very bouldery	Moderate: seepage slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones	Limitation: erodes easily large stones
CuB:							
Croghan, sand	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: slope cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
CvA: Croghan, loamy fine sand	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: droughty
CvB: Croghan, loamy fine sand	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: slope cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: droughty
Da: Dawson	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth ponding	Limitation: ponding	Limitation: rooting depth wetness
DAM: Large dams.							
Dd: Deford, loamy fine sand	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Limitation: ponding cutbanks cave	Limitation: fast intake ponding droughty	Limitation: too sandy soil blowing ponding	Limitation: wetness droughty
Df: Deford, mucky loamy fine sand	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Limitation: ponding cutbanks cave	Limitation: fast intake ponding droughty	Limitation: too sandy soil blowing ponding	Limitation: wetness droughty
DpA: Depeyster	Slight	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: erodes easily wetness	Limitation: erodes easily percs slowly

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
DpB: Depeyster	Moderate: slope	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily percs slowly
DpC: Depeyster	Severe: slope	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily percs slowly slope
Dr: Dorval	Severe: seepage	Severe: ponding	Severe: no water	Limitation: percs slowly subsides ponding	Limitation: percs slowly soil blowing ponding	Limitation: percs slowly soil blowing ponding	Limitation: percs slowly wetness
Du: Dune land	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
EeB: Eelweir	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: slope cutbanks cave	Limitation: slope wetness soil blowing	Limitation: too sandy wetness	Favorable
EmA: Elmwood	Severe: seepage	Moderate: hard to pack piping wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: wetness soil blowing	Limitation: erodes easily wetness	Limitation: erodes easily rooting depth
EmB: Elmwood	Severe: seepage	Moderate: hard to pack piping wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness soil blowing	Limitation: erodes easily wetness	Limitation: erodes easily rooting depth

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
Fa: Fahey	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Limitation: cutbanks cave	Limitation: fast intake seepage droughty	Limitation: not needed	Limitation: not needed
FkA: Flackville	Severe: seepage	Severe: piping	Severe: no water	Limitation: percs slowly	Limitation: wetness droughty	Limitation: wetness soil blowing	Limitation: percs slowly droughty
FkB: Flackville	Severe: seepage	Severe: piping	Severe: no water	Limitation: percs slowly slope	Limitation: slope wetness droughty	Limitation: wetness soil blowing	Limitation: percs slowly droughty
Fu: Fluvaquents, frequently flooded	Severe: seepage	Severe: seepage piping ponding	Severe: slow refill cutbanks cave	Limitation: flooding percs slowly ponding	Limitation: ponding droughty	Limitation: percs slowly too sandy ponding	Limitation: percs slowly wetness droughty
Udifluvents, frequently flooded	Severe: seepage	Severe: seepage piping wetness	Severe: slow refill cutbanks cave	Limitation: flooding percs slowly	Limitation: wetness droughty	Limitation: percs slowly too sandy wetness	Limitation: percs slowly droughty
GrB: Grenville	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: rooting depth slope droughty	Favorable	Limitation: rooting depth droughty
GrC: Grenville	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: rooting depth slope droughty	Limitation: slope	Limitation: rooting depth slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
GsD:							
Grenville, very stony--	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: rooting depth slope droughty	Limitation: slope	Limitation: rooting depth slope droughty
Gu:							
Guff------------------	Moderate: depth to rock	Severe: ponding	Severe: slow refill depth to rock	Limitation: percs slowly ponding depth to rock	Limitation: percs slowly ponding	Limitation: erodes easily ponding depth to rock	Limitation: erodes easily wetness depth to rock
HaA:							
Hailesboro-------------	Slight	Severe: piping wetness	Severe: slow refill	Limitation: frost action	Limitation: percs slowly wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
HaB:							
Hailesboro-------------	Moderate: slope	Severe: piping wetness	Severe: slow refill	Limitation: frost action slope	Limitation: percs slowly slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
Hc:							
Hannawa----------------	Severe: depth to rock	Severe: piping wetness	Severe: no water	Limitation: frost action depth to rock	Limitation: wetness depth to rock	Limitation: wetness depth to rock	Limitation: wetness depth to rock
HeB:							
Heuvelton-------------	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly wetness	Limitation: erodes easily wetness	Limitation: erodes easily percs slowly
HeC:							
Heuvelton, rolling-----	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily percs slowly slope
HkE:							
Heuvelton-------------	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily percs slowly slope

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
HkE:							
Depeyster	Severe: slope	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily percs slowly slope
HnA:							
Hogansburg	Slight	Severe: piping	Severe: no water	Limitation: frost action	Limitation: rooting depth wetness	Limitation: wetness	Limitation: rooting depth
HnB:							
Hogansburg	Moderate: slope	Severe: piping	Severe: no water	Limitation: frost action slope	Limitation: rooting depth slope wetness	Limitation: wetness	Limitation: rooting depth
HrB:							
Hogansburg, very stony	Moderate: slope	Severe: piping	Severe: no water	Limitation: frost action slope	Limitation: rooting depth slope wetness	Limitation: wetness	Limitation: rooting depth
Grenville, very stony	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: rooting depth slope droughty	Favorable	Limitation: rooting depth droughty
IaB:							
Insula	Severe: depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
InB:							
Insula	Severe: depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
IrC:							
Insula, rolling	Severe: depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: depth to rock droughty	Limitation: large stones depth to rock	Limitation: large stones depth to rock droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
IrC:							
Rock outcrop	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
IrD:							
Insula, hilly	Severe: depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: depth to rock droughty	Limitation: large stones depth to rock	Limitation: large stones depth to rock droughty
Rock outcrop	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
KaA:							
Kalurah	Slight	Severe: seepage piping	Severe: no water	Limitation: frost action	Limitation: wetness	Limitation: wetness	Favorable
KaB:							
Kalurah	Moderate: slope	Severe: seepage piping	Severe: no water	Limitation: frost action slope	Limitation: slope wetness	Limitation: wetness	Favorable
KbB:							
Kalurah, very stony	Moderate: slope	Severe: seepage piping	Severe: no water	Limitation: frost action slope	Limitation: slope wetness droughty	Limitation: wetness	Limitation: droughty
Pyrities, very stony	Moderate: slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Favorable	Limitation: droughty
Lc:							
Lovewell	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: flooding frost action cutbanks cave	Limitation: flooding wetness	Limitation: erodes easily wetness	Limitation: erodes easily

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
Ld:							
Loxley	Severe: seepage	Severe: excess humus ponding	Severe: slow refill	Limitation: frost action subsides ponding	Limitation: too acid ponding	Limitation: ponding	Limitation: wetness
LeC:							
Lyman	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
LeD:							
Lyman, very bouldery	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Lt:							
Lyme, very bouldery	Severe: seepage	Severe: piping wetness	Moderate: slow refill	Unranked: frost action slope	---	Unranked: wetness	Unranked: wetness
Tughill, very bouldery	Slight	Severe: large stones seepage ponding	Severe: slow refill	Limitation: large stones percs slowly ponding	Limitation: large stones ponding	Limitation: percs slowly ponding	Limitation: rooting depth wetness droughty
MaA:							
Malone	Slight	Severe: seepage piping wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: wetness droughty	Limitation: percs slowly wetness	Limitation: rooting depth wetness droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
MaB:							
Malone	Moderate: slope	Severe: seepage piping wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: percs slowly wetness	Limitation: rooting depth wetness droughty
MbB:							
Malone, very stony	Moderate: slope	Severe: seepage piping wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: percs slowly wetness	Limitation: rooting depth wetness droughty
MdB:							
Malone, undulating	Moderate: slope	Severe: seepage piping wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: percs slowly wetness	Limitation: rooting depth wetness droughty
Adjidaumo	Slight	Severe: wetness	Severe: slow refill	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
MeB:							
Malone, very stony	Moderate: slope	Severe: seepage piping wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: percs slowly wetness	Limitation: rooting depth wetness droughty
Adjidaumo	Slight	Severe: wetness	Severe: slow refill	Limitation: frost action percs slowly	Limitation: percs slowly slow intake wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
MfA:							
Matoon	Moderate: depth to rock	Severe: thin layer wetness	Severe: no water	Limitation: frost action depth to rock	Limitation: wetness depth to rock	Limitation: erodes easily wetness depth to rock	Limitation: erodes easily wetness depth to rock
MfB:							
Matoon	Moderate: slope depth to rock	Severe: thin layer wetness	Severe: no water	Limitation: frost action slope depth to rock	Limitation: slope wetness depth to rock	Limitation: erodes easily wetness depth to rock	Limitation: erodes easily wetness depth to rock

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
Mh: Mino	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Limitation: frost action	Limitation: wetness	Limitation: wetness	Limitation: wetness
Mn: Munuscong	Severe: seepage	Severe: hard to pack ponding	Severe: slow refill	Limitation: frost action percs slowly ponding	Limitation: percs slowly soil blowing ponding	Limitation: percs slowly soil blowing ponding	Limitation: percs slowly wetness
MsA: Muskellunge	Slight	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
MsB: Muskellunge	Moderate: slope	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
MuB: Muskellunge	Moderate: slope	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
MwB: Muskellunge, undulating	Moderate: slope	Severe: piping wetness	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
Adjidaumo	Slight	Severe: wetness	Severe: slow refill	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
Na: Naumburg	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: wetness droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
NhA: Nehasne----------------	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
NhB: Nehasne----------------	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
NhC: Nehasne----------------	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
NoA: Nicholville------------	Moderate: seepage	Severe: piping	Severe: no water	Limitation: cutbanks cave	Limitation: erodes easily	Limitation: not needed	Limitation: erodes easily
NoB: Nicholville------------	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: cutbanks cave	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
NoC: Nicholville, rolling---	Severe: slope	Severe: piping	Severe: no water	Limitation: slope cutbanks cave	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily slope
NrB: Nicholville------------	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: cutbanks cave	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
OgA: Ogdensburg-------------	Severe: seepage	Severe: seepage piping wetness	Severe: no water	Limitation: frost action depth to rock	Limitation: wetness depth to rock	Limitation: wetness depth to rock	Limitation: wetness depth to rock

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
OgB: Ogdensburg	Severe: seepage	Severe: seepage piping wetness	Severe: no water	Limitation: frost action slope depth to rock	Limitation: slope wetness depth to rock	Limitation: wetness depth to rock	Limitation: wetness depth to rock
Pg: Pits, gravel and sand	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: large stones too sandy	Limitation: large stones droughty
Ph: Pits, quarry	Severe: depth to rock	Slight	Severe: no water	Limitation: deep to water	Limitation: depth to rock	Limitation: depth to rock	Limitation: depth to rock
PmC: Potsdam	Severe: slope	Severe: piping	Severe: no water	Limitation: percs slowly	Limitation: erodes easily percs slowly slope	Limitation: erodes easily rooting depth slope	Limitation: erodes easily rooting depth slope
PoC: Potsdam, very bouldery	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
Tunbridge, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
PoD: Potsdam, very bouldery	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
Tunbridge, very bouldery	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
PpD:							
Potsdam, very bouldery-	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
Berkshire, very bouldery--------------	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope	---
PsC:							
Potsdam, very bouldery-	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily large stones slope	Limitation: erodes easily large stones slope
Crary, very bouldery---	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: slope wetness droughty	Limitation: erodes easily large stones slope	Limitation: large stones slope wetness
PvB:							
Pyrities---------------	Moderate: slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Favorable	Limitation: droughty
PvC:							
Pyrities---------------	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Limitation: slope	Limitation: slope droughty
PxD:							
Pyrities, very stony---	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Limitation: slope	Limitation: slope droughty
PyB:							
Pyrities, rocky--------	Moderate: slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Favorable	Limitation: droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
PyC:							
Pyrities, rocky	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Limitation: slope	Limitation: slope droughty
PzC:							
Pyrities, very stony	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope droughty	Limitation: slope	Limitation: slope droughty
Kalurah, very stony	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: frost action slope	Limitation: slope wetness droughty	Limitation: slope wetness	Limitation: slope droughty
QwB:							
Quetico	Severe: depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: soil blowing depth to rock	Limitation: depth to rock
Rock outcrop	Severe: depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: depth to rock	Limitation: depth to rock
Insula	Severe: depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
RaA:							
Raquette	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
RaB:							
Raquette	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
RaC:							
Raquette	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
Rd:							
Redwater	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: flooding frost action	Limitation: flooding wetness	Limitation: wetness	Limitation: wetness
RoA:							
Roundabout	Moderate: seepage	Severe: piping wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
RoB:							
Roundabout	Moderate: seepage slope	Severe: piping wetness	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly wetness
Rt:							
Runeberg	Slight	Severe: piping wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: percs slowly wetness	Limitation: rooting depth wetness
Ru:							
Runeberg, very stony	Slight	Severe: piping wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: percs slowly rooting depth wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth wetness
SaB:							
Salmon	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
SaC:							
Salmon, rolling	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
Se:							
Searsport	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Limitation: ponding cutbanks cave	Limitation: ponding	Limitation: too sandy ponding	Limitation: wetness
Sg:							
Stockholm	Severe: seepage depth to rock	Severe: piping wetness	Severe: no water	Limitation: percs slowly depth to rock	Limitation: fast intake wetness droughty	Limitation: percs slowly wetness depth to rock	Limitation: wetness depth to rock droughty
ShB:							
Summerville	Severe: depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: soil blowing depth to rock	Limitation: depth to rock droughty
SkB:							
Summerville, rocky	Severe: depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: soil blowing depth to rock	Limitation: depth to rock droughty
Gouverneur	Severe: depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily depth to rock
SlD:							
Summerville, hilly	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock droughty
Rock outcrop	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
SmC:							
Summerville, rolling	Severe: slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
SmC:							
Rock outcrop	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Nehasne, rolling	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
SpB:							
Sunapee	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: slope cutbanks cave	Limitation: slope wetness	Limitation: too sandy wetness	Favorable
SsB:							
Sunapee, very bouldery	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Unranked: slope cutbanks cave	---	Unranked: too sandy wetness	Favorable
Berkshire, very bouldery	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones	Limitation: large stones droughty
Sw:							
Swanton	Severe: seepage	Severe: wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: wetness soil blowing	Limitation: erodes easily wetness soil blowing	Limitation: erodes easily rooting depth wetness
TdA:							
Trout River	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake large stones droughty	Limitation: large stones too sandy	Limitation: large stones droughty
TdB:							
Trout River	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake large stones droughty	Limitation: large stones too sandy	Limitation: large stones droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
TfB:							
Trout River, very stony	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones too sandy	Limitation: large stones droughty
Fahey, very stony	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Limitation: large stones slope cutbanks cave	Limitation: large stones wetness droughty	Limitation: large stones too sandy wetness	Limitation: large stones droughty
TuD:							
Tunbridge	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock droughty
Lyman	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
TwC:							
Tunbridge, rolling	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope soil blowing depth to rock	Limitation: slope depth to rock droughty
Lyman, rolling	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Dawson	Severe: seepage	Severe: excess humus ponding	Severe: slow refill cutbanks cave	Limitation: frost action subsides ponding	Limitation: rooting depth soil blowing ponding	Limitation: soil blowing ponding	Limitation: rooting depth wetness
Ua: Udipsamments, smoothed.							
Ue: Udorthents, loamy.							

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
Uf: Udorthents, clayey.							
Ug: Udorthents, mine waste, acid.							
Uh: Udorthents, mine waste, nonacid.							
Un: Udorthents, refuse substratum.							
Ur: Urban land	Variable	Variable	Variable	Variable	Variable	Variable	Variable
W: Water.							
WaA: Waddington	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: droughty	Limitation: large stones too sandy	Limitation: large stones droughty
WaB: Waddington	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones too sandy	Limitation: large stones droughty
WaC: Waddington, rolling	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
WaD: Waddington	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
WdB:							
Waddington, very cobbly sandy loam-----	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones too sandy	Limitation: large stones droughty
Wg:							
Wegatchie--------------	Slight	Severe: piping wetness	Severe: slow refill	Limitation: frost action	Limitation: erodes easily wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness

Table 15.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
021:												
Dawson----------	0-5	Peat	PT	A-8	0	0	---	---	---	---	---	---
	5-30	Muck	PT	A-8	0	0	---	---	---	---	---	---
	30-72	Loamy sand, gravelly sand, very gravelly very fine sand	SP, SM, SC, GP	A-1, A-2, A-3, A-4	0	0	45-100	35-100	15-90	0-45	0-20	NP-10
Fluvaquents-----	0-10	Silt loam	CL, ML, SM	A-2, A-4, A-6	0	0-5	90-100	80-100	40-100	15-95	0-30	NP-20
	10-72	Very gravelly sand, gravelly silt loam, silty clay loam	CL, SC-SM, ML, GM	A-1, A-2, A-6	0	0-15	35-100	30-100	15-100	5-90	0-30	NP-20
Loxley----------	0-3	Mucky peat	PT	A-8	0	0	---	---	---	---	---	---
	3-72	Muck	PT	A-8	0	0	---	---	---	---	---	---
023:												
Loxley----------	0-3	Mucky peat	PT	A-8	0	0	---	---	---	---	---	---
	3-72	Muck	PT	A-8	0	0	---	---	---	---	---	---
Dawson----------	0-5	Peat	PT	A-8	0	0	---	---	---	---	---	---
	5-30	Muck	PT	A-8	0	0	---	---	---	---	---	---
	30-72	Loamy sand, gravelly sand, very gravelly very fine sand	SC, SM, SP, GP	A-1, A-2, A-3, A-4	0	0	45-100	35-100	15-90	0-45	0-20	NP-10
363A:												
Adams-----------	0-7	Sand	SM, SP-SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SP, SP-SM, SW-SM	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
363B:												
Adams-----------	0-7	Sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SP-SM, SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SW-SM, SP-SM, SP	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP
363D:												
Adams-----------	0-7	Sand	SM, SP-SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, loamy fine sand	SP-SM, SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SP-SM, SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SW-SM, SP, SP-SM	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP
365:												
Naumburg--------	0-5	Moderately decomposed plant material	PT		0	0	---	---	---	---	---	---
	5-19	Loamy fine sand	SP-SM, SM, SW-SM	A-2, A-3, A-4	0	0	95-100	90-100	50-80	5-45	0-14	NP
	19-41	Loamy fine sand, sand, loamy sand	SP-SM, SM, SW-SM	A-1, A-2, A-3	0	0	95-100	90-100	45-80	5-35	0-14	NP
	41-72	Sand, loamy fine sand, coarse sand	SW-SM, SP-SM, SM	A-1, A-2, A-3	0	0	95-100	90-100	45-80	5-35	0-14	NP
Croghan---------	0-10	Sand	SM, SP-SM, SW-SM	A-1, A-2, A-3	0	0	95-100	95-100	45-80	5-35	0-14	NP
	10-44	Sand, fine sand, loamy sand	SM, SP-SM, SW-SM	A-1, A-2, A-3	0	0	85-100	75-100	45-80	5-35	0-14	NP
	44-72	Fine sand, loamy sand, coarse sand	SM, SP-SM, SW-SM	A-1, A-2, A-3	0	0	85-100	75-100	45-75	5-35	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
376A:												
Colton	0-6	Gravelly loamy sand	GM, SM	A-1, A-2, A-3	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Very gravelly sand, gravelly loamy fine sand, cobbly coarse sand	SP, SM, GM	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly sand, very cobbly loamy sand, extremely gravelly coarse sand	SP, SW, GP, GW	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP
Duxbury	0-7	Silt loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	ML, MH	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	SM, ML	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	GM, GP, GW, SP	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP
Adams	0-7	Sand	SM, SP-SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, sandy loam, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SP-SM, SW-SM, SP	A-1, A-2, A-3	---	0-1	80-100	70-100	20-90	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
376C:												
Colton----------	0-6	Gravelly loamy sand	GM, SM	A-1, A-2, A-3	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Gravelly loamy fine sand, very gravelly sand, cobbly coarse sand	GM, SP, SM	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly loamy sand, very cobbly sand, extremely gravelly coarse sand	GP, GW, SP, SW	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP
Duxbury---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	MH, ML	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	ML, SM	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	GP, GW, GM, SP	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP
Adams-----------	0-7	Sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, sandy loam, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SP-SM, SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SP-SM, SP, SW-SM	A-1, A-2, A-3	---	0-1	80-100	70-100	20-90	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
376D:												
Colton----------	0-6	Gravelly loamy sand	SM, GM	A-2, A-3, A-1	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Gravelly loamy fine sand, very gravelly sand, cobbly coarse sand	SM, SP, GM	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly loamy sand, very cobbly sand, extremely gravelly coarse sand	GP, GW, SW, SP	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP
Duxbury---------	0-7	Silt loam	ML, CL-ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	MH, ML	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	SM, ML	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	SP, GW, GP, GM	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP
Adams-----------	0-7	Sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, sandy loam, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SP-SM, SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SW-SM, SP-SM, SP	A-1, A-2, A-3	---	0-1	80-100	70-100	20-90	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
380B:												
Colton----------	0-6	Gravelly loamy sand	GM, SM	A-1, A-2, A-3	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Gravelly loamy fine sand, very gravelly sand, cobbly coarse sand	SM, SP, GM	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly loamy sand, very cobbly sand, extremely gravelly coarse sand	GP, GW, SW, SP	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP
Duxbury---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	ML, MH	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	ML, SM	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	GP, GM, GW, SP	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP
Dawson----------	0-5	Peat	PT	A-8	0	0	---	---	---	---	---	---
	5-30	Muck	PT	A-8	0	0	---	---	---	---	---	---
	30-72	Loamy sand, gravelly sand, very gravelly very fine sand	SM, SC, GP, SP	A-1, A-2, A-3, A-4	0	0	45-100	35-100	15-90	0-45	0-20	NP-10

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
380D:												
Colton----------	0-6	Gravelly loamy sand	SM, GM	A-1, A-2, A-3	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Gravelly loamy fine sand, very gravelly sand, cobbly coarse sand	GM, SM, SP	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly loamy sand, very cobbly sand, extremely gravelly coarse sand	GP, GW, SP, SW	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP
Duxbury---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	MH, ML	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	SM, ML	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	SP, GW, GP, GM	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP
Dawson----------	0-5	Peat	PT	A-8	0	0	---	---	---	---	---	---
	5-30	Muck	PT	A-8	0	0	---	---	---	---	---	---
	30-72	Loamy sand, gravelly sand, very gravelly very fine sand	SP, GP, SC, SM	A-1, A-2, A-3, A-4	0	0	45-100	35-100	15-90	0-45	0-20	NP-10

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
643C:												
Berkshire, very bouldery-------	0-7	Loam	SM, ML	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	SM, ML	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6
643D:												
Berkshire, very bouldery-------	0-7	Loam	ML, SM	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	SM, ML	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6
644C:												
Berkshire, rolling, very bouldery-------	0-7	Loam	SM, ML	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
644C:												
Lyme, very bouldery-------	0-3	Sandy loam	ML, SM	A-2, A-4	1-5	0-10	80-95	75-92	40-85	25-65	0-25	NP-3
	3-16	Sandy loam, cobbly sandy loam, cobbly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-8	0-20	70-95	55-92	40-85	20-55	0-25	NP-3
	16-72	Gravelly sandy loam, cobbly loam, sandy loam	ML, SM	A-2, A-4	0-8	1-20	65-92	50-85	40-70	15-60	0-25	NP-3
644D:												
Berkshire, hilly, very bouldery-------	0-7	Loam	ML, SM	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6
Lyme, very bouldery-------	0-3	Sandy loam	ML, SM	A-2, A-4	1-5	0-10	80-95	75-92	40-85	25-65	0-25	NP-3
	3-16	Sandy loam, cobbly sandy loam, cobbly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-8	0-20	70-95	55-92	40-85	20-55	0-25	NP-3
	16-72	Gravelly sandy loam, cobbly loam, sandy loam	ML, SM	A-2, A-4	0-8	1-20	65-92	50-85	40-70	15-60	0-25	NP-3

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
709B:												
Adirondack, very bouldery--	0-2	Slightly decomposed plant material	PT	A-8	0-8	0-25	---	---	---	---	---	---
	2-3	Highly decomposed plant material	PT	A-8	0-8	0-25	---	---	---	---	---	---
	3-8	Fine sandy loam	SM, ML	A-4	1-8	0-25	65-99	50-92	45-90	25-70	0-25	NP-3
	8-22	Stony fine sandy loam, stony sandy loam, stony loam, gravelly fine sandy loam, sandy loam	ML, SM	A-4	0-15	0-25	65-95	50-90	40-80	20-70	0-25	NP-3
	22-72	Stony sandy loam, gravelly fine sandy loam, gravelly loamy fine sand	SM, GM	A-2-4, A-4	1-15	0-25	65-95	50-90	35-70	15-45	0-25	NP-3
Tughill, very bouldery-------	0-4	Muck	PT	A-8	0-8	0-20	---	---	---	---	---	---
	4-8	Gravelly mucky sandy loam	SC, GC, GM, SM	A-1, A-2, A-4	1-8	0-20	65-92	45-75	30-70	15-60	20-30	3-9
	8-40	Very gravelly sandy loam, very gravelly loam, very cobbly fine sandy loam	GM, GC, GC-GM	A-1, A-2	1-8	8-30	55-85	30-50	20-50	10-45	20-30	3-9
	40-72	Very gravelly sandy loam, very gravelly loam, very cobbly fine sandy loam	GM, GC-GM, GC	A-1, A-2	1-8	8-30	55-85	30-50	20-50	10-45	20-30	3-9

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
709B:												
Lyme, very bouldery-------	0-3	Sandy loam	SM, ML	A-2, A-4	1-5	0-10	80-95	75-92	40-85	25-65	0-25	NP-3
	3-16	Sandy loam, cobbly sandy loam, cobbly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-8	0-20	70-95	55-92	40-85	20-55	0-25	NP-3
	16-72	Gravelly sandy loam, cobbly loam, sandy loam	SM, ML	A-2, A-4	0-8	1-20	65-92	50-85	40-70	15-60	0-25	NP-3
741C:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	SM, ML	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	SM, ML	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
741C:												
Tunbridge, very bouldery-------	0-3	Silt loam	GM, ML, SM	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	SM, ML	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	ML, SM	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Crary, very bouldery-------	0-8	Silt loam	SM, ML	A-4	1-5	0-15	85-100	75-100	55-95	40-90	20-30	1-6
	8-24	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	85-100	75-100	60-95	40-90	0-30	NP-6
	24-36	Stony fine sandy loam, gravelly sandy loam, loam	SM, ML, GM	A-1, A-2, A-4	1-15	1-20	65-92	50-85	35-80	20-65	0-30	NP-6
	36-72	Stony fine sandy loam, gravelly sandy loam, loam	SM, ML, GM	A-1, A-2, A-4	1-15	1-20	60-92	50-85	35-80	15-65	0-30	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
741D:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	ML, SM	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	SM, ML	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
Tunbridge, very bouldery-------	0-3	Silt loam	GM, SM, ML	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	SM, ML	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
743C:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	SM, ML	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	SM, ML	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
743D:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	ML, SM	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-4, A-1, A-2	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
745C:												
Crary, very bouldery-------	0-8	Silt loam	ML, SM	A-4	1-5	0-15	85-100	75-100	55-95	40-90	20-30	1-6
	8-24	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	85-100	75-100	60-95	40-90	0-30	NP-6
	24-36	Stony fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	1-15	1-20	65-92	50-85	35-80	20-65	0-30	NP-6
	36-72	Stony fine sandy loam, gravelly sandy loam, loam	GM, SM, ML	A-1, A-2, A-4	1-15	1-20	60-92	50-85	35-80	15-65	0-30	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
745C:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	SM, ML	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	SM, ML	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
747B:												
Crary, very bouldery-------	0-8	Silt loam	ML, SM	A-4	1-5	0-15	85-100	75-100	55-95	40-90	20-30	1-6
	8-24	Silt loam, very fine sandy loam, loam	SM, ML	A-4	0-1	0-5	85-100	75-100	60-95	40-90	0-30	NP-6
	24-36	Stony fine sandy loam, gravelly sandy loam, loam	ML, GM, SM	A-1, A-2, A-4	1-15	1-20	65-92	50-85	35-80	20-65	0-30	NP-6
	36-72	Stony fine sandy loam, gravelly sandy loam, loam	ML, SM, GM	A-1, A-2, A-4	1-15	1-20	60-92	50-85	35-80	15-65	0-30	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
747B:												
Adirondack, very bouldery--	0-2	Slightly decomposed plant material	PT	A-8	0-8	0-25	---	---	---	---	---	---
	2-3	Highly decomposed plant material	PT	A-8	0-8	0-25	---	---	---	---	---	---
	3-8	Fine sandy loam	SM, ML	A-4	1-8	0-25	65-99	50-92	45-90	25-70	0-25	NP-3
	8-22	Stony fine sandy loam, stony sandy loam, stony loam, gravelly fine sandy loam, sandy loam	ML, SM	A-4	0-15	0-25	65-95	50-90	40-80	20-70	0-25	NP-3
	22-72	Stony sandy loam, gravelly fine sandy loam, gravelly loamy fine sand	GM, SM	A-2-4, A-4	1-15	0-25	65-95	50-90	35-70	15-45	0-25	NP-3
807:												
Udorthents, mine waste-----	0-4	Gravelly loam	GM, SM, SC, ML, CL	A-2, A-4, A-6	0-7	0-5	55-100	40-100	20-100	10-95	0-45	NP-15
	4-72	Very gravelly sandy loam, channery loam, silty clay loam	ML, GM, CL, SC	A-1, A-2, A-4, A-6	0-7	0-15	55-100	40-100	20-100	10-95	0-45	NP-15

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
831C:												
Tunbridge, very bouldery-------	0-3	Silt loam	ML, SM, GM	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	ML, SM	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Lyman, very bouldery-------	0-4	Silt loam	SM, ML, GM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
831D:												
Tunbridge, very bouldery-------	0-3	Silt loam	GM, SM, ML	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	ML, SM	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
831D:												
Lyman, very bouldery-------	0-4	Silt loam	GM, ML, SM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	ML, SM, GM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
831F:												
Tunbridge, very bouldery-------	0-3	Silt loam	GM, ML, SM	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	ML, SM	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Lyman, very bouldery-------	0-4	Silt loam	GM, ML, SM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	GM, SM, ML	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
833C:												
Tunbridge, very bouldery-------	0-3	Silt loam	ML, GM, SM	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	ML, SM	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Adirondack, very bouldery--	0-2	Slightly decomposed plant material	PT	A-8	0-8	0-25	---	---	---	---	---	---
	2-3	Highly decomposed plant material	PT	A-8	0-8	0-25	---	---	---	---	---	---
	3-8	Fine sandy loam	SM, ML	A-4	1-8	0-25	65-99	50-92	45-90	25-70	0-25	NP-3
	8-22	Stony fine sandy loam, stony sandy loam, stony loam, gravelly fine sandy loam, sandy loam	ML, SM	A-4	0-15	0-25	65-95	50-90	40-80	20-70	0-25	NP-3
	22-72	Stony sandy loam, gravelly fine sandy loam, gravelly loamy fine sand	SM, GM	A-4, A-2-4	1-15	0-25	65-95	50-90	35-70	15-45	0-25	NP-3

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
833C:												
Lyman, very bouldery-------	0-4	Silt loam	SM, ML, GM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
835C:												
Tunbridge, very bouldery-------	0-3	Silt loam	SM, ML, GM	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	SM, ML	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Borosaprists----	0-30	Muck	PT	A-8	0	0	---	---	---	---	0-14	---
	30-72	Sandy loam, gravelly loam, silt loam, very gravelly loamy sand	SM, SC, ML, CL	A-6, A-2, A-4	0-2	0-2	75-100	50-100	45-95	25-95	15-30	NP-12
Ricker, very bouldery-------	0-1	Peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	1-3	Mucky peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	3-4	Loamy sand, gravelly coarse sand, very channery fine sandy loam, silt loam	GM, SM, ML	A-1, A-2, A-4	0-5	0-35	60-100	35-100	20-95	5-80	---	NP
	4-14	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
861C:												
Lyman-----------	0-4	Silt loam	SM, ML, GM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	SM, ML, GM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
Ricker, very bouldery-------	0-1	Peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	1-3	Mucky peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	3-4	Loamy sand, gravelly coarse sand, very channery fine sandy loam, silt loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-35	60-100	35-100	20-95	5-80	---	NP
	4-14	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop, very bouldery--	0-8	Unweathered bedrock			---	---	---	---	---	---	---	---
861D:												
Lyman, very bouldery-------	0-4	Silt loam	GM, ML, SM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	GM, SM, ML	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
861D:												
Ricker, very bouldery-------	0-1	Peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	1-3	Mucky peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	3-4	Loamy sand, gravelly coarse sand, very channery fine sandy loam, silt loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-35	60-100	35-100	20-95	5-80	---	NP
	4-14	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-8	Unweathered bedrock			---	---	---	---	---	---	---	---
861F:												
Lyman, very bouldery-------	0-4	Silt loam	SM, ML, GM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	ML, SM, GM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
Ricker, very bouldery-------	0-1	Peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	1-3	Mucky peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	3-4	Loamy sand, gravelly coarse sand, very channery fine sandy loam, silt loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-35	60-100	35-100	20-95	5-80	---	NP
	4-14	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-8	Unweathered bedrock			---	---	---	---	---	---	---	---
891F:												
Rock outcrop----	0-8	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
891F:												
Ricker, very bouldery-------	0-1	Peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	1-3	Mucky peat	PT	A-8	0-5	0-35	---	---	---	---	---	---
	3-4	Loamy sand, gravelly coarse sand, very channery fine sandy loam, silt loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-35	60-100	35-100	20-95	5-80	---	NP
	4-14	Unweathered bedrock			---	---	---	---	---	---	---	---
Lyman, very bouldery-------	0-4	Silt loam	SM, ML, GM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
AaB:												
Adams, sand-----	0-7	Sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SW-SM, SP-SM, SP	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
AaC:												
Adams, sand-----	0-7	Sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SP, SP-SM, SW-SM	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP
AaD:												
Adams, sand-----	0-7	Sand	SM, SP-SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, loamy fine sand	SP-SM, SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SP, SP-SM, SW-SM	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP
AdB:												
Adams, loamy fine sand------	0-7	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SP-SM, SW-SM, SP	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
AdC: Adams, loamy fine sand------	0-7	Loamy fine sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-75	5-35	0-14	NP
	7-8	Sand, loamy sand, sandy loam, loamy fine sand	SP-SM, SM	A-2	0	0	90-100	90-100	50-80	5-35	0-20	NP-4
	8-20	Loamy sand, sand, loamy fine sand	SP-SM, SM	A-1, A-2, A-3	0	0	95-100	95-100	40-95	5-35	0-14	NP
	20-72	Sand, fine sand, coarse sand, gravelly sand	SP, SP-SM, SW-SM	A-1, A-2, A-3	0	0-1	80-100	70-100	20-90	0-20	0-14	NP
Ak: Adjidaumo, silty clay-----	0-8	Silty clay	MH, ML	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35
Am: Adjidaumo, mucky silty clay-----------	0-8	Mucky silty clay	MH, ML	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35
Ao: Adjidaumo, flooded--------	0-8	Silty clay	MH, ML	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Ap:												
Adjidaumo, silty clay rocky	0-8	Silty clay	MH, ML	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35
ArC:												
Adjidaumo	0-8	Silty clay	ML, MH	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35
Summerville	0-6	Fine sandy loam	SC-SM, CL-ML, SC, CL	A-2-4, A-4	0	0-25	92-100	90-100	55-95	25-65	20-30	4-10
	6-12	Fine sandy loam, sandy loam, loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4	0	0-25	92-100	90-100	55-95	25-70	20-35	4-15
	12-22	Unweathered bedrock			---	---	---	---	---	---	---	---
BeB:												
Berkshire	0-7	Loam	ML, SM	A-2, A-4, A-5	0	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
BgC:												
Berkshire, very bouldery-------	0-7	Loam	SM, ML	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6
Lyme, very bouldery-------	0-3	Sandy loam	ML, SM	A-2, A-4	1-5	0-10	80-95	75-92	40-85	25-65	0-25	NP-3
	3-16	Sandy loam, cobbly sandy loam, cobbly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-8	0-20	70-95	55-92	40-85	20-55	0-25	NP-3
	16-72	Gravelly sandy loam, cobbly loam, sandy loam	ML, SM	A-2, A-4	0-8	1-20	65-92	50-85	40-70	15-60	0-25	NP-3
BkC:												
Berkshire, very bouldery-------	0-7	Loam	SM, ML	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	SM, ML	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
BkC: Sunapee, very bouldery	0-1	Moderately decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	1-4	Fine sandy loam	ML, SM	A-2, A-4	1-5	0-5	80-95	75-92	50-85	30-65	0-25	NP-3
	4-23	Fine sandy loam, sandy loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0-3	0-15	70-95	55-92	40-80	25-55	0-25	NP-3
	23-72	Fine sandy loam, gravelly sandy loam, gravelly loamy sand	ML, SM	A-2, A-4	0-3	0-15	70-95	55-92	40-80	25-55	0-14	NP
Bo: Borosaprists	0-30	Muck	PT	A-8	0	0	---	---	---	---	0-14	---
	30-72	Sandy loam, gravelly loam, silt loam, very gravelly loamy sand, silty clay loam	ML, SC, SM, CL	A-2, A-4, A-6	0-2	0-2	75-100	50-100	45-95	25-95	15-30	NP-12
Fluvaquents	0-10	Silt loam	CL, ML, SM	A-2, A-4, A-6	0	0-5	90-100	80-100	40-100	15-95	0-30	NP-20
	10-72	Very gravelly sand, gravelly silt loam, silty clay loam	SC-SM, GM, ML, CL	A-1, A-2, A-6	0	0-15	35-100	30-100	15-100	5-90	0-30	NP-20
Ce: Carbondale, undrained	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
	12-40	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---
	40-99	Mucky peat	PT	A-8	0	0	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CgB:												
Colton----------	0-6	Gravelly loamy sand	SM, GM	A-1, A-2, A-3	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Very gravelly sand, gravelly loamy fine sand, cobbly coarse sand	SM, SP, GM	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly sand, very cobbly loamy sand, extremely gravelly coarse sand	SP, GW, SW, GP	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP
Duxbury---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	ML, MH	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	SM, ML	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	GM, GP, GW, SP	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP
CgC:												
Colton----------	0-6	Gravelly loamy sand	GM, SM	A-1, A-2, A-3	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Very gravelly sand, gravelly loamy fine sand, cobbly coarse sand	GM, SM, SP	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly sand, very cobbly loamy sand, extremely gravelly coarse sand	GP, SW, SP, GW	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CgC:												
Duxbury---------	0-7	Silt loam	ML, CL-ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	ML, MH	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	ML, SM	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	GM, SP, GP, GW	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP
CgD:												
Colton----------	0-6	Gravelly loamy sand	SM, GM	A-1, A-2, A-3	0	0-22	60-92	50-75	25-60	5-30	0-10	NP-2
	6-20	Very gravelly sand, gravelly loamy fine sand, cobbly coarse sand	GM, SM, SP	A-1	0-1	1-25	50-90	30-75	20-50	2-20	0-14	NP
	20-72	Very gravelly sand, very cobbly loamy sand, extremely gravelly coarse sand	SW, SP, GW, GP	A-1	0-1	8-40	45-80	20-55	10-40	0-15	0-14	NP
Duxbury---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-100	50-90	15-30	NP-10
	7-14	Silt loam, fine sandy loam, gravelly loam	ML, MH	A-4, A-5	0	0	85-100	70-100	70-100	50-90	0-52	NP-10
	14-24	Gravelly loam, gravelly fine sandy loam, silt loam	SM, ML	A-2, A-4, A-5	0	0	70-92	70-85	50-85	30-75	0-52	NP-10
	24-72	Very gravelly coarse sand, very gravelly loamy sand, loamy sand	SP, GW, GP, GM	A-1	0-5	0-20	45-85	30-50	15-50	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Ck:												
Cook------------	0-7	Loamy fine sand	SM	A-1-b, A-2	0	0	80-95	75-92	40-70	15-30	0-14	NP
	7-39	Loamy sand, loamy fine sand, gravelly sand	SP-SM, SM, SP	A-1, A-2, A-3	0	0-15	60-95	50-92	25-70	2-30	0-14	NP
	39-72	Stony sandy loam, gravelly sandy loam, very gravelly fine sandy loam, loam	GM, SM	A-1-b, A-2, A-4	0-8	1-20	55-92	35-85	30-60	15-45	0-14	NP
Cn:												
Cornish---------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	60-90	0-40	NP-15
	8-21	Silt loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	60-90	0-40	NP-15
	21-46	Silt loam, very fine sandy loam, loamy very fine sand	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	60-90	0-40	NP-15
	46-72	Silt loam, very fine sandy loam, loamy very fine sand	CL-ML, ML	A-4, A-6	0	0	100	100	90-100	40-90	0-40	NP-15
Cp:												
Coveytown-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-95	75-92	35-70	5-35	0-14	NP
	5-38	Gravelly loamy fine sand, gravelly loamy sand, loamy fine sand, loamy sand, gravelly sand	SP, SM, GM, GP	A-1, A-2, A-3	0	0-15	60-95	50-92	25-70	2-30	0-14	NP
	38-72	Gravelly sandy loam, gravelly fine sandy loam, gravelly loam	SM, GM	A-2, A-4	0-20	5-25	60-90	50-70	35-60	25-50	20-25	NP-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Cr:												
Coveytown, very stony----------	0-1	Slightly decomposed plant material	PT	A-8	---	---	---	---	---	---	---	---
	1-5	Loamy fine sand	SP-SM, SM	A-1, A-2, A-3	1-7	0	85-95	75-92	35-70	5-35	0-14	NP
	5-38	Gravelly loamy fine sand, gravelly loamy sand, loamy fine sand, loamy sand, gravelly sand	GM, GP, SM, SP	A-1, A-2, A-3	0	0-15	60-95	50-92	25-70	2-30	0-14	NP
	38-72	Gravelly sandy loam, gravelly fine sandy loam, gravelly loam	GM, SM	A-2, A-4	0-20	5-25	60-90	50-70	35-60	25-50	20-25	NP-5
Cook, very stony----------	0-7	Loamy fine sand	SM	A-1-b, A-2	1-7	0	80-95	75-92	40-70	15-30	0-14	NP
	7-39	Loamy sand, loamy fine sand, gravelly sand	SP-SM, SP, SM	A-1, A-2, A-3	0	0-15	60-95	50-92	25-70	2-30	0-14	NP
	39-72	Stony sandy loam, gravelly sandy loam, very gravelly fine sandy loam, loam	SM, GM	A-1-b, A-2, A-4	0-8	1-20	55-92	35-85	30-60	15-45	0-14	NP
CsB:												
Crary-----------	0-8	Silt loam	SM, ML	A-4	0-1	0-15	85-100	75-100	55-95	40-90	20-30	1-6
	8-24	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	85-100	75-100	60-95	40-90	0-30	NP-6
	24-36	Stony fine sandy loam, gravelly sandy loam, loam	GM, SM, ML	A-1, A-2, A-4	1-15	1-20	65-92	50-85	35-80	20-65	0-30	NP-6
	36-72	Stony fine sandy loam, gravelly sandy loam, loam	SM, ML, GM	A-1, A-2, A-4	1-15	1-20	60-92	50-85	35-80	15-65	0-30	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
CtB:												
Crary, very bouldery-------	0-8	Silt loam	ML, SM	A-4	1-5	0-15	85-100	75-100	55-95	40-90	20-30	1-6
	8-24	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	85-100	75-100	60-95	40-90	0-30	NP-6
	24-36	Stony fine sandy loam, gravelly sandy loam, loam	GM, SM, ML	A-1, A-2, A-4	1-15	1-20	65-92	50-85	35-80	20-65	0-30	NP-6
	36-72	Stony fine sandy loam, gravelly sandy loam, loam	SM, GM, ML	A-1, A-2, A-4	1-15	1-20	60-92	50-85	35-80	15-65	0-30	NP-6
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	ML, SM	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
CuB:												
Croghan, sand---	0-10	Sand	SM, SP-SM, SW-SM	A-1, A-2, A-3	0	0	95-100	95-100	45-80	5-35	0-14	NP
	10-44	Sand, fine sadd, loamy sand	SW-SM, SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-100	45-80	5-35	0-14	NP
	44-72	Fine sand, loamy sand, coarse sand	SW-SM, SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-100	45-75	5-35	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CvA:												
Croghan, loamy fine sand------	0-10	Loamy fine sand	SW-SM, SP-SM, SM	A-1, A-2, A-3	0	0	95-100	95-100	45-80	5-35	0-14	NP
	10-44	Sand, fine sand, loamy sand	SW-SM, SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-100	45-80	5-35	0-14	NP
	44-72	Fine sand, loamy sand, coarse sand	SW-SM, SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-100	45-75	5-35	0-14	NP
CvB:												
Croghan, loamy fine sand------	0-10	Loamy fine sand	SP-SM, SW-SM, SM	A-2, A-3, A-1	0	0	95-100	95-100	45-80	5-35	0-14	NP
	10-44	Sand, fine sand, loamy sand	SP-SM, SW-SM, SM	A-1, A-2, A-3	0	0	85-100	75-100	45-80	5-35	0-14	NP
	44-72	Fine sand, loamy sand, coarse sand	SM, SP-SM, SW-SM	A-1, A-2, A-3	0	0	85-100	75-100	45-75	5-35	0-14	NP
Da:												
Dawson----------	0-5	Peat	PT	A-8	0	0	---	---	---	---	---	---
	5-30	Muck	PT	A-8	0	0	---	---	---	---	---	---
	30-72	Loamy sand, gravelly sand, very gravelly very fine sand	SP, SM, SC, GP	A-1, A-2, A-3, A-4	0	0	45-100	35-100	15-90	0-45	0-20	NP-10
DAM:												
Large dams.												
Dd:												
Deford, loamy fine sand------	0-8	Loamy fine sand	SM	A-2-4	0	0	100	100	50-70	15-35	0-20	NP-4
	8-24	Loamy fine sand, fine sand	SM	A-2-4	0	0	100	100	50-70	15-35	0-20	NP-4
	24-72	Loamy fine sand, fine sand, very fine sand, sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	50-80	5-35	15-20	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Df: Deford, mucky loamy fine Sand	0-8	Mucky loamy fine sand	SM	A-2-4	0	0	100	100	50-70	15-35	0-20	NP-4
	8-24	Loamy fine sand, fine sand	SM	A-2-4	0	0	100	100	50-70	15-35	0-20	NP-4
	24-72	Loamy fine sand, fine sand, very fine sand, sand	SP-SM, SM	A-2-4, A-3	0	0	100	100	50-80	5-35	15-20	NP-4
DpA: Depeyster	0-10	Silt loam	SC-SM, ML, CL-ML	A-4	0	0	95-100	95-100	80-100	50-90	25-35	5-10
	10-27	Silt loam, silty clay loam	CL	A-6	0	0	95-100	95-100	90-100	75-95	25-40	10-20
	27-72	Stratified very fine sand to very fine sandy loam to silty clay loam, stratified sandy loam to silty clay loam to very fine sand, very fine sandy loam, silty clay loam	CL, CL-ML	A-4	0	0	95-100	95-100	70-100	40-90	20-40	NP-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
DpB:												
Depeyster-------	0-10	Silt loam	SC-SM, CL-ML, ML	A-4	0	0	95-100	95-100	80-100	50-90	25-35	5-10
	10-27	Silt loam, silty clay loam	CL	A-6	0	0	95-100	95-100	90-100	75-95	25-40	10-20
	27-72	Stratified very fine sand to very fine sandy loam to silty clay loam, stratified sandy loam to silty clay loam to very fine sand, very fine sandy loam, silty clay loam	CL-ML, CL	A-4	0	0	95-100	95-100	70-100	40-90	20-40	NP-20
DpC:												
Depeyster-------	0-10	Silt loam	CL-ML, ML, SC-SM	A-4	0	0	95-100	95-100	80-100	50-90	25-35	5-10
	10-27	Silt loam, silty clay loam	CL	A-6	0	0	95-100	95-100	90-100	75-95	25-40	10-20
	27-72	Stratified very fine sand to very fine sandy loam to silty clay loam, stratified sandy loam to silty clay loam to very fine sand, very fine sandy loam, silty clay loam	CL, CL-ML	A-4	0	0	95-100	95-100	70-100	40-90	20-40	NP-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Dr:												
Dorval----------	0-31	Muck	PT	A-8	0	0	---	---	---	---	0-14	---
	31-72	Silty clay, silty clay loam, clay	CH, CL	A-7	0	0	100	92-100	90-100	75-95	45-70	25-40
Du:												
Dune land-------	0-6	Sand	SP-SM, SM, SP	A-2, A-3	0	0	100	100	50-70	0-15	0-14	NP
	6-72	Sand, fine sand	SP-SM, SP, SM	A-2, A-3	0	0	100	100	50-80	0-25	0-14	NP
EeB:												
Eelweir---------	0-10	Fine sandy loam	SM, ML	A-4	0	0	95-100	92-100	60-90	30-65	0-20	NP-7
	10-29	Fine sandy loam, sandy loam, loam	SM, ML	A-4	0	0	95-100	92-100	60-90	30-65	0-25	NP-7
	29-35	Very fine sandy loam, fine sandy loam, sandy loam	SM, ML	A-4	0	0	95-100	92-100	50-95	10-60	0-25	NP-7
	35-72	Loamy fine sand, sand, fine sandy loam	SC-SM, SM	A-2, A-3	0	0	95-100	92-100	50-95	5-60	0-14	NP-5
EmA:												
Elmwood---------	0-6	Fine sandy loam	ML, SM	A-2, A-4	0	0	100	95-100	65-90	30-65	0-30	NP-7
	6-25	Fine sandy loam, sandy loam, loam	SC, ML, CL, SM	A-4, A-2	0	0	100	95-100	65-90	30-65	0-30	NP-9
	25-72	Silty clay, silty clay loam, clay loam, clay	CL, CH	A-6, A-7	0	0	100	100	90-100	80-95	35-55	11-30
EmB:												
Elmwood---------	0-6	Fine sandy loam	ML, SM	A-2, A-4	0	0	100	95-100	65-90	30-65	0-30	NP-7
	6-25	Fine sandy loam, sandy loam, loam	ML, SC, SM, CL	A-2, A-4	0	0	100	95-100	65-90	30-65	0-30	NP-9
	25-72	Silty clay, silty clay loam, clay loam, clay	CH, CL	A-6, A-7	0	0	100	100	90-100	80-95	35-55	11-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Fa:												
Fahey-----------	0-7	Loamy fine sand	SP-SM, SM	A-1, A-2, A-4	0-1	0-5	85-100	75-100	35-80	10-50	0-14	NP
	7-31	Very gravelly loamy fine sand, very gravelly loamy sand, gravelly loamy fine sand, cobbly loamy sand, very gravelly sand	GM, SP, SM	A-1, A-2-4, A-3	0-1	5-25	55-92	35-70	25-55	3-20	0-14	NP
	31-72	Very gravelly loamy sand, gravelly loamy sand, extremely gravelly loamy sand, cobbly sand	SP, GW, SW, GP	A-1	0-1	1-30	45-85	20-55	15-45	0-20	0-14	NP
FkA:												
Flackville------	0-9	Loamy fine sand	SW-SM, SM	A-2, A-2-4, A-4	0	0	100	90-100	55-80	10-40	0-14	NP
	9-29	Loamy fine sand, fine sand, sand	SW-SM, SM	A-1, A-2, A-3	0	0	100	90-100	45-80	5-35	0-14	NP
	29-72	Silty clay, silty clay loam, clay	CL-ML, CL	A-4, A-6, A-7, A-7-6	0	0	100	99-100	90-100	75-95	20-50	5-30
FkB:												
Flackville------	0-9	Loamy fine sand	SM, SW-SM	A-2, A-2-4, A-4	0	0	100	90-100	55-80	10-40	0-14	NP
	9-29	Loamy fine sand, fine sand, sand	SW-SM, SM	A-1, A-2, A-3	0	0	100	90-100	45-80	5-35	0-14	NP
	29-72	Silty clay, silty clay loam, clay	CL-ML, CL	A-4, A-6, A-7, A-7-6	0	0	100	99-100	90-100	75-95	20-50	5-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Fu:												
Fluvaquents, frequently flooded	0-10	Silt loam	CL, SM, ML	A-2, A-4, A-6	0	0-5	90-100	80-100	40-100	15-95	0-30	NP-20
	10-72	Very gravelly sand, gravelly silt loam, silty clay loam	SC-SM, ML, GM, CL	A-1, A-2, A-6	0	0-15	35-100	30-100	15-100	5-90	0-30	NP-20
Udifluvents, frequently flooded	0-4	Gravelly sandy loam	SM, CL, ML	A-2, A-4, A-6	0-1	0-5	80-100	75-100	40-100	15-95	0-30	NP-20
	4-72	Very gravelly sand, very gravelly loamy sand, fine sandy loam, gravelly loam	ML, GM, CL	A-1, A-2, A-4, A-6	0	0-15	55-100	45-100	15-100	5-90	0-30	NP-20
GrB:												
Grenville	0-5	Fine sandy loam	ML, SM	A-2, A-4	0-1	0-8	80-95	75-92	50-90	30-70	35-40	1-5
	5-37	Fine sandy loam, loam, gravelly fine sandy loam	SM, ML, CL-ML, GM	A-2, A-4	0-5	0-15	65-95	50-92	35-80	25-65	15-20	1-5
	37-72	Sandy loam, gravelly fine sandy loam, gravelly loam, very gravelly fine sandy loam	GM, ML, SM, GC-GM	A-1, A-2, A-4	0-7	1-15	60-92	45-86	30-70	15-55	15-20	1-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
GrC:												
Grenville-------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0-1	0-8	80-95	75-92	50-90	30-70	35-40	1-5
	5-37	Fine sandy loam, loam, gravelly fine sandy loam	ML, CL-ML, GM, SM	A-2, A-4	0-5	0-15	65-95	50-92	35-80	25-65	15-20	1-5
	37-72	Sandy loam, gravelly fine sandy loam, gravelly loam, very gravelly fine sandy loam	SM, ML, GM, GC-GM	A-1, A-2, A-4	0-7	1-15	60-92	45-86	30-70	15-55	15-20	1-5
GsD:												
Grenville, very stony----------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0-7	0-8	80-95	75-92	50-90	30-70	35-40	1-5
	5-37	Fine sandy loam, loam, gravelly fine sandy loam	ML, GM, CL-ML, SM	A-2, A-4	0-5	0-15	65-95	50-92	35-80	25-65	15-20	1-5
	37-72	Sandy loam, gravelly fine sandy loam, gravelly loam, very gravelly fine sandy loam	GM, SM, ML, GC-GM	A-1, A-2, A-4	0-7	1-15	60-92	45-86	30-70	15-55	15-20	1-5
Gu:												
Guff------------	0-9	Silty clay loam	CL, MH, ML	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-35
	9-39	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	85-100	75-95	38-65	20-35
	39-49	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
HaA:												
Hailesboro------	0-7	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	95-100	85-100	55-90	20-40	3-15
	7-24	Silt loam, very fine sandy loam, silty clay loam	CL-ML, ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	75-95	25-35	3-13
	24-44	Silt loam, very fine sandy loam, silty clay loam	ML, CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	75-95	25-35	3-13
	44-72	Silt loam, silty clay loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-100	60-95	25-35	3-13
HaB:												
Hailesboro------	0-7	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	55-90	20-40	3-15
	7-24	Silt loam, very fine sandy loam, silty clay loam	ML, CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	75-95	25-35	3-13
	24-44	Silt loam, very fine sandy loam, silty clay loam	ML, CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	75-95	25-35	3-13
	44-72	Silt loam, silty clay loam, very fine sandy loam	ML, CL, CL-ML	A-4, A-6	0	0	95-100	95-100	85-100	60-95	25-35	3-13
Hc:												
Hannawa---------	0-8	Loam	SM, ML	A-2-4, A-4	0	0-8	85-100	75-100	45-95	25-80	0-35	NP-10
	8-19	Fine sandy loam, gravelly fine sandy loam, loam, silt loam	SM, ML	A-2-4, A-4	0	0-12	80-100	70-100	45-95	20-75	0-35	NP-10
	19-27	Bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HeB:												
Heuvelton-------	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	---	0-5	85-100	75-100	70-100	65-95	25-40	5-20
	7-11	Silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	85-100	70-100	50-95	30-55	10-30
	11-22	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	95-100	85-100	80-100	75-95	30-55	10-30
	22-72	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0	95-100	85-100	80-100	75-95	25-50	10-30
HeC:												
Heuvelton, rolling--------	0-7	Silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	75-100	70-100	65-95	25-40	5-20
	7-11	Silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	85-100	70-100	50-95	30-55	10-30
	11-22	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	95-100	85-100	80-100	75-95	30-55	10-30
	22-72	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0	95-100	85-100	80-100	75-95	25-50	10-30
HkE:												
Heuvelton-------	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	---	0-5	85-100	75-100	70-100	65-95	25-40	5-20
	7-11	Silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	85-100	70-100	50-95	30-55	10-30
	11-22	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	95-100	85-100	80-100	75-95	30-55	10-30
	22-72	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0	95-100	85-100	80-100	75-95	25-50	10-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
HkE:												
Depeyster-------	0-10	Silt loam	CL-ML, ML, SC-SM	A-4	0	0	95-100	95-100	80-100	50-90	25-35	5-10
	10-27	Silt loam, silty clay loam	CL	A-6	0	0	95-100	95-100	90-100	75-95	25-40	10-20
	27-72	Stratified very fine sand to very fine sandy loam to silty clay loam, stratified sandy loam to silty clay loam to very fine sand, very fine sandy loam, silty clay loam	CL, CL-ML	A-4	0	0	95-100	95-100	70-100	40-90	20-40	NP-20
HnA:												
Hogansburg------	0-10	Fine sandy loam	SM, ML	A-4	0	0-8	85-99	75-95	55-80	30-70	35-40	1-5
	10-25	Loam, fine sandy loam, gravelly loam, silt loam	GM, CL-ML, SM, ML	A-2, A-4	0-5	0-15	60-95	50-92	35-85	25-70	15-20	1-5
	25-72	Gravelly fine sandy loam, gravelly loam, very gravelly fine sandy loam	GM, SM	A-1, A-2, A-4	0-7	0-15	60-90	50-75	35-65	20-50	15-20	1-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HnB:												
Hogansburg------	0-10	Fine sandy loam	ML, SM	A-4	0	0-8	85-99	75-95	55-80	30-70	35-40	1-5
	10-25	Loam, fine sandy loam, gravelly loam, silt loam	ML, SM, GM, CL-ML	A-2, A-4	0-5	0-15	60-95	50-92	35-85	25-70	15-20	1-5
	25-72	Gravelly fine sandy loam, gravelly loam, very gravelly fine sandy loam	GM, SM	A-1, A-2, A-4	0-7	0-15	60-90	50-75	35-65	20-50	15-20	1-5
HrB:												
Hogansburg, very stony-----	0-10	Fine sandy loam	ML, SM	A-4	1-7	0-8	85-99	75-95	55-80	30-70	35-40	1-5
	10-25	Loam, fine sandy loam, gravelly loam, silt loam	GM, ML, SM, CL-ML	A-2, A-4	0-5	0-15	60-95	50-92	35-85	25-70	15-20	1-5
	25-72	Gravelly fine sandy loam, gravelly loam, very gravelly fine sandy loam	GM, SM	A-1, A-2, A-4	0-7	0-15	60-90	50-75	35-65	20-50	15-20	1-5
Grenville, very stony----------	0-5	Fine sandy loam	ML, SM	A-2, A-4	0-7	0-8	80-95	75-92	50-90	30-70	35-40	1-5
	5-37	Fine sandy loam, loam, gravelly fine sandy loam	CL-ML, ML, GM, SM	A-2, A-4	0-5	0-15	65-95	50-92	35-80	25-65	15-20	1-5
	37-72	Sandy loam, gravelly fine sandy loam, gravelly loam, very gravelly fine sandy loam	GC-GM, GM, SM, ML	A-1, A-2, A-4	0-7	1-15	60-92	45-86	30-70	15-55	15-20	1-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
IaB:												
Insula----------	0-1	Slightly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	1-3	Highly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	3-16	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	GM, SM	A-1-b, A-2, A-4	0-7	0-15	60-90	50-75	30-70	15-50	0-25	NP-9
	16-25	Unweathered bedrock			---	---	---	---	---	---	---	---
InB:												
Insula----------	0-1	Slightly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	1-3	Highly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	3-16	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SM, GM	A-1-b, A-2, A-4	0-7	0-15	60-90	50-75	30-70	15-50	0-25	NP-9
	16-25	Unweathered bedrock			---	---	---	---	---	---	---	---
IrC:												
Insula, rolling-	0-1	Slightly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	1-3	Highly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	3-16	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SM, GM	A-1-b, A-2, A-4	0-7	0-15	60-90	50-75	30-70	15-50	0-25	NP-9
	16-25	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
IrC:												
Rock outcrop----	0-72	Unweathered bedrock			---	---	---	---	---	---	---	---
IrD:												
Insula, hilly---	0-1	Slightly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	1-3	Highly decomposed plant material	PT	A-8	0-7	0-15	---	---	---	---	---	---
	3-16	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SM, GM	A-1-b, A-2, A-4	0-7	0-15	60-90	50-75	30-70	15-50	0-25	NP-9
	16-25	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
KaA:												
Kalurah---------	0-11	Fine sandy loam	ML, SM	A-2, A-4	0-1	0-9	85-95	75-92	50-90	30-80	35-40	1-5
	11-47	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	SC-SM, GM, CL-ML, SM	A-1, A-2, A-4	0-7	0-15	60-95	50-92	35-85	15-65	15-20	1-5
	47-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	SC-SM, ML, GM, CL-ML	A-1, A-2, A-4	0-1	0-20	50-95	35-92	20-85	10-65	15-20	1-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
KaB:												
Kalurah---------	0-11	Fine sandy loam	ML, SM	A-2, A-4	0-1	0-9	85-95	75-92	50-90	30-80	35-40	1-5
	11-47	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	SM, SC-SM, GM, CL-ML	A-1, A-2, A-4	0-7	0-15	60-95	50-92	35-85	15-65	15-20	1-5
	47-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	ML, GM, CL-ML, SC-SM	A-1, A-2, A-4	0-1	0-20	50-95	35-92	20-85	10-65	15-20	1-5
KbB:												
Kalurah, very stony----------	0-11	Fine sandy loam	SM, ML	A-2, A-4	1-7	0-9	85-95	75-92	50-90	30-80	35-40	1-5
	11-47	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	SC-SM, CL-ML, GM, SM	A-1, A-2, A-4	0-7	0-15	60-95	50-92	35-85	15-65	15-20	1-5
	47-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	SC-SM, ML, CL-ML, GM	A-1, A-2, A-4	0-1	0-20	50-95	35-92	20-85	10-65	15-20	1-5
Pyrities, very stony----------	0-8	Fine sandy loam	GM, ML, SM	A-2, A-4	1-7	0-9	85-95	75-92	50-85	30-70	20-25	1-5
	8-40	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-2, A-4	0-4	0-15	60-95	50-92	35-85	15-65	20-25	1-5
	40-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	ML, SM, GM, SP-SM	A-1-b, A-2, A-4	0-7	0-20	50-95	35-92	20-80	10-65	20-25	1-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Lc:												
Lovewell--------	0-14	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	95-100	95-100	85-100	55-90	0-40	NP-15
	14-29	Silt loam, very fine sandy loam	CL, ML, CL-ML	A-4, A-6	0	0	95-100	95-100	85-100	55-90	0-40	NP-15
	29-72	Very fine sandy loam, silt loam, loamy very fine sand	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-100	50-90	0-40	NP-15
Ld:												
Loxley----------	0-3	Mucky peat	PT	A-8	0	0	---	---	---	---	---	---
	3-72	Muck	PT	A-8	0	0	---	---	---	---	---	---
LeC:												
Lyman-----------	0-4	Silt loam	SM, ML, GM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
LeD:												
Lyman, very bouldery-------	0-4	Silt loam	ML, SM, GM	A-2, A-4	1-5	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	SM, ML, GM	A-4, A-1, A-2	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Lt:												
Lyme, very bouldery-------	0-3	Sandy loam	ML, SM	A-2, A-4	1-5	0-10	80-95	75-92	40-85	25-65	0-25	NP-3
	3-16	Sandy loam, cobbly sandy loam, cobbly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-8	0-20	70-95	55-92	40-85	20-55	0-25	NP-3
	16-72	Gravelly sandy loam, cobbly loam, sandy loam	SM, ML	A-2, A-4	0-8	1-20	65-92	50-85	40-70	15-60	0-25	NP-3
Tughill, very bouldery-------	0-4	Muck	PT	A-8	0-8	0-20	---	---	---	---	---	---
	4-8	Gravelly mucky sandy loam	SC, GM, GC, SM	A-1, A-2, A-4	1-8	0-20	65-92	45-75	30-70	15-60	20-30	3-9
	8-40	Very gravelly sandy loam, very gravelly loam, very cobbly fine sandy loam	GM, GC, GC-GM	A-1, A-2	1-8	8-30	55-85	30-50	20-50	10-45	20-30	3-9
	40-72	Very gravelly sandy loam, very gravelly loam, very cobbly fine sandy loam	GC, GC-GM, GM	A-1, A-2	1-8	8-30	55-85	30-50	20-50	10-45	20-30	3-9
MaA:												
Malone----------	0-10	Loam	GC, SC, CL	A-2, A-6, A-7	0-1	0-15	75-95	60-95	40-80	25-65	35-45	12-20
	10-25	Gravelly fine sandy loam, gravelly sandy loam, loam	CL-ML, GC, SC, SC-SM	A-1, A-2, A-4, A-6	0-1	0-15	65-95	50-90	35-85	15-65	15-25	5-15
	25-72	Gravelly sandy loam, very gravelly fine sandy loam, gravelly loam	GC-GM, SC, GC	A-1, A-2, A-4, A-6	1-10	0-15	50-95	35-90	20-75	10-50	15-25	5-15

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
MaB:												
Malone----------	0-10	Loam	SC, GC, CL	A-2, A-6, A-7	0-1	0-15	75-95	60-95	40-80	25-65	35-45	12-20
	10-25	Gravelly fine sandy loam, gravelly sandy loam, loam	CL-ML, SC-SM, SC, GC	A-1, A-2, A-4, A-6	0-1	0-15	65-95	50-90	35-85	15-65	15-25	5-15
	25-72	Gravelly sandy loam, very gravelly fine sandy loam, gravelly loam	SC, GC-GM, GC	A-1, A-2, A-4, A-6	1-10	0-15	50-95	35-90	20-75	10-50	15-25	5-15
MbB:												
Malone, very stony----------	0-10	Loam	SC, GC, CL	A-2, A-6, A-7	1-7	0-15	75-95	60-95	40-80	25-65	35-45	12-20
	10-25	Gravelly fine sandy loam, gravelly sandy loam, loam	GC, SC-SM, CL-ML, SC	A-1, A-2, A-4, A-6	0-1	0-15	65-95	50-90	35-85	15-65	15-25	5-15
	25-72	Gravelly sandy loam, very gravelly fine sandy loam, gravelly loam	GC-GM, GC, SC	A-1, A-2, A-4, A-6	1-10	0-15	50-95	35-90	20-75	10-50	15-25	5-15
MdB:												
Malone, undulating-----	0-10	Loam	SC, GC, CL	A-2, A-6, A-7	0-1	0-15	75-95	60-95	40-80	25-65	35-45	12-20
	10-25	Gravelly fine sandy loam, gravelly sandy loam, loam	CL-ML, GC, SC, SC-SM	A-4, A-6, A-1, A-2	0-1	0-15	65-95	50-90	35-85	15-65	15-25	5-15
	25-72	Gravelly sandy loam, very gravelly fine sandy loam, gravelly loam	GC, SC, GC-GM	A-1, A-2, A-4, A-6	1-10	0-15	50-95	35-90	20-75	10-50	15-25	5-15

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
MdB:												
Adjidaumo-------	0-8	Silty clay	ML, MH	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CL, CH	A-7, A-6	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CH, CL	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35
MeB:												
Malone, very stony----------	0-10	Loam	SC, GC, CL	A-2, A-6, A-7	1-7	0-15	75-95	60-95	40-80	25-65	35-45	12-20
	10-25	Gravelly fine sandy loam, gravelly sandy loam, loam	GC, CL-ML, SC, SC-SM	A-1, A-2, A-4, A-6	0-1	0-15	65-95	50-90	35-85	15-65	15-25	5-15
	25-72	Gravelly sandy loam, very gravelly fine sandy loam, gravelly loam	GC, SC, GC-GM	A-1, A-2, A-4, A-6	1-10	0-15	50-95	35-90	20-75	10-50	15-25	5-15
Adjidaumo-------	0-8	Silty clay	MH, ML	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35
MfA:												
Matoon----------	0-8	Silty clay loam	MH, ML, OL	A-6, A-7	0	0	96-100	96-100	85-100	65-95	35-65	10-25
	8-12	Silty clay loam, silty clay, silt loam	MH, ML	A-6, A-7	0	0	96-100	96-100	85-100	65-95	35-65	10-25
	12-27	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-30
	27-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
MfB:												
Matoon----------	0-8	Silty clay loam	OL, ML, MH	A-6, A-7	0	0	96-100	96-100	85-100	65-95	35-65	10-25
	8-12	Silty clay loam, silty clay, silt loam	ML, MH	A-6, A-7	0	0	96-100	96-100	85-100	65-95	35-65	10-25
	12-27	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-30
	27-37	Unweathered bedrock			---	---	---	---	---	---	---	---
Mh:												
Mino------------	0-10	Fine sandy loam	ML, SM	A-4	0	0	95-100	92-100	70-100	40-90	0-20	NP-4
	10-32	Fine sandy loam, very fine sandy loam, loam, loamy very fine sand	ML, SM	A-4	0	0	95-100	92-100	70-95	40-75	0-20	NP-4
	32-72	Fine sandy loam, very fine sandy loam, loam	ML, SM	A-4	0	0	95-100	92-100	70-95	40-75	0-20	NP-4
Mn:												
Munuscong-------	0-8	Mucky fine sandy loam	SC, SM, SC-SM	A-2, A-4	0	0	100	92-100	60-85	30-55	0-25	2-8
	8-26	Fine sandy loam, sandy loam	SC-SM, SM, SC	A-2, A-4	0	0	100	92-100	60-85	30-55	0-30	2-10
	26-98	Silty clay, silty clay loam, clay	CL, MH, ML, CH	A-7	0	0	100	95-100	90-100	80-95	40-80	20-40
MsA:												
Muskellunge-----	0-12	Silty clay loam	MH, ML, CL, CH	A-6, A-7	0	0	92-100	92-100	90-100	70-95	30-55	10-25
	12-37	Clay, silty clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	92-100	90-100	70-95	30-55	15-30
	37-72	Silty clay, clay	CL, CH	A-6, A-7	0	0	92-100	85-100	75-100	50-95	30-55	15-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
MsB:												
Muskellunge-----	0-12	Silty clay loam	CL, CH, MH, ML	A-6, A-7	0	0	92-100	92-100	90-100	70-95	30-55	10-25
	12-37	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	92-100	90-100	70-95	30-55	15-30
	37-72	Silty clay, clay	CL, CH	A-6, A-7	0	0	92-100	85-100	75-100	50-95	30-55	15-30
MuB:												
Muskellunge-----	0-12	Silty clay loam	CH, CL, MH, ML	A-6, A-7	0	0	92-100	92-100	90-100	70-95	30-55	10-25
	12-37	Clay, silty clay, silty clay loam	CH, CL	A-6, A-7	0	0	95-100	92-100	90-100	70-95	30-55	15-30
	37-72	Silty clay, clay	CH, CL	A-6, A-7	0	0	92-100	85-100	75-100	50-95	30-55	15-30
MwB:												
Muskellunge, undulating-----	0-12	Silty clay loam	CL, MH, ML, CH	A-6, A-7	0	0	92-100	92-100	90-100	70-95	30-55	10-25
	12-37	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	92-100	90-100	70-95	30-55	15-30
	37-72	Silty clay, clay	CH, CL	A-6, A-7	0	0	92-100	85-100	75-100	50-95	30-55	15-30
Adjidaumo-------	0-8	Silty clay	MH, ML	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-65	10-25
	8-27	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	85-100	70-95	38-65	20-35
	27-72	Clay, silty clay, silty clay loam	CH, CL	A-6, A-7	0	0	85-100	70-100	65-100	60-95	35-60	15-35

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Na:												
Naumburg--------	0-5	Moderately decomposed plant material	PT		0	0	---	---	---	---	---	---
	5-19	Loamy fine sand	SM, SP-SM, SW-SM	A-2, A-3, A-4	0	0	95-100	90-100	50-80	5-45	0-14	NP
	19-41	Loamy fine sand, sand, loamy sand	SM, SW-SM, SP-SM	A-1, A-2, A-3	0	0	95-100	90-100	45-80	5-35	0-14	NP
	41-72	Sand, loamy fine sand, coarse sand	SP-SM, SW-SM, SM	A-1, A-2, A-3	0	0	95-100	90-100	45-80	5-35	0-14	NP
NhA:												
Nehasne---------	0-7	Sandy loam	ML, SM	A-2-4, A-4	0	0-8	80-92	75-86	45-75	20-60	0-20	NP
	7-23	Gravelly fine sandy loam, fine sandy loam, loam	GM, ML, SM	A-2, A-4	0	0-15	70-92	60-85	40-75	20-55	0-20	NP
	23-25	Gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GM, SM	A-1, A-2, A-4	0-1	3-20	60-90	40-70	30-65	15-50	0-20	NP
	25-35	Unweathered bedrock			---	---	---	---	---	---	---	---
NhB:												
Nehasne---------	0-7	Sandy loam	SM, ML	A-2-4, A-4	0	0-8	80-92	75-86	45-75	20-60	0-20	NP
	7-23	Gravelly fine sandy loam, fine sandy loam, loam	SM, ML, GM	A-2, A-4	0	0-15	70-92	60-85	40-75	20-55	0-20	NP
	23-25	Gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	SM, GM	A-1, A-2, A-4	0-1	3-20	60-90	40-70	30-65	15-50	0-20	NP
	25-35	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
NhC:												
Nehasne---------	0-7	Sandy loam	SM, ML	A-2-4, A-4	0	0-8	80-92	75-86	45-75	20-60	0-20	NP
	7-23	Gravelly fine sandy loam, fine sandy loam, loam	GM, SM, ML	A-2, A-4	0	0-15	70-92	60-85	40-75	20-55	0-20	NP
	23-25	Gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GM, SM	A-4, A-1, A-2	0-1	3-20	60-90	40-70	30-65	15-50	0-20	NP
	25-35	Unweathered bedrock			---	---	---	---	---	---	---	---
NoA:												
Nicholville-----	0-8	Very fine sandy loam	ML, CL-ML	A-4, A-6	0	0	92-100	85-100	70-100	50-90	20-40	2-12
	8-18	Very fine sandy loam, silt loam, loamy very fine sand	ML, CL-ML	A-4	0	0	92-100	85-100	75-100	45-90	15-25	NP-5
	18-39	Very fine sandy loam, loamy very fine sand, silt loam, very fine sand	SC-SM, ML, CL-ML, SM	A-2, A-4	0	0	92-100	85-100	65-100	30-90	15-25	NP-5
	39-72	Loamy very fine sand, very fine sandy loam, silt loam, very fine sand, sandy loam	SM, ML, CL-ML, SC-SM	A-2, A-4	0	0	92-100	85-100	50-100	30-90	15-25	NP-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
NoB:												
Nicholville-----	0-8	Very fine sandy loam	CL-ML, ML	A-4, A-6	0	0	92-100	85-100	70-100	50-90	20-40	2-12
	8-18	Very fine sandy loam, silt loam, loamy very fine sand	ML, CL-ML	A-4	0	0	92-100	85-100	75-100	45-90	15-25	NP-5
	18-39	Very fine sandy loam, loamy very fine sand, silt loam, very fine sand	SM, CL-ML, ML, SC-SM	A-2, A-4	0	0	92-100	85-100	65-100	30-90	15-25	NP-5
	39-72	Loamy very fine sand, very fine sandy loam, silt loam, very fine sand, sandy loam	SM, CL-ML, SC-SM, ML	A-2, A-4	0	0	92-100	85-100	50-100	30-90	15-25	NP-5
NoC:												
Nicholville, rolling--------	0-8	Very fine sandy loam	CL-ML, ML	A-4, A-6	0	0	92-100	85-100	70-100	50-90	20-40	2-12
	8-18	Very fine sandy loam, silt loam, loamy very fine sand	ML, CL-ML	A-4	0	0	92-100	85-100	75-100	45-90	15-25	NP-5
	18-39	Very fine sandy loam, loamy very fine sand, silt loam, very fine sand	SM, SC-SM, CL-ML, ML	A-2, A-4	0	0	92-100	85-100	65-100	30-90	15-25	NP-5
	39-72	Loamy very fine sand, very fine sandy loam, silt loam, very fine sand, sandy loam	ML, SC-SM, CL-ML, SM	A-2, A-4	0	0	92-100	85-100	50-100	30-90	15-25	NP-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
NrB:												
Nicholville-----	0-8	Very fine sandy loam	CL-ML, ML	A-4, A-6	0	0	92-100	85-100	70-100	50-90	20-40	2-12
	8-18	Very fine sandy loam, silt loam, loamy very fine sand	ML, CL-ML	A-4	0	0	92-100	85-100	75-100	45-90	15-25	NP-5
	18-39	Very fine sandy loam, loamy very fine sand, silt loam, very fine sand	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	92-100	85-100	65-100	30-90	15-25	NP-5
	39-72	Loamy very fine sand, very fine sandy loam, silt loam, very fine sand, sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	92-100	85-100	50-100	30-90	15-25	NP-5
OgA:												
Ogdensburg------	0-9	Loam	SM, ML	A-1, A-2, A-4	0	0-8	85-96	75-96	45-90	20-80	25-40	2-10
	9-21	Fine sandy loam, silt loam, gravelly sandy loam	GM, CL-ML, SM, ML	A-1, A-2, A-4	0	0-20	60-96	50-96	30-85	15-70	15-25	2-7
	21-24	Very gravelly fine sandy loam, flaggy sandy loam, flaggy silt loam	SM, ML, GM, CL-ML	A-1, A-2, A-4	0	4-25	50-92	35-75	15-70	10-65	15-25	2-7
	24-34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
OgB:												
Ogdensburg------	0-9	Loam	ML, SM	A-1, A-2, A-4	0	0-8	85-96	75-96	45-90	20-80	25-40	2-10
	9-21	Fine sandy loam, silt loam, gravelly sandy loam	SM, CL-ML, GM, ML	A-1, A-2, A-4	0	0-20	60-96	50-96	30-85	15-70	15-25	2-7
	21-24	Very gravelly fine sandy loam, flaggy sandy loam, flaggy silt loam	CL-ML, GM, ML, SM	A-1, A-2, A-4	0	4-25	50-92	35-75	15-70	10-65	15-25	2-7
	24-34	Unweathered bedrock			---	---	---	---	---	---	---	---
Pg:												
Pits, gravel and sand-------	0-6	Extremely gravelly coarse sand	SP, SM, GW, GP	A-1	---	0-15	35-100	20-100	10-75	0-30	0-14	NP
	6-72	Extremely gravelly sand, extremely gravelly coarse sand, very gravelly coarse sand	SW, SP, GW, GP	A-1	---	0-25	30-95	10-95	5-70	0-25	0-14	NP
Ph:												
Pits, quarry----	0-72	Unweathered bedrock			---	---	---	---	---	---	0-14	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
PmC:												
Potsdam---------	0-3	Slightly decomposed plant material	PT	A-8	0-1	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-1	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	SM, ML	A-4	0-1	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
PoC:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	ML, SM	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
PoC:												
Tunbridge, very bouldery-------	0-3	Silt loam	GM, ML, SM	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	SM, ML	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	ML, SM	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
PoD:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	ML, SM	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	SM, GM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
PoD:												
Tunbridge, very bouldery-------	0-3	Silt loam	GM, ML, SM	A-2, A-4	1-5	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	ML, SM	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
PpD:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	ML, SM	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
PpD:												
Berkshire, very bouldery-------	0-7	Loam	SM, ML	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	SM, ML	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6
PsC:												
Potsdam, very bouldery-------	0-3	Slightly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	6-9	Very fine sandy loam	ML, SM	A-4	1-5	0-5	92-100	75-100	65-100	40-80	0-15	NP-4
	9-22	Silt loam, very fine sandy loam, loam	ML, SM	A-4	0-1	0-5	92-100	75-100	75-100	45-80	0-15	NP-4
	22-34	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4
	34-72	Gravelly sandy loam, gravelly fine sandy loam, sandy loam	GM, SM	A-1, A-2, A-4	1-15	1-25	60-95	50-85	30-75	15-50	0-15	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
PsC:												
Crary, very bouldery-------	0-8	Silt loam	SM, ML	A-4	1-5	0-15	85-100	75-100	55-95	40-90	20-30	1-6
	8-24	Silt loam, very fine sandy loam, loam	SM, ML	A-4	0-1	0-5	85-100	75-100	60-95	40-90	0-30	NP-6
	24-36	Stony fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	1-15	1-20	65-92	50-85	35-80	20-65	0-30	NP-6
	36-72	Stony fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	1-15	1-20	60-92	50-85	35-80	15-65	0-30	NP-6
PvB:												
Pyrities--------	0-8	Fine sandy loam	GM, ML, SM	A-2, A-4	0-1	0-9	85-95	75-92	50-85	30-70	20-25	1-5
	8-40	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	SM, ML, GM	A-2, A-4	0-4	0-15	60-95	50-92	35-85	15-65	20-25	1-5
	40-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	SP-SM, SM, ML, GM	A-1-b, A-2, A-4	0-7	0-20	50-95	35-92	20-80	10-65	20-25	1-5
PvC:												
Pyrities--------	0-8	Fine sandy loam	SM, ML, GM	A-2, A-4	0-1	0-9	85-95	75-92	50-85	30-70	20-25	1-5
	8-40	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-2, A-4	0-4	0-15	60-95	50-92	35-85	15-65	20-25	1-5
	40-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	ML, SP-SM, SM, GM	A-1-b, A-2, A-4	0-7	0-20	50-95	35-92	20-80	10-65	20-25	1-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
PxD:												
Pyrities, very stony----------	0-8	Fine sandy loam	SM, ML, GM	A-2, A-4	1-7	0-9	85-95	75-92	50-85	30-70	20-25	1-5
	8-40	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	SM, ML, GM	A-2, A-4	0-4	0-15	60-95	50-92	35-85	15-65	20-25	1-5
	40-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	GM, SP-SM, ML, SM	A-1-b, A-2, A-4	0-7	0-20	50-95	35-92	20-80	10-65	20-25	1-5
PyB:												
Pyrities, rocky-	0-8	Fine sandy loam	GM, ML, SM	A-2, A-4	0-1	0-9	85-95	75-92	50-85	30-70	20-25	1-5
	8-40	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-2, A-4	0-4	0-15	60-95	50-92	35-85	15-65	20-25	1-5
	40-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	GM, ML, SM, SP-SM	A-1-b, A-2, A-4	0-7	0-20	50-95	35-92	20-80	10-65	20-25	1-5
PyC:												
Pyrities, rocky-	0-8	Fine sandy loam	SM, ML, GM	A-2, A-4	0-1	0-9	85-95	75-92	50-85	30-70	20-25	1-5
	8-40	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-2, A-4	0-4	0-15	60-95	50-92	35-85	15-65	20-25	1-5
	40-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	SP-SM, GM, ML, SM	A-1-b, A-2, A-4	0-7	0-20	50-95	35-92	20-80	10-65	20-25	1-5

15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
PzC:												
Pyrities, very stony----------	0-8	Fine sandy loam	SM, GM, ML	A-2, A-4	1-7	0-9	85-95	75-92	50-85	30-70	20-25	1-5
	8-40	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	GM, ML, SM	A-2, A-4	0-4	0-15	60-95	50-92	35-85	15-65	20-25	1-5
	40-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	GM, ML, SP-SM, SM	A-1-b, A-2, A-4	0-7	0-20	50-95	35-92	20-80	10-65	20-25	1-5
Kalurah, very stony----------	0-11	Fine sandy loam	ML, SM	A-2, A-4	1-7	0-9	85-95	75-92	50-90	30-80	35-40	1-5
	11-47	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, loam	CL-ML, GM, SC-SM, SM	A-1, A-2, A-4	0-7	0-15	60-95	50-92	35-85	15-65	15-20	1-5
	47-72	Gravelly fine sandy loam, gravelly loam, very gravelly sandy loam	SC-SM, ML, GM, CL-ML	A-1, A-2, A-4	0-1	0-20	50-95	35-92	20-85	10-65	15-20	1-5
QwB:												
Quetico---------	0-1	Moderately decomposed plant material	PT	A-8	0	0-5	---	---	---	---	---	---
	1-8	Loam	SC-SM, SM, SC	A-2, A-4	0	0-5	65-96	50-96	35-90	20-70	20-30	3-10
	8-17	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-72	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
QwB:												
Insula----------	0-1	Slightly decomposed plant material	PT	A-8	---	---	---	---	---	---	---	---
	1-3	Highly decomposed plant material	PT	A-8	---	---	---	---	---	---	---	---
	3-16	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	GM, SM	A-1-b, A-2, A-4	0-7	0-15	60-90	50-75	30-70	15-50	0-25	NP-9
	16-25	Unweathered bedrock			---	---	---	---	---	---	---	---
RaA:												
Raquette--------	0-9	Sandy loam	SM	A-2, A-4	---	0-8	80-96	75-95	45-75	20-50	16-25	NP-4
	9-19	Sandy loam, gravelly loamy sand, loamy fine sand, fine sandy loam	SM	A-1, A-2, A-4	---	0-15	65-96	50-95	30-70	15-50	16-25	NP-4
	19-25	Gravelly loamy sand, sandy loam, fine sandy loam	SM	A-1, A-2, A-4	---	0-15	65-96	50-95	30-70	15-50	16-25	NP-4
	25-72	Very gravelly loamy coarse sand, very gravelly sand, gravelly loamy sand, very gravelly loamy fine sand	GW, GP, GW-GM, SP	A-1	---	0-25	45-85	30-70	15-50	2-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
RaB:												
Raquette--------	0-9	Sandy loam	SM	A-2, A-4	---	0-8	80-96	75-95	45-75	20-50	16-25	NP-4
	9-19	Sandy loam, gravelly loamy sand, loamy fine sand, fine sandy loam	SM	A-1, A-2, A-4	---	0-15	65-96	50-95	30-70	15-50	16-25	NP-4
	19-25	Gravelly loamy sand, sandy loam, fine sandy loam	SM	A-1, A-2, A-4	---	0-15	65-96	50-95	30-70	15-50	16-25	NP-4
	25-72	Very gravelly loamy coarse sand, very gravelly sand, gravelly loamy sand, very gravelly loamy fine sand	GW, SP, GW-GM, GP	A-1	---	0-25	45-85	30-70	15-50	2-20	0-14	NP
RaC:												
Raquette--------	0-9	Sandy loam	SM	A-2, A-4	---	0-8	80-96	75-95	45-75	20-50	16-25	NP-4
	9-19	Sandy loam, gravelly loamy sand, loamy fine sand, fine sandy loam	SM	A-1, A-2, A-4	---	0-15	65-96	50-95	30-70	15-50	16-25	NP-4
	19-25	Gravelly loamy sand, sandy loam, fine sandy loam	SM	A-1, A-2, A-4	---	0-15	65-96	50-95	30-70	15-50	16-25	NP-4
	25-72	Very gravelly loamy coarse sand, very gravelly sand, gravelly loamy sand, very gravelly loamy fine sand	GP, GW, SP, GW-GM	A-1	---	0-25	45-85	30-70	15-50	2-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Rd:												
Redwater--------	0-7	Fine sandy loam	SM, ML, CL-ML, SC-SM	A-2, A-2-4, A-4, A-6	0	0	80-100	75-100	50-100	25-80	15-35	NP-15
	7-38	Fine sandy loam, loam, silt loam	SM, SC-SM, ML, CL-ML	A-2, A-2-4, A-4, A-6	0	0	80-100	75-100	50-95	30-75	15-35	NP-15
	38-50	Fine sandy loam, stratified gravelly sandy loam to sand, loamy fine sand, loamy sand	GW, SM, SW, GM	A-1, A-2, A-2-4, A-3	0	0-20	50-100	35-100	20-85	0-50	0-14	NP
	50-60	Unweathered bedrock			---	---	---	---	---	---	---	---
RoA:												
Roundabout------	0-10	Silt loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-30	NP-4
	10-31	Silt loam, very fine sandy loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-30	NP-4
	31-55	Silt loam, very fine sandy loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-35	NP-4
	55-72	Silt loam, very fine sandy loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-35	NP-4
RoB:												
Roundabout------	0-10	Silt loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-30	NP-4
	10-31	Silt loam, very fine sandy loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-30	NP-4
	31-55	Silt loam, very fine sandy loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-35	NP-4
	55-72	Silt loam, very fine sandy loam	ML	A-4	0	0	100	94-100	80-100	55-90	0-35	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Rt:												
Runeberg--------	0-10	Loam	ML, CL-ML	A-4	0-1	0-5	85-96	75-95	50-90	30-70	0-25	NP-5
	10-24	Sandy loam, loam, gravelly fine sandy loam	SC, ML, SM, SC-SM	A-2, A-4	0-4	0-8	85-96	75-95	50-80	30-60	15-25	3-10
	24-72	Sandy loam, loam, gravelly fine sandy loam	SC, ML, SM, SC-SM	A-2, A-4	0-5	0-8	80-96	75-95	45-80	25-60	15-25	3-10
Ru:												
Runeberg, very stony----------	0-10	Loam	ML, CL-ML	A-4	1-5	0-5	85-96	75-95	50-90	30-70	0-25	NP-5
	10-24	Sandy loam, loam, gravelly fine sandy loam	ML, SM, SC-SM, SC	A-2, A-4	0-4	0-8	85-96	75-95	50-80	30-60	15-25	3-10
	24-72	Sandy loam, loam, gravelly fine sandy loam	SM, SC-SM, SC, ML	A-2, A-4	0-5	0-8	80-96	75-95	45-80	25-60	15-25	3-10
SaB:												
Salmon----------	0-13	Very fine sandy loam	ML, CL-ML	A-4, A-6	0	0	100	85-100	75-100	50-90	20-40	2-12
	13-25	Very fine sandy loam, silt loam	ML, CL-ML	A-4	0	0	100	85-100	75-100	50-90	15-25	NP-5
	25-30	Silt loam, very fine sandy loam	ML, CL-ML	A-4	0	0	100	85-100	75-100	50-90	15-25	NP-5
	30-72	Silt loam, very fine sandy loam, sandy loam	SM, ML, CL-ML, SC-SM	A-2, A-4	0	0	100	85-100	55-100	25-90	15-25	NP-5

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
SaC:												
Salmon, rolling-	0-13	Very fine sandy loam	CL-ML, ML	A-4, A-6	0	0	100	85-100	75-100	50-90	20-40	2-12
	13-25	Very fine sandy loam, silt loam	CL-ML, ML	A-4	0	0	100	85-100	75-100	50-90	15-25	NP-5
	25-30	Silt loam, very fine sandy loam	CL-ML, ML	A-4	0	0	100	85-100	75-100	50-90	15-25	NP-5
	30-72	Silt loam, very fine sandy loam, sandy loam	SM, CL-ML, ML, SC-SM	A-2, A-4	0	0	100	85-100	55-100	25-90	15-25	NP-5
Se:												
Searsport-------	0-6	Muck	PT	A-8	0	0	---	---	---	---	---	---
	6-10	Mucky loamy fine sand, loamy fine sand, mucky sand, fine sandy loam	SP-SM, SM	A-4, A-1, A-2, A-3	0	0	85-100	75-100	40-75	5-45	0-20	NP
	10-34	Loamy fine sand, loamy sand, sand, coarse sand	SP-SM, SP, SM	A-1, A-2, A-3, A-4	0	0	85-100	75-100	40-80	2-45	0-14	NP
	34-72	Stratified fine sand to sand to gravelly sand, sand, gravelly loamy fine sand, very gravelly coarse sand	SP, SM, GP, GM	A-1, A-2, A-3	0	0	50-100	40-100	20-80	0-35	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Sg: Stockholm-------	0-10	Loamy fine sand	SM, SP-SM	A-2, A-4	0	0	100	92-100	60-85	10-45	0-14	NP
	10-23	Loamy fine sand, fine sand, loamy sand, sand	SP-SM, SM	A-2, A-3, A-4	0	0	100	92-100	55-80	5-40	0-14	NP
	23-30	Clay, clay loam, silty clay, silty clay loam	CL-ML, CL	A-4, A-6, A-7, A-7-6	0	0	100	92-100	85-100	70-95	20-50	5-30
	30-72	Clay, clay loam, silty clay, silty clay loam	CL, CL-ML	A-4, A-6, A-7, A-7-6	0	0	100	92-100	85-100	70-95	20-50	5-30
ShB: Summerville-----	0-6	Fine sandy loam	CL, CL-ML, SC-SM, SC	A-2-4, A-4	0	0-25	92-100	90-100	55-95	25-65	20-30	4-10
	6-12	Fine sandy loam, sandy loam, loam	SC-SM, SC, CL-ML, CL	A-2-4, A-2-6, A-4	0	0-25	92-100	90-100	55-95	25-70	20-35	4-15
	12-22	Unweathered bedrock			---	---	---	---	---	---	---	---
SkB: Summerville, rocky----------	0-6	Fine sandy loam	SC-SM, CL-ML, CL, SC	A-2-4, A-4	0	0-25	92-100	90-100	55-95	25-65	20-30	4-10
	6-12	Fine sandy loam, sandy loam, loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4	0	0-25	92-100	90-100	55-95	25-70	20-35	4-15
	12-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Gouverneur------	0-7	Channery loam	CL, CL-ML, ML, SM	A-2, A-4, A-6	0	0	75-97	70-95	50-90	30-80	15-30	3-15
	7-9	Channery fine sandy loam, fine sandy loam, loam, channery silt loam	CL, CL-ML, ML, SM	A-2, A-4, A-6	0	0	75-97	70-95	50-90	30-80	15-30	3-15
	9-19	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
SlD:												
Summerville, hilly----------	0-6	Fine sandy loam	SC, CL, CL-ML, SC-SM	A-2-4, A-4	0	0-25	92-100	90-100	55-95	25-65	20-30	4-10
	6-12	Fine sandy loam, sandy loam, loam	SC-SM, CL, SC, CL-ML	A-2-4, A-2-6, A-4	0	0-25	92-100	90-100	55-95	25-70	20-35	4-15
	12-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-72	Unweathered bedrock			---	---	---	---	---	---	---	---
SmC:												
Summerville, rolling--------	0-6	Fine sandy loam	SC-SM, CL, CL-ML, SC	A-2-4, A-4	0	0-25	92-100	90-100	55-95	25-65	20-30	4-10
	6-12	Fine sandy loam, sandy loam, loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4	0	0-25	92-100	90-100	55-95	25-70	20-35	4-15
	12-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Nehasne, rolling--------	0-7	Sandy loam	SM, ML	A-2-4, A-4	0	0-8	80-92	75-86	45-75	20-60	0-20	NP
	7-23	Gravelly fine sandy loam, fine sandy loam, loam	SM, ML, GM	A-2, A-4	0	0-15	70-92	60-85	40-75	20-55	0-20	NP
	23-25	Gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	SM, GM	A-1, A-2, A-4	0-1	3-20	60-90	40-70	30-65	15-50	0-20	NP
	25-35	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
SpB:												
Sunapee---------	0-1	Moderately decomposed plant material	PT	A-8	0-1	0-5	---	---	---	---	---	---
	1-4	Fine sandy loam	ML, CL-ML	A-4, A-6	0-1	0-5	85-96	75-92	60-85	35-70	20-40	2-12
	4-23	Fine sandy loam, sandy loam, gravelly fine sandy loam	SM	A-2, A-4	0-1	0-15	70-96	55-92	30-75	20-50	0-25	NP-3
	23-72	Fine sandy loam, gravelly sandy loam, gravelly loamy sand	SM	A-2, A-4	0-5	0-15	70-96	55-92	30-75	20-50	0-14	NP
SsB:												
Sunapee, very bouldery-------	0-1	Moderately decomposed plant material	PT	A-8	0-5	0-5	---	---	---	---	---	---
	1-4	Fine sandy loam	ML, CL-ML	A-4, A-6	1-5	0-5	85-96	75-92	60-85	35-70	20-40	2-12
	4-23	Fine sandy loam, sandy loam, gravelly fine sandy loam	SM	A-2, A-4	0-1	0-15	70-96	55-92	30-75	20-50	0-25	NP-3
	23-72	Fine sandy loam, gravelly sandy loam, gravelly loamy sand	SM	A-2, A-4	0-5	0-15	70-96	55-92	30-75	20-50	0-14	NP
Berkshire, very bouldery-------	0-7	Loam	SM, ML	A-2, A-4, A-5	1-5	0-15	75-95	70-92	45-85	25-65	0-50	NP-10
	7-30	Loam, gravelly loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4, A-5	0-10	0-15	75-92	70-85	40-80	20-60	0-50	NP-10
	30-72	Sandy loam, fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-15	75-92	70-85	40-80	20-55	0-20	NP-6

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Sw:												
Swanton---------	0-8	Fine sandy loam	SM, SC, ML, CL	A-2, A-4	0	0	100	95-100	60-95	30-65	0-30	NP-9
	8-26	Fine sandy loam, sandy loam	ML, SC, SM, CL	A-2, A-4	0	0	100	95-100	60-90	30-55	0-30	NP-9
	26-72	Silty clay loam, silty clay, clay	CH, CL	A-6, A-7	0	0	100	100	95-100	80-95	25-55	11-30
TdA:												
Trout River-----	0-8	Loamy sand	SM, SP-SM	A-1, A-2, A-4	0	0-8	85-100	75-100	35-80	10-45	0-14	NP
	8-33	Very gravelly loamy sand, gravelly loamy sand, very gravelly sand	SM, SP-SM, SP	A-1	0-1	0-30	50-85	30-65	15-45	3-20	0-14	NP
	33-72	Very gravelly loamy sand, extremely gravelly sand, very cobbly sand	SW, SP, GW, GP	A-1	0-3	1-30	45-75	20-50	10-35	0-15	0-14	NP
TdB:												
Trout River-----	0-8	Loamy sand	SM, SP-SM	A-1, A-2, A-4	0	0-8	85-100	75-100	35-80	10-45	0-14	NP
	8-33	Very gravelly loamy sand, gravelly loamy sand, very gravelly sand	SP-SM, SP, SM	A-1	0-1	0-30	50-85	30-65	15-45	3-20	0-14	NP
	33-72	Very gravelly loamy sand, extremely gravelly sand, very cobbly sand	GP, SW, SP, GW	A-1	0-3	1-30	45-75	20-50	10-35	0-15	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
TfB:												
Trout River, very stony-----	0-8	Loamy sand	SP-SM, SM	A-1, A-2, A-4	1-5	0-8	85-100	75-100	35-80	10-45	0-14	NP
	8-33	Very gravelly loamy sand, gravelly loamy sand, very gravelly sand	SP-SM, SP, SM	A-1	0-1	0-30	50-85	30-65	15-45	3-20	0-14	NP
	33-72	Very gravelly loamy sand, extremely gravelly sand, very cobbly sand	SP, SW, GW, GP	A-1	0-3	1-30	45-75	20-50	10-35	0-15	0-14	NP
Fahey, very stony----------	0-7	Loamy fine sand	SP-SM, SM	A-1, A-2, A-4	1-5	0-5	85-100	75-100	35-80	10-50	0-14	NP
	7-31	Very gravelly loamy fine sand, very gravelly loamy sand, gravelly loamy fine sand, cobbly loamy sand, very gravelly sand	SP, SM, GM	A-1, A-2-4, A-3	0-1	5-25	55-92	35-70	25-55	3-20	0-14	NP
	31-72	Very gravelly loamy sand, gravelly loamy sand, extremely gravelly loamy sand, cobbly sand	SP, GW, GP, SW	A-1	0-1	1-30	45-85	20-55	15-45	0-20	0-14	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
TuD:												
Tunbridge-------	0-3	Silt loam	SM, ML, GM	A-2, A-4	0-2	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	ML, SM	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Lyman-----------	0-4	Silt loam	SM, ML, GM	A-2, A-4	0-2	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	SM, ML, GM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---
TwC:												
Tunbridge, rolling--------	0-3	Silt loam	GM, ML, SM	A-2, A-4	0-2	0-20	65-100	50-92	40-90	30-80	0-20	NP-2
	3-19	Silt loam, gravelly fine sandy loam, sandy loam	SM, ML	A-2, A-5	0-5	0-20	65-100	50-92	40-90	30-80	0-50	NP-6
	19-30	Gravelly very fine sandy loam, silt loam, sandy loam	ML, SM	A-2, A-4	0-5	0-20	60-98	50-92	30-90	20-80	0-20	NP-2
	30-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Lyman, rolling--	0-4	Silt loam	GM, ML, SM	A-2, A-4	0-2	0-15	85-95	75-92	55-92	25-75	0-30	NP-6
	4-14	Silt loam, channery fine sandy loam, loam	ML, SM, GM	A-1, A-2, A-4	0-5	0-15	70-95	50-92	35-85	20-80	0-30	NP-4
	14-24	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
TwC:												
Dawson----------	0-5	Peat	PT	A-8	0	0	---	---	---	---	---	---
	5-30	Muck	PT	A-8	0	0	---	---	---	---	---	---
	30-72	Loamy sand, gravelly sand, very gravelly very fine sand	SP, SM, SC, GP	A-1, A-2, A-3, A-4	0	0	45-100	35-100	15-90	0-45	0-20	NP-10
Ua:												
Udipsamments, smoothed-------	0-6	Fine sand	SP, SM	A-1	0	0	92-100	85-100	40-80	0-35	---	---
	6-72	Sand, fine sand, loamy sand	SP, SM	A-1	0	0	85-100	85-100	40-80	0-35	---	---
Ue:												
Udorthents, loamy----------	0-4	Loam	CL, SC, SM, ML	A-2, A-4, A-6	0	0-5	80-100	75-100	55-100	30-95	0-45	NP-15
	4-72	Very gravelly sandy loam, channery loam, silty clay loam	GM, ML, SC, CL	A-1, A-2, A-4, A-6	0	0-10	60-100	50-100	20-100	10-95	0-45	NP-15
Uf:												
Udorthents, clayey---------	0-6	Silty clay loam	CH, CL, MH, ML	A-6, A-7	0	0	92-100	92-100	90-100	70-95	30-55	10-25
	6-72	Silty clay, clay, silty clay loam, silt loam	CH, CL	A-6, A-7	0	0	92-100	85-100	75-100	50-95	30-55	15-30
Ug:												
Udorthents, mine waste, acid-----------	0-4	Gravelly loam	CL, ML, SC, SM, GM	A-2, A-4, A-6	0-7	0-5	55-100	40-100	20-100	10-95	0-45	NP-15
	4-72	Very gravelly sandy loam, channery loam, silty clay loam	SC, GM, CL, ML	A-1, A-2, A-4, A-6	0-7	0-15	55-100	40-100	20-100	10-95	0-45	NP-15

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Uh:												
Udorthents, mine waste, nonacid--------	0-4	Gravelly loam	SM, GM, ML, SC, CL	A-2, A-4, A-6	0-7	0-5	55-100	40-100	20-100	10-95	0-45	NP-15
	4-72	Very gravelly sandy loam, channery loam, silty clay loam	ML, SC, GM, CL	A-1, A-2, A-4, A-6	0-7	0-15	55-100	40-100	20-100	10-95	0-45	NP-15
Un:												
Udorthents, refuse substratum-----	0-6	Loam	SM, ML, SC, CL	A-2, A-4	0	0-4	80-100	75-100	30-100	10-90	0-30	NP-15
	6-72	Variable			---	---	---	---	---	---	---	---
Ur:												
Urban land------	0-6	Variable			---	---	---	---	---	---	---	---
W:												
Water.												

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
WaA:												
Waddington------	0-8	Gravelly sandy loam	CL-ML, GM, SC-SM, SM	A-1, A-2-4, A-4	0	0-25	50-90	45-80	45-80	15-65	17-30	NP-10
	8-12	Gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	SP-SM, SM, CL-ML, CL	A-1, A-2-4, A-4	0	0-25	50-90	40-80	25-75	10-55	10-30	NP-10
	12-19	Very gravelly sandy loam, very gravelly loamy sand, very gravelly sand	GP-GM, GM, SM, GW-GM	A-1, A-2-4	0	5-25	50-85	40-85	20-50	5-30	0-10	NP-4
	19-72	Very gravelly loamy sand, extremely gravelly sandy loam, stratified extremely gravelly coarse sand	GM, GW-GM	A-1	0	4-30	45-75	25-45	15-30	0-15	0-10	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
WaB:												
Waddington------	0-8	Gravelly sandy loam	CL-ML, GM, SC-SM, SM	A-1, A-2-4, A-4	---	0-25	50-90	45-80	45-80	15-65	17-30	NP-10
	8-12	Gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	SP-SM, CL, CL-ML, SM	A-1, A-2-4, A-4	---	0-25	50-90	40-80	25-75	10-55	10-30	NP-10
	12-19	Very gravelly sandy loam, very gravelly loamy sand, very gravelly sand	GW-GM, GM, GP-GM, SM	A-1, A-2-4	---	5-25	50-85	40-85	20-50	5-30	0-10	NP-4
	19-72	Very gravelly loamy sand, extremely gravelly sandy loam, stratified extremely gravelly coarse sand	GW-GM, GM	A-1	---	4-30	45-75	25-45	15-30	0-15	0-10	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
WaC: Waddington, rolling--------	0-8	Gravelly sandy loam	SC-SM, CL-ML, GM, SM	A-1, A-2-4, A-4	---	0-25	50-90	45-80	45-80	15-65	17-30	NP-10
	8-12	Gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	SP-SM, SM, CL-ML, CL	A-1, A-2-4, A-4	---	0-25	50-90	40-80	25-75	10-55	10-30	NP-10
	12-19	Very gravelly sandy loam, very gravelly loamy sand, very gravelly sand	GP-GM, GW-GM, SM, GM	A-1, A-2-4	---	5-25	50-85	40-85	20-50	5-30	0-10	NP-4
	19-72	Very gravelly loamy sand, extremely gravelly sandy loam, stratified extremely gravelly coarse sand	GW-GM, GM	A-1	---	4-30	45-75	25-45	15-30	0-15	0-10	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
WaD:												
Waddington------	0-8	Gravelly sandy loam	GM, SC-SM, SM, CL-ML	A-1, A-2-4, A-4	---	0-25	50-90	45-80	45-80	15-65	17-30	NP-10
	8-12	Gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	CL-ML, CL, SM, SP-SM	A-1, A-2-4, A-4	---	0-25	50-90	40-80	25-75	10-55	10-30	NP-10
	12-19	Very gravelly sandy loam, very gravelly loamy sand, very gravelly sand	GM, GP-GM, GW-GM, SM	A-1, A-2-4	---	5-25	50-85	40-85	20-50	5-30	0-10	NP-4
	19-72	Very gravelly loamy sand, extremely gravelly sandy loam, stratified extremely gravelly coarse sand	GM, GW-GM	A-1	---	4-30	45-75	25-45	15-30	0-15	0-10	NP-4

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
WdB:												
Waddington, very cobbly sandy loam-----	0-8	Very cobbly sandy loam	SM, SC-SM, GM, CL-ML	A-1, A-2-4, A-4	0-4	8-30	50-90	45-80	45-80	15-65	17-30	NP-10
	8-12	Gravelly loam, gravelly fine sandy loam, very gravelly sandy loam	CL-ML, SP-SM, CL, SM	A-1, A-2-4, A-4	0-1	0-25	50-90	40-80	25-75	10-55	10-30	NP-10
	12-19	Very gravelly sandy loam, very gravelly loamy sand, very gravelly sand	SM, GW-GM, GP-GM, GM	A-1, A-2-4	0-1	5-25	50-85	40-85	20-50	5-30	0-10	NP-4
	19-72	Very gravelly loamy sand, extremely gravelly sandy loam, stratified extremely gravelly coarse sand	GW-GM, GM	A-1	0-1	4-30	45-75	25-45	15-30	0-15	0-10	NP-4
Wg:												
Wegatchie-------	0-8	Silt loam	MH, ML	A-4, A-5, A-7	0	0	96-100	96-100	85-100	55-90	35-55	5-15
	8-40	Clay loam, silty clay loam, silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	96-100	96-100	80-100	50-95	20-40	5-15
	40-72	Silt loam, silty clay loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	85-100	85-100	70-100	50-95	20-35	5-12

Table 16.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
021:												
Dawson--------------	0-5	0-0	0.20-0.35	0.6-6	0.45-0.55	---	65-85	---	---	2	5	56
	5-30	0-0	0.15-0.40	0.2-6	0.35-0.45	---	65-85	---	---			
	30-72	0-10	1.55-1.75	6-20	0.03-0.10	0.0-2.9	0.0-0.5	0.10	0.15			
Fluvaquents---------	0-10	3-35	0.90-1.20	0.06-20	0.15-0.25	0.0-2.9	4.0-20	0.32	0.32	3	6	48
	10-72	2-35	1.20-1.60	0.06-20	0.03-0.16	0.0-2.9	0.0-1.0	0.28	0.32			
Loxley--------------	0-3	0-0	0.30-0.40	0.6-6	0.45-0.55	---	70-90	---	---	3	5	56
	3-72	0-0	0.10-0.35	0.2-6	0.35-0.45	---	70-90	---	---			
023:												
Loxley--------------	0-3	0-0	0.30-0.40	0.6-6	0.45-0.55	---	70-90	---	---	3	5	56
	3-72	0-0	0.10-0.35	0.2-6	0.35-0.45	---	70-90	---	---			
Dawson--------------	0-5	0-0	0.20-0.35	0.6-6	0.45-0.55	---	65-85	---	---	2	5	56
	5-30	0-0	0.15-0.40	0.2-6	0.35-0.45	---	65-85	---	---			
	30-72	0-10	1.55-1.75	6-20	0.03-0.10	0.0-2.9	0.0-0.5	0.10	0.15			
363A:												
Adams---------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
363B:												
Adams---------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
363D:												
Adams---------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
365:												
Naumburg------------	0-5	---	0.10-0.40	0.2-6	0.20-0.50	---	35-80	---	---	5	2	134
	5-19	1-5	1.20-1.50	2-6	0.05-0.09	0.0-2.9	3.0-7.0	0.17	0.17			
	19-41	1-5	1.20-1.50	6-20	0.06-0.08	0.0-2.9	---	0.17	0.17			
	41-72	1-5	1.45-1.65	6-20	0.04-0.06	0.0-2.9	---	0.17	0.17			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
365:												
Croghan-------------	0-10	0-5	1.10-1.50	6-20	0.05-0.09	0.0-2.9	2.0-6.0	0.17	0.17	5	2	134
	10-44	0-5	1.20-1.50	20-101	0.03-0.07	0.0-2.9	---	0.17	0.17			
	44-72	0-5	1.20-1.50	20-101	0.03-0.06	0.0-2.9	---	0.17	0.17			
376A:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			
Adams---------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-20	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
376C:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			
Adams---------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-20	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
376D:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
376D:												
Adams---------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-20	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
380B:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			
Dawson--------------	0-5	0-0	0.20-0.35	0.6-6	0.45-0.55	---	65-85	---	---	2	5	56
	5-30	0-0	0.15-0.40	0.2-6	0.35-0.45	---	65-85	---	---			
	30-72	0-10	1.55-1.75	6-20	0.03-0.10	0.0-2.9	0.0-0.5	0.10	0.15			
380D:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			
Dawson--------------	0-5	0-0	0.20-0.35	0.6-6	0.45-0.55	---	65-85	---	---	2	5	56
	5-30	0-0	0.15-0.40	0.2-6	0.35-0.45	---	65-85	---	---			
	30-72	0-10	1.55-1.75	6-20	0.03-0.10	0.0-2.9	0.0-0.5	0.10	0.15			
643C:												
Berkshire, very bouldery-----------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	2-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
643D:												
Berkshire, very bouldery-----------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	2-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
644C:												
Berkshire, rolling, very bouldery------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	2-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
Lyme, very bouldery-	0-3	2-18	1.35-1.60	0.6-6	0.05-0.20	0.0-2.9	2.0-10	0.32	0.28	5	3	86
	3-16	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	0.24	0.28			
	16-72	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	---	---			
644D:												
Berkshire, hilly, very bouldery------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	2-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
Lyme, very bouldery-	0-3	2-18	1.35-1.60	0.6-6	0.05-0.20	0.0-2.9	2.0-10	0.32	0.28	5	3	86
	3-16	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	0.24	0.28			
	16-72	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	---	---			
709B:												
Adirondack, very bouldery-----------	0-2	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	2-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-8	2-20	1.00-1.30	0.6-2	0.15-0.21	0.0-2.9	4.0-18	0.43	0.49			
	8-22	2-18	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	0.0-1.0	0.28	0.37			
	22-72	2-16	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	0.0-1.0	0.24	0.32			
Tughill, very bouldery-----------	0-4	---	0.10-0.40	0.6-6	0.50-0.65	---	35-80	---	---	3	8	0
	4-8	2-18	1.10-1.40	0.6-2	0.08-0.13	0.0-2.9	5.0-20	0.20	0.28			
	8-40	2-18	1.20-1.50	0.2-0.6	0.06-0.08	0.0-2.9	1.0-3.0	0.20	0.28			
	40-72	2-18	1.70-1.95	0.06-0.2	0.05-0.07	0.0-2.9	0.0-2.0	0.20	0.28			
Lyme, very bouldery-	0-3	2-18	1.35-1.60	0.6-6	0.05-0.20	0.0-2.9	2.0-10	0.32	0.28	5	3	86
	3-16	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	0.24	0.28			
	16-72	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	---	---			
741C:												
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
741C:												
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
Crary, very bouldery-----------	0-8	7-22	1.10-1.40	0.6-2	0.13-0.21	0.0-2.9	2.0-8.0	0.49	0.49	3	8	0
	8-24	7-22	1.20-1.50	0.6-2	0.11-0.20	0.0-2.9	0.0-1.0	0.64	0.64			
	24-36	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.5	0.24	0.28			
	36-72	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	0.24	0.28			
741D:												
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
743C:												
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
743D:												
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
745C:												
Crary, very bouldery-----------	0-8	7-22	1.10-1.40	0.6-2	0.13-0.21	0.0-2.9	2.0-8.0	0.49	0.49	3	8	0
	8-24	7-22	1.20-1.50	0.6-2	0.11-0.20	0.0-2.9	0.0-1.0	0.64	0.64			
	24-36	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.5	0.24	0.28			
	36-72	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	0.24	0.28			
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
747B:												
Crary, very bouldery-----------	0-8	7-22	1.10-1.40	0.6-2	0.13-0.21	0.0-2.9	2.0-8.0	0.49	0.49	3	8	0
	8-24	7-22	1.20-1.50	0.6-2	0.11-0.20	0.0-2.9	0.0-1.0	0.64	0.64			
	24-36	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.5	0.24	0.28			
	36-72	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	0.24	0.28			
Adirondack, very bouldery-----------	0-2	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	2-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-8	2-20	1.00-1.30	0.6-2	0.15-0.21	0.0-2.9	4.0-18	0.43	0.49			
	8-22	2-18	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	0.0-1.0	0.28	0.37			
	22-72	2-16	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	0.0-1.0	0.24	0.32			
807:												
Udorthents, mine waste--------------	0-4	4-27	1.20-1.80	0.0015-20	0.06-0.15	0.0-2.9	0.0-5.0	0.37	0.37	-	---	---
	4-72	4-35	1.30-1.90	0.0015-20	0.04-0.13	0.0-2.9	---	0.32	0.37			
831C:												
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
831D:												
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
831F:												
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
833C:												
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
Adirondack, very bouldery-----------	0-2	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	2-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-8	2-20	1.00-1.30	0.6-2	0.15-0.21	0.0-2.9	4.0-18	0.43	0.49			
	8-22	2-18	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	0.0-1.0	0.28	0.37			
	22-72	2-16	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	0.0-1.0	0.24	0.32			
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
835C:												
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
Borosaprists--------	0-30	0-0	0.10-0.40	0.2-6	0.35-0.60	0.0-2.9	50-100	---	---	-	---	---
	30-72	3-27	1.55-1.95	0.2-20	0.11-0.18	0.0-2.9	0.0-0.5	0.28	0.37			
Ricker, very bouldery-----------	0-1	---	0.10-0.35	2-6	0.20-0.50	0.0-2.9	35-80	---	---	1	7	38
	1-3	---	0.10-0.40	2-6	0.45-0.65	0.0-2.9	35-80	---	---			
	3-4	1-18	1.35-1.80	0.6-6	0.06-0.18	0.0-2.9	---	0.49	0.55			
	4-14	---	---	0.00-0.0015	---	---	---	---	---			
861C:												
Lyman---------------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
Ricker, very bouldery-----------	0-1	---	0.10-0.35	2-6	0.20-0.50	0.0-2.9	35-80	---	---	1	7	38
	1-3	---	0.10-0.40	2-6	0.45-0.65	0.0-2.9	35-80	---	---			
	3-4	1-18	1.35-1.80	0.6-6	0.06-0.18	0.0-2.9	---	0.49	0.55			
	4-14	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop, very bouldery-----------	0-8	---	---	0.00-0.0015	---	---	---	---	---	-	8	0
861D:												
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
Ricker, very bouldery-----------	0-1	---	0.10-0.35	2-6	0.20-0.50	0.0-2.9	35-80	---	---	1	7	38
	1-3	---	0.10-0.40	2-6	0.45-0.65	0.0-2.9	35-80	---	---			
	3-4	1-18	1.35-1.80	0.6-6	0.06-0.18	0.0-2.9	---	0.49	0.55			
	4-14	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop--------	0-8	---	---	0.00-0.0015	---	---	---	---	---	-	8	0

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
861F:												
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
Ricker, very bouldery-----------	0-1	---	0.10-0.35	2-6	0.20-0.50	0.0-2.9	35-80	---	---	1	7	38
	1-3	---	0.10-0.40	2-6	0.45-0.65	0.0-2.9	35-80	---	---			
	3-4	1-18	1.35-1.80	0.6-6	0.06-0.18	0.0-2.9	---	0.49	0.55			
	4-14	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop--------	0-8	---	---	0.00-0.0015	---	---	---	---	---	-	8	0
891F:												
Rock outcrop--------	0-8	---	---	0.00-0.0015	---	---	---	---	---	-	8	0
Ricker, very bouldery-----------	0-1	---	0.10-0.35	2-6	0.20-0.50	0.0-2.9	35-80	---	---	1	7	38
	1-3	---	0.10-0.40	2-6	0.45-0.65	0.0-2.9	35-80	---	---			
	3-4	1-18	1.35-1.80	0.6-6	0.06-0.18	0.0-2.9	---	0.49	0.55			
	4-14	---	---	0.00-0.0015	---	---	---	---	---			
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
AaB:												
Adams, sand---------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
AaC:												
Adams, sand---------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
AaD:												
Adams, sand---------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	1	310
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
AdB:												
Adams, loamy fine sand----------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	2	134
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
AdC:												
Adams, loamy fine sand----------------	0-7	0-5	1.00-1.30	6-20	0.03-0.06	0.0-2.9	2.0-5.0	0.17	0.17	5	2	134
	7-8	0-5	1.00-1.30	6-20	0.08-0.16	0.0-2.9	1.0-3.0	0.17	0.17			
	8-20	0-5	1.10-1.45	6-20	0.03-0.10	0.0-2.9	1.0-3.0	0.17	0.17			
	20-72	0-5	1.20-1.50	20-101	0.03-0.04	0.0-2.9	0.0-0.5	0.17	0.17			
Ak:												
Adjidaumo, silty clay----------------	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	4.0-12	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
Am:												
Adjidaumo, mucky silty clay---------	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	6.0-15	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
Ao:												
Adjidaumo, flooded--	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	4.0-12	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
Ap:												
Adjidaumo, silty clay, rocky--------	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	4.0-12	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
ArC:												
Adjidaumo-----------	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	4.0-12	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
Summerville---------	0-6	4-20	1.30-1.60	2-6	0.08-0.18	0.0-2.9	2.0-6.0	0.24	0.24	1	3	86
	6-12	4-25	1.35-1.65	0.6-2	0.10-0.16	0.0-2.9	0.0-0.5	0.24	0.24			
	12-22	---	---	0.00-20	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
BeB:												
Berkshire-----------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	3	86
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	1-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
BgC:												
Berkshire, very bouldery-----------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	1-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
Lyme, very bouldery-	0-3	2-18	1.35-1.60	0.6-6	0.05-0.20	0.0-2.9	2.0-10	0.32	0.28	5	3	86
	3-16	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	0.24	0.28			
	16-72	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	---	---			
BkC:												
Berkshire, very bouldery-----------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	1-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
Sunapee, very bouldery-----------	0-1	---	0.10-0.40	0.1-6	0.20-0.50	---	35-80	---	---	5	3	86
	1-4	2-20	0.80-1.20	0.6-2	0.10-0.20	0.0-2.9	2.0-8.0	0.20	0.28			
	4-23	2-20	0.80-1.30	0.6-2	0.07-0.17	0.0-2.9	---	0.20	0.24			
	23-72	2-20	1.20-1.50	0.6-6	0.03-0.17	0.0-2.9	---	0.20	0.24			
Bo:												
Borosaprists--------	0-30	0-0	0.10-0.40	0.2-6	0.35-0.60	0.0-2.9	50-100	---	---	-	---	---
	30-72	3-35	1.55-1.95	0.2-20	0.11-0.18	0.0-2.9	0.0-0.5	0.28	0.37			
Fluvaquents---------	0-10	3-35	0.90-1.20	0.06-20	0.15-0.25	0.0-2.9	4.0-20	0.32	0.32	3	6	48
	10-72	2-35	1.20-1.60	0.06-20	0.03-0.16	0.0-2.9	0.0-1.0	0.28	0.32			
Ce:												
Carbondale, undrained----------	0-12	0-0	0.30-0.40	0.2-6	0.35-0.45	---	50-70	---	---	3	2	134
	12-40	0-0	0.13-0.23	0.2-6	0.35-0.45	---	50-70	---	---			
	40-99	0-0	0.10-0.17	0.2-6	0.45-0.55	---	50-70	---	---			
CgB:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
CgB:												
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			
CgC:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			
CgD:												
Colton--------------	0-6	1-5	1.10-1.40	6-20	0.03-0.07	0.0-2.9	2.0-6.0	0.15	0.17	5	2	134
	6-20	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	0.0-0.5	0.15	0.17			
	20-72	0-3	1.45-1.65	20-101	0.01-0.02	0.0-2.9	---	0.10	0.17			
Duxbury-------------	0-7	5-27	1.20-1.35	2-6	0.22-0.24	0.0-2.9	2.0-8.0	0.37	0.37	3	5	56
	7-14	5-27	0.80-1.20	2-6	0.16-0.24	0.0-2.9	2.0-5.0	0.49	0.49			
	14-24	5-27	1.00-1.40	2-6	0.16-0.22	0.0-2.9	1.0-2.0	0.28	0.28			
	24-72	0-2	1.40-1.70	6-20	0.01-0.06	0.0-2.9	0.5-1.0	0.17	0.24			
Ck:												
Cook----------------	0-7	4-10	1.10-1.40	2-6	0.11-0.13	0.0-2.9	4.0-20	0.17	0.17	3	2	134
	7-39	3-10	1.25-1.55	6-20	0.03-0.07	0.0-2.9	---	0.17	0.20			
	39-72	4-20	1.70-1.80	0.2-0.6	0.08-0.09	0.0-2.9	---	0.24	0.28			
Cn:												
Cornish-------------	0-8	7-27	0.95-1.35	0.6-2	0.20-0.45	0.0-2.9	2.0-8.0	0.32	0.32	5	3	86
	8-21	7-27	0.95-1.45	0.6-2	0.20-0.45	0.0-2.9	0.5-2.0	0.49	0.49			
	21-46	7-27	1.10-1.50	0.6-2	0.18-0.45	0.0-2.9	0.0-1.0	0.49	0.49			
	46-72	3-25	1.10-1.50	0.6-2	0.20-0.45	0.0-2.9	0.0-1.0	0.49	0.49			
Cp:												
Coveytown-----------	0-1	---	0.10-0.35	0.1-6	0.20-0.50	---	35-80	---	---	5	2	134
	1-5	4-10	1.10-1.40	2-20	0.04-0.08	0.0-2.9	2.0-8.0	0.20	0.20			
	5-38	2-10	1.25-1.55	2-20	0.02-0.07	0.0-2.9	0.5-2.0	0.17	0.20			
	38-72	4-20	1.50-1.80	0.2-2	0.08-0.11	0.0-2.9	0.0-0.5	0.24	0.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Cr:												
Coveytown, very stony--------------	0-1	---	0.10-0.35	0.1-6	0.20-0.50	---	35-80	---	---	5	8	0
	1-5	4-10	1.10-1.40	2-20	0.04-0.08	0.0-2.9	2.0-8.0	0.20	0.20			
	5-38	2-10	1.25-1.55	2-20	0.02-0.07	0.0-2.9	0.5-2.0	0.17	0.20			
	38-72	4-20	1.50-1.80	0.2-2	0.08-0.11	0.0-2.9	0.0-0.5	0.24	0.28			
Cook, very stony----	0-7	4-10	1.10-1.40	2-6	0.11-0.13	0.0-2.9	4.0-20	0.17	0.17	3	8	0
	7-39	3-10	1.25-1.55	6-20	0.03-0.07	0.0-2.9	---	0.17	0.20			
	39-72	4-20	1.70-1.80	0.2-0.6	0.08-0.09	0.0-2.9	---	0.24	0.28			
CsB:												
Crary---------------	0-8	7-22	1.10-1.40	0.6-2	0.13-0.21	0.0-2.9	2.0-8.0	0.49	0.49	3	5	56
	8-24	7-22	1.20-1.50	0.6-2	0.11-0.20	0.0-2.9	0.0-1.0	0.64	0.64			
	24-36	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.5	0.24	0.28			
	36-72	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	0.24	0.28			
CtB:												
Crary, very Bouldery-----------	0-8	7-22	1.10-1.40	0.6-2	0.13-0.21	0.0-2.9	2.0-8.0	0.49	0.49	3	8	0
	8-24	7-22	1.20-1.50	0.6-2	0.11-0.20	0.0-2.9	0.0-1.0	0.64	0.64			
	24-36	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.5	0.24	0.28			
	36-72	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	0.24	0.28			
Potsdam, very bouldery-----------	0-3	---	---	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	---	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
CuB:												
Croghan, sand-------	0-10	0-5	1.10-1.50	6-20	0.05-0.09	0.0-2.9	2.0-6.0	0.17	0.17	5	2	134
	10-44	0-5	1.20-1.50	20-101	0.03-0.07	0.0-2.9	---	0.17	0.17			
	44-72	0-5	1.20-1.50	20-101	0.03-0.06	0.0-2.9	---	0.17	0.17			
CvA:												
Croghan, loamy fine sand---------------	0-10	0-5	1.10-1.50	6-20	0.05-0.09	0.0-2.9	2.0-6.0	0.17	0.17	5	2	134
	10-44	0-5	1.20-1.50	20-101	0.03-0.07	0.0-2.9	---	0.17	0.17			
	44-72	0-5	1.20-1.50	20-101	0.03-0.06	0.0-2.9	---	0.17	0.17			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
CvB:												
Croghan, loamy fine sand---------------	0-10	0-5	1.10-1.50	6-20	0.05-0.09	0.0-2.9	2.0-6.0	0.17	0.17	5	2	134
	10-44	0-5	1.20-1.50	20-101	0.03-0.07	0.0-2.9	---	0.17	0.17			
	44-72	0-5	1.20-1.50	20-101	0.03-0.06	0.0-2.9	---	0.17	0.17			
Da:												
Dawson--------------	0-5	0-0	0.20-0.35	0.6-6	0.45-0.55	---	65-85	---	---	2	7	38
	5-30	0-0	0.15-0.40	0.2-6	0.35-0.45	---	65-85	---	---			
	30-72	0-10	1.55-1.75	6-20	0.03-0.10	0.0-2.9	0.0-0.5	0.10	0.15			
DAM:												
Large dams.												
Dd:												
Deford, loamy fine sand---------------	0-8	0-10	1.35-1.40	6-20	0.04-0.06	0.0-2.9	4.0-10	0.15	0.15	5	1	220
	8-24	0-10	1.35-1.40	6-20	0.04-0.06	0.0-2.9	0.0-1.0	0.15	0.15			
	24-72	0-12	1.40-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	0.17	0.17			
Df:												
Deford, mucky loamy fine sand----------	0-8	0-10	1.35-1.40	6-20	0.04-0.06	0.0-2.9	6.0-15	0.15	0.15	5	1	220
	8-24	0-10	1.35-1.40	6-20	0.04-0.06	0.0-2.9	0.0-1.0	0.15	0.15			
	24-72	0-12	1.40-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	0.17	0.17			
DpA:												
Depeyster-----------	0-10	15-27	1.20-1.50	0.6-2	0.14-0.21	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	10-27	18-35	1.20-1.50	0.06-0.6	0.16-0.20	0.0-2.9	---	0.49	0.49			
	27-72	4-35	1.40-1.70	0.06-0.6	0.12-0.20	0.0-2.9	---	0.64	0.64			
DpB:												
Depeyster-----------	0-10	15-27	1.20-1.50	0.6-2	0.14-0.21	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	10-27	18-35	1.20-1.50	0.06-0.6	0.16-0.20	0.0-2.9	---	0.49	0.49			
	27-72	4-35	1.40-1.70	0.06-0.6	0.12-0.20	0.0-2.9	---	0.64	0.64			
DpC:												
Depeyster-----------	0-10	15-27	1.20-1.50	0.6-2	0.14-0.21	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	10-27	18-35	1.20-1.50	0.06-0.6	0.16-0.20	0.0-2.9	---	0.49	0.49			
	27-72	4-35	1.40-1.70	0.06-0.6	0.12-0.20	0.0-2.9	---	0.64	0.64			
Dr:												
Dorval--------------	0-31	0-0	0.13-0.42	0.6-6	0.20-0.25	---	50-95	---	---	2	2	134
	31-72	35-60	1.40-1.65	0.0015-0.06	0.10-0.20	6.0-8.9	0.0-8.0	0.28	0.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Du:												
Dune land-----------	0-6	0-1	1.50-1.60	6-101	0.03-0.04	0.0-2.9	0.0-0.1	0.10	0.20	5	1	220
	6-72	0-1	1.50-1.60	6-101	0.03-0.05	0.0-2.9	0.0-0.1	0.10	0.20			
EeB:												
Eelweir-------------	0-10	4-18	1.00-1.25	0.6-6	0.13-0.19	0.0-2.9	3.0-6.0	0.24	0.24	5	3	86
	10-29	4-18	1.20-1.50	0.6-6	0.12-0.22	0.0-2.9	---	0.32	0.32			
	29-35	3-18	1.20-1.50	0.6-6	0.11-0.22	0.0-2.9	---	0.32	0.32			
	35-72	0-16	1.25-1.60	2-20	0.05-0.11	0.0-2.9	---	0.17	0.17			
EmA:												
Elmwood-------------	0-6	4-20	1.00-1.30	2-6	0.13-0.20	0.0-2.9	2.0-6.0	0.28	0.28	5	3	86
	6-25	4-20	1.15-1.45	2-6	0.13-0.22	0.0-2.9	0.0-0.5	0.32	0.32			
	25-72	35-60	1.35-1.70	0.0015-0.2	0.12-0.18	3.0-5.9	0.0-0.2	0.49	0.49			
EmB:												
Elmwood-------------	0-6	4-20	1.00-1.30	2-6	0.13-0.20	0.0-2.9	2.0-6.0	0.28	0.28	5	3	86
	6-25	4-20	1.15-1.45	2-6	0.13-0.22	0.0-2.9	0.0-0.5	0.32	0.32			
	25-72	35-60	1.35-1.70	0.0015-0.2	0.12-0.18	3.0-5.9	0.0-0.2	0.49	0.49			
Fa:												
Fahey---------------	0-7	1-5	1.10-1.40	6-20	0.07-0.13	0.0-2.9	2.0-6.0	0.17	0.17	5	2	134
	7-31	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	---	0.17	0.24			
	31-72	0-3	1.45-1.65	6-20	0.01-0.03	0.0-2.9	---	0.17	0.24			
FkA:												
Flackville----------	0-9	1-10	1.10-1.50	6-20	0.08-0.09	0.0-2.9	2.0-6.0	0.17	0.17	5	1	310
	9-29	0-10	1.20-1.60	6-20	0.05-0.07	0.0-2.9	0.0-1.0	0.17	0.17			
	29-72	30-50	1.15-1.40	0.0015-0.2	0.12-0.17	3.0-5.9	0.0-0.2	0.28	0.28			
FkB:												
Flackville----------	0-9	1-10	1.10-1.50	6-20	0.08-0.09	0.0-2.9	2.0-6.0	0.17	0.17	5	1	310
	9-29	0-10	1.20-1.60	6-20	0.05-0.07	0.0-2.9	0.0-1.0	0.17	0.17			
	29-72	30-50	1.15-1.40	0.0015-0.2	0.12-0.17	3.0-5.9	0.0-0.2	0.28	0.28			
Fu:												
Fluvaquents, frequently flooded-	0-10	4-35	0.90-1.20	0.06-20	0.15-0.25	0.0-2.9	4.0-20	0.32	0.32	3	6	48
	10-72	2-35	1.20-1.60	0.06-20	0.03-0.16	0.0-2.9	0.0-1.0	0.28	0.32			
Udifluvents, frequently flooded-	0-4	3-27	1.10-1.50	0.06-20	0.04-0.17	0.0-2.9	0.0-6.0	0.32	0.32	3	5	56
	4-72	0-27	1.20-1.70	0.06-20	0.03-0.16	0.0-2.9	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
GrB:												
Grenville-----------	0-5	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.32	0.32	3	5	56
	5-37	4-20	1.25-1.50	0.6-2	0.08-0.15	0.0-2.9	---	0.24	0.28			
	37-72	4-20	1.60-1.85	0.2-0.6	0.08-0.14	0.0-2.9	---	0.24	0.28			
GrC:												
Grenville-----------	0-5	7-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.32	0.32	3	5	56
	5-37	7-20	1.25-1.50	0.6-2	0.08-0.15	0.0-2.9	---	0.24	0.28			
	37-72	7-20	1.60-1.85	0.2-0.6	0.08-0.14	0.0-2.9	---	0.24	0.28			
GsD:												
Grenville, very stony--------------	0-5	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.32	0.32	3	8	0
	5-37	4-20	1.25-1.50	0.6-2	0.08-0.15	0.0-2.9	---	0.24	0.28			
	37-72	4-20	1.60-1.85	0.2-0.6	0.08-0.14	0.0-2.9	---	0.24	0.28			
Gu:												
Guff----------------	0-9	27-40	1.00-1.25	0.0015-0.2	0.14-0.18	3.0-5.9	4.0-10	0.37	0.37	2	4	86
	9-39	27-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
	39-49	---	---	0.00-20	---	---	---	---	---			
HaA:												
Hailesboro----------	0-7	10-27	1.20-1.50	0.6-2	0.22-0.25	0.0-2.9	3.0-8.0	0.49	0.49	5	5	56
	7-24	18-35	1.20-1.50	0.2-0.6	0.22-0.25	0.0-2.9	---	0.49	0.49			
	24-44	18-35	1.20-1.50	0.2-0.6	0.22-0.25	0.0-2.9	---	0.49	0.49			
	44-72	5-35	1.20-1.50	0.2-0.6	0.12-0.20	0.0-2.9	---	0.64	0.64			
HaB:												
Hailesboro----------	0-7	10-27	1.20-1.50	0.6-2	0.22-0.25	0.0-2.9	3.0-8.0	0.49	0.49	5	5	56
	7-24	18-35	1.20-1.50	0.2-0.6	0.22-0.25	0.0-2.9	---	0.49	0.49			
	24-44	18-35	1.20-1.50	0.2-0.6	0.22-0.25	0.0-2.9	---	0.49	0.49			
	44-72	5-35	1.20-1.50	0.2-0.6	0.12-0.20	0.0-2.9	---	0.64	0.64			
Hc:												
Hannawa-------------	0-8	4-27	1.10-1.30	0.6-6	0.15-0.23	0.0-2.9	5.0-10	0.24	0.24	1	5	56
	8-19	4-27	1.20-1.50	0.6-6	0.10-0.20	0.0-2.9	---	0.24	0.24			
	19-27	---	---	0.00-20	---	---	---	---	---			
HeB:												
Heuvelton-----------	0-7	27-40	1.00-1.25	0.2-2	0.16-0.21	3.0-5.9	3.0-6.0	0.37	0.37	5	6	48
	7-11	35-60	1.15-1.40	0.2-2	0.13-0.17	3.0-5.9	---	0.28	0.28			
	11-22	35-60	1.15-1.40	0.2-2	0.13-0.17	3.0-5.9	---	0.28	0.28			
	22-72	35-60	1.15-1.65	0.0015-0.2	0.13-0.17	3.0-5.9	---	0.28	0.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
HeC:												
Heuvelton, rolling--	0-7	27-40	1.00-1.25	0.2-2	0.16-0.21	3.0-5.9	3.0-6.0	0.37	0.37	5	6	48
	7-11	35-60	1.15-1.40	0.2-2	0.13-0.17	3.0-5.9	---	0.28	0.28			
	11-22	35-60	1.15-1.40	0.2-2	0.13-0.17	3.0-5.9	---	0.28	0.28			
	22-72	35-60	1.15-1.65	0.0015-0.2	0.13-0.17	3.0-5.9	---	0.28	0.28			
HkE:												
Heuvelton-----------	0-7	27-40	1.00-1.25	0.2-2	0.16-0.21	3.0-5.9	3.0-6.0	0.37	0.37	5	6	48
	7-11	35-60	1.15-1.40	0.2-2	0.13-0.17	3.0-5.9	---	0.28	0.28			
	11-22	35-60	1.15-1.40	0.2-2	0.13-0.17	3.0-5.9	---	0.28	0.28			
	22-72	35-60	1.15-1.65	0.0015-0.2	0.13-0.17	3.0-5.9	---	0.28	0.28			
Depeyster-----------	0-10	15-27	1.20-1.50	0.6-2	0.14-0.21	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	10-27	18-35	1.20-1.50	0.06-0.6	0.16-0.20	0.0-2.9	---	0.49	0.49			
	27-72	4-35	1.40-1.70	0.06-0.6	0.12-0.20	0.0-2.9	---	0.64	0.64			
HnA:												
Hogansburg----------	0-10	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	3.0-6.0	0.32	0.32	3	5	56
	10-25	4-20	1.25-1.50	0.6-2	0.08-0.15	0.0-2.9	---	0.24	0.28			
	25-72	4-20	1.70-1.95	0.2-0.6	0.08-0.13	0.0-2.9	---	0.24	0.28			
HnB:												
Hogansburg----------	0-10	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	3.0-6.0	0.32	0.32	3	5	56
	10-25	4-20	1.25-1.50	0.6-2	0.08-0.15	0.0-2.9	---	0.24	0.28			
	25-72	4-20	1.70-1.95	0.2-0.6	0.08-0.13	0.0-2.9	---	0.24	0.28			
HrB:												
Hogansburg, very stony--------------	0-10	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	3.0-6.0	0.32	0.32	3	8	0
	10-25	4-20	1.25-1.50	0.6-2	0.08-0.15	0.0-2.9	---	0.24	0.28			
	25-72	4-20	1.70-1.95	0.2-0.6	0.08-0.13	0.0-2.9	---	0.24	0.28			
Grenville, very stony--------------	0-5	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.32	0.32	3	8	0
	5-37	4-20	1.25-1.50	0.6-2	0.08-0.15	0.0-2.9	---	0.24	0.28			
	37-72	4-20	1.60-1.85	0.2-0.6	0.08-0.14	0.0-2.9	---	0.24	0.28			
IaB:												
Insula--------------	0-1	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	1	8	0
	1-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-16	4-20	1.40-1.60	2-6	0.08-0.13	0.0-2.9	---	0.17	0.24			
	16-25	---	---	0.00-0.0015	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
InB:												
Insula--------------	0-1	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	1	8	0
	1-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-16	4-20	1.40-1.60	2-6	0.08-0.13	0.0-2.9	---	0.17	0.24			
	16-25	---	---	0.00-0.0015	---	---	---	---	---			
IrC:												
Insula, rolling-----	0-1	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	1	8	0
	1-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-16	4-20	1.40-1.60	2-6	0.08-0.13	0.0-2.9	---	0.17	0.24			
	16-25	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop--------	0-72	---	---	0.00-0.0015	---	---	---	---	---	-	8	0
IrD:												
Insula, hilly-------	0-1	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	1	8	0
	1-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-16	4-20	1.40-1.60	2-6	0.08-0.13	0.0-2.9	---	0.17	0.24			
	16-25	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop--------	0-60	---	---	0.00-0.0015	---	---	---	---	---	-	8	0
KaA:												
Kalurah-------------	0-11	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	3.0-6.0	0.32	0.32	4	5	56
	11-47	4-20	1.20-1.50	0.2-0.6	0.08-0.15	0.0-2.9	---	0.28	0.32			
	47-72	4-20	1.60-1.85	0.06-0.2	0.08-0.15	0.0-2.9	---	0.24	0.28			
KaB:												
Kalurah-------------	0-11	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	3.0-6.0	0.32	0.32	4	5	56
	11-47	4-20	1.20-1.50	0.2-0.6	0.08-0.15	0.0-2.9	---	0.28	0.32			
	47-72	4-20	1.60-1.85	0.06-0.2	0.08-0.15	0.0-2.9	---	0.24	0.28			
KbB:												
Kalurah, very stony-	0-11	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	3.0-6.0	0.32	0.32	4	8	0
	11-47	4-20	1.20-1.50	0.2-0.6	0.08-0.15	0.0-2.9	---	0.28	0.32			
	47-72	4-20	1.60-1.85	0.06-0.2	0.08-0.15	0.0-2.9	---	0.24	0.28			
Pyrites, very stony--------------	0-8	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.24	0.32	4	8	0
	8-40	4-20	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	0.24	0.28			
	40-72	4-20	1.60-1.85	0.06-0.6	0.06-0.10	0.0-2.9	0.0-0.2	0.24	0.28			
Lc:												
Lovewell------------	0-14	7-20	0.95-1.35	0.6-2	0.20-0.35	0.0-2.9	2.0-8.0	0.32	0.32	5	3	86
	14-29	7-20	0.95-1.40	0.6-2	0.20-0.45	0.0-2.9	0.5-2.0	0.49	0.49			
	29-72	2-20	1.10-1.50	0.6-2	0.18-0.40	0.0-2.9	0.0-1.0	0.49	0.49			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
Ld:												
Loxley--------------	0-3	0-0	0.30-0.40	0.6-6	0.45-0.55	---	70-90	---	---	3	5	56
	3-72	0-0	0.10-0.35	0.2-6	0.35-0.45	---	70-90	---	---			
LeC:												
Lyman---------------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop--------	0-60	---	---	0.06-6	---	---	---	---	---	-	8	0
LeD:												
Lyman, very bouldery-----------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop--------	0-60	---	---	0.06-6	---	---	---	---	---	-	8	0
Lt:												
Lyme, very bouldery-	0-3	2-18	1.35-1.60	0.6-6	0.05-0.20	0.0-2.9	2.0-10	0.32	0.28	5	3	86
	3-16	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	0.24	0.28			
	16-72	2-18	1.45-1.70	0.6-6	0.04-0.16	0.0-2.9	---	---	---			
Tughill, very bouldery-----------	0-4	---	---	0.6-6	0.50-0.65	---	35-80	---	---	3	8	0
	4-8	2-18	1.10-1.40	0.6-2	0.08-0.13	0.0-2.9	5.0-20	0.20	0.28			
	8-40	2-18	1.20-1.50	0.2-0.6	0.06-0.08	0.0-2.9	1.0-3.0	0.20	0.28			
	40-72	2-18	1.70-1.95	0.06-0.2	0.05-0.07	0.0-2.9	0.0-2.0	0.20	0.28			
MaA:												
Malone--------------	0-10	4-22	1.10-1.40	0.6-2	0.09-0.16	0.0-2.9	2.0-8.0	0.20	0.28	3	5	56
	10-25	4-18	1.20-1.50	0.06-0.6	0.08-0.15	0.0-2.9	---	0.20	0.24			
	25-72	4-18	1.70-1.90	0.06-0.6	0.06-0.14	0.0-2.9	---	0.20	0.24			
MaB:												
Malone--------------	0-10	4-22	1.10-1.40	0.6-2	0.09-0.16	0.0-2.9	2.0-8.0	0.20	0.28	3	5	56
	10-25	4-18	1.20-1.50	0.06-0.6	0.08-0.15	0.0-2.9	---	0.20	0.24			
	25-72	4-18	1.70-1.90	0.06-0.6	0.06-0.14	0.0-2.9	---	0.20	0.24			
MbB:												
Malone, very stony--	0-10	4-22	1.10-1.40	0.6-2	0.09-0.16	0.0-2.9	2.0-8.0	0.20	0.28	3	8	0
	10-25	4-18	1.20-1.50	0.06-0.6	0.08-0.15	0.0-2.9	---	0.20	0.24			
	25-72	4-18	1.70-1.90	0.06-0.6	0.06-0.14	0.0-2.9	---	0.20	0.24			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
MdB:												
Malone, undulating--	0-10	4-22	1.10-1.40	0.6-2	0.09-0.16	0.0-2.9	2.0-8.0	0.20	0.28	3	5	56
	10-25	4-18	1.20-1.50	0.06-0.6	0.08-0.15	0.0-2.9	---	0.20	0.24			
	25-72	4-18	1.70-1.90	0.06-0.6	0.06-0.14	0.0-2.9	---	0.20	0.24			
Adjidaumo-----------	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	4.0-12	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
MeB:												
Malone, very stony--	0-10	4-22	1.10-1.40	0.6-2	0.09-0.16	0.0-2.9	2.0-8.0	0.20	0.28	3	8	0
	10-25	4-18	1.20-1.50	0.06-0.6	0.08-0.15	0.0-2.9	---	0.20	0.24			
	25-72	4-18	1.70-1.90	0.06-0.6	0.06-0.14	0.0-2.9	---	0.20	0.24			
Adjidaumo-----------	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	4.0-12	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
MfA:												
Matoon--------------	0-8	27-40	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	3.0-7.0	0.49	0.49	2	6	48
	8-12	25-55	1.10-1.30	0.2-0.6	0.12-0.14	3.0-5.9	---	0.28	0.28			
	12-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
	27-37	---	---	0.00-20	---	---	---	---	---			
MfB:												
Matoon--------------	0-8	27-40	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	3.0-7.0	0.49	0.49	2	6	48
	8-12	25-55	1.10-1.30	0.2-0.6	0.12-0.14	3.0-5.9	---	0.28	0.28			
	12-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
	27-37	---	---	0.00-20	---	---	---	---	---			
Mh:												
Mino----------------	0-10	5-18	1.20-1.50	0.6-2	0.16-0.20	0.0-2.9	2.0-8.0	0.28	0.28	5	3	86
	10-32	5-18	1.20-1.50	0.6-2	0.13-0.20	0.0-2.9	---	0.28	0.28			
	32-72	5-18	1.20-1.50	0.6-2	0.13-0.20	0.0-2.9	---	0.28	0.28			
Mn:												
Munuscong-----------	0-8	4-20	1.30-1.65	2-6	0.13-0.15	0.0-2.9	4.0-15	0.20	0.20	5	3	86
	8-26	4-20	1.30-1.70	2-6	0.12-0.17	0.0-2.9	0.0-0.5	0.24	0.24			
	26-98	27-65	1.35-1.70	0.06-0.2	0.08-0.18	3.0-5.9	0.0-0.5	0.28	0.28			
MsA:												
Muskellunge---------	0-12	27-40	1.00-1.25	0.2-0.6	0.16-0.21	3.0-5.9	2.0-9.0	0.49	0.49	5	6	48
	12-37	27-65	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
	37-72	40-65	1.15-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
MsB:												
Muskellunge---------	0-12	27-40	1.00-1.25	0.2-0.6	0.16-0.21	3.0-5.9	2.0-9.0	0.49	0.49	5	6	48
	12-37	27-65	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
	37-72	40-65	1.15-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
MuB:												
Muskellunge---------	0-12	27-40	1.00-1.25	0.2-0.6	0.16-0.21	3.0-5.9	2.0-9.0	0.49	0.49	5	6	48
	12-37	27-65	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
	37-72	40-65	1.15-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
MwB:												
Muskellunge, undulating---------	0-12	27-40	1.00-1.25	0.2-0.6	0.16-0.21	3.0-5.9	2.0-9.0	0.49	0.49	5	6	48
	12-37	27-65	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
	37-72	40-65	1.15-1.40	0.06-0.2	0.12-0.14	3.0-5.9	---	0.28	0.28			
Adjidaumo-----------	0-8	40-55	1.00-1.25	0.2-0.6	0.14-0.18	3.0-5.9	4.0-8.0	0.37	0.37	5	4	86
	8-27	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-4.0	0.28	0.28			
	27-72	35-60	1.20-1.40	0.0015-0.2	0.12-0.14	3.0-5.9	0.5-2.0	0.28	0.28			
Na:												
Naumburg------------	0-5	---	0.10-0.40	0.2-6	0.20-0.50	---	35-80	---	---	5	2	134
	5-19	1-5	1.20-1.50	2-6	0.05-0.09	0.0-2.9	3.0-7.0	0.17	0.17			
	19-41	1-5	1.20-1.50	6-20	0.06-0.08	0.0-2.9	---	0.17	0.17			
	41-72	1-5	1.45-1.65	6-20	0.04-0.06	0.0-2.9	---	0.17	0.17			
NhA:												
Nehasne-------------	0-7	4-20	1.10-1.40	0.6-6	0.11-0.15	0.0-2.9	2.0-6.0	0.24	0.24	2	3	86
	7-23	4-22	1.20-1.55	0.6-6	0.09-0.14	0.0-2.9	---	0.20	0.24			
	23-25	4-22	1.30-1.60	0.6-6	0.07-0.12	0.0-2.9	---	0.20	0.24			
	25-35	---	---	0.00-20	---	---	---	---	---			
NhB:												
Nehasne-------------	0-7	4-20	1.10-1.40	0.6-6	0.11-0.15	0.0-2.9	2.0-6.0	0.24	0.24	2	3	86
	7-23	4-22	1.20-1.55	0.6-6	0.09-0.14	0.0-2.9	---	0.20	0.24			
	23-25	4-22	1.30-1.60	0.6-6	0.07-0.12	0.0-2.9	---	0.20	0.24			
	25-35	---	---	0.00-20	---	---	---	---	---			
NhC:												
Nehasne-------------	0-7	4-20	1.10-1.40	0.6-6	0.11-0.15	0.0-2.9	2.0-6.0	0.24	0.24	2	3	86
	7-23	4-22	1.20-1.55	0.6-6	0.09-0.14	0.0-2.9	---	0.20	0.24			
	23-25	4-22	1.30-1.60	0.6-6	0.07-0.12	0.0-2.9	---	0.20	0.24			
	25-35	---	---	0.00-20	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
NoA:												
Nicholville---------	0-8	7-18	1.20-1.50	0.6-2	0.16-0.22	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	8-18	7-18	1.20-1.50	0.6-2	0.15-0.20	0.0-2.9	---	0.64	0.64			
	18-39	4-18	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	---	0.64	0.64			
	39-72	2-18	1.45-1.65	0.6-2	0.12-0.20	0.0-2.9	---	0.49	0.49			
NoB:												
Nicholville---------	0-8	7-18	1.20-1.50	0.6-2	0.16-0.22	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	8-18	7-18	1.20-1.50	0.6-2	0.15-0.20	0.0-2.9	---	0.64	0.64			
	18-39	4-18	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	---	0.64	0.64			
	39-72	2-18	1.45-1.65	0.6-2	0.12-0.20	0.0-2.9	---	0.49	0.49			
NoC:												
Nicholsville, rolling------------	0-8	7-18	1.20-1.50	0.6-2	0.16-0.22	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	8-18	7-18	1.20-1.50	0.6-2	0.15-0.20	0.0-2.9	---	0.64	0.64			
	18-39	4-18	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	---	0.64	0.64			
	39-72	2-18	1.45-1.65	0.6-2	0.12-0.20	0.0-2.9	---	0.49	0.49			
NrB:												
Nicholville---------	0-8	7-18	1.20-1.50	0.6-2	0.16-0.22	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	8-18	7-18	1.20-1.50	0.6-2	0.15-0.20	0.0-2.9	---	0.64	0.64			
	18-39	4-18	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	---	0.64	0.64			
	39-72	2-18	1.45-1.65	0.6-2	0.12-0.20	0.0-2.9	---	0.49	0.49			
OgA:												
Ogdensburg----------	0-9	7-27	1.10-1.40	0.6-6	0.10-0.20	0.0-2.9	4.0-10	0.24	0.24	2	5	56
	9-21	4-20	1.20-1.50	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.20	0.24			
	21-24	4-20	1.20-1.50	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.20	0.28			
	24-34	---	---	0.00-20	---	---	---	---	---			
OgB:												
Ogdensburg----------	0-9	7-27	1.10-1.40	0.6-6	0.10-0.20	0.0-2.9	4.0-10	0.24	0.24	2	5	56
	9-21	4-20	1.20-1.50	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.20	0.24			
	21-24	4-20	1.20-1.50	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.20	0.28			
	24-34	---	---	0.00-20	---	---	---	---	---			
Pg:												
Pits, gravel and sand---------------	0-6	0-1	---	6-20	0.01-0.02	0.0-2.9	0.0-0.1	0.02	---	-	8	0
	6-72	0-1	---	6-101	0.01-0.02	0.0-2.9	---	0.02	---			
Ph:												
Pits, quarry--------	0-72	0-0	---	0.00-0.0015	0.00-0.00	---	---	---	---	-	8	0

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
PmC:												
Potsdam-------------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	5	56
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
PoC:												
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
PoD:												
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
Tunbridge, very bouldery-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	8	0
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
PpD:												
Potsdam, very bouldery-----------	0-3	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
PpD:												
Berkshire, very bouldery-----------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	2-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
PsC:												
Potsdam, very bouldery-----------	0-3	---	---	0.2-6	0.20-0.50	---	35-80	---	---	3	8	0
	3-6	---	---	0.2-6	0.50-0.65	---	35-80	---	---			
	6-9	7-22	1.10-1.40	0.6-2	0.15-0.21	0.0-2.9	2.0-8.0	0.49	0.49			
	9-22	7-22	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	---	0.64	0.64			
	22-34	3-20	1.30-1.60	0.6-2	0.08-0.15	0.0-2.9	---	0.28	0.32			
	34-72	3-20	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	---	0.28	0.32			
Crary, very bouldery-----------	0-8	7-22	1.10-1.40	0.6-2	0.13-0.21	0.0-2.9	2.0-8.0	0.49	0.49	3	8	0
	8-24	7-22	1.20-1.50	0.6-2	0.11-0.20	0.0-2.9	0.0-1.0	0.64	0.64			
	24-36	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-1.0	0.24	0.28			
	36-72	3-20	1.65-1.95	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	0.24	0.28			
PvB:												
Pyrities------------	0-8	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.24	0.32	4	5	56
	8-40	4-20	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	0.24	0.28			
	40-72	4-20	1.60-1.85	0.06-0.6	0.06-0.10	0.0-2.9	0.0-0.2	0.24	0.28			
PvC:												
Pyrities------------	0-8	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.24	0.32	4	5	56
	8-40	4-20	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	0.24	0.28			
	40-72	4-20	1.60-1.85	0.06-0.6	0.06-0.10	0.0-2.9	0.0-0.2	0.24	0.28			
PxD:												
Pyrites, very stony--------------	0-8	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.24	0.32	4	8	0
	8-40	4-20	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	0.24	0.28			
	40-72	4-20	1.60-1.85	0.06-0.6	0.06-0.10	0.0-2.9	0.0-0.2	0.24	0.28			
PyB:												
Pyrities, rocky-----	0-8	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.24	0.32	4	5	56
	8-40	4-20	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	0.24	0.28			
	40-72	4-20	1.60-1.85	0.06-0.6	0.06-0.10	0.0-2.9	0.0-0.2	0.24	0.28			
PyC:												
Pyrities, rocky-----	0-8	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.24	0.32	4	5	56
	8-40	4-20	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	0.24	0.28			
	40-72	4-20	1.60-1.85	0.06-0.6	0.06-0.10	0.0-2.9	0.0-0.2	0.24	0.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
PzC:												
Pyrites, very stony--------------	0-8	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.24	0.32	4	8	0
	8-40	4-20	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	0.24	0.28			
	40-72	4-20	1.60-1.85	0.06-0.6	0.06-0.10	0.0-2.9	0.0-0.2	0.24	0.28			
Kalurah, very stony-	0-11	4-20	1.10-1.40	0.6-2	0.16-0.20	0.0-2.9	2.0-6.0	0.32	0.32	4	8	0
	11-47	4-20	1.20-1.50	0.2-0.6	0.08-0.15	0.0-2.9	---	0.28	0.32			
	47-72	4-20	1.60-1.85	0.06-0.2	0.08-0.15	0.0-2.9	---	0.24	0.28			
QwB:												
Quetico-------------	0-0	---	0.10-0.35	0.1-6	0.20-0.50	---	35-80	---	---	1	3	86
	0-1	---	0.10-0.40	0.1-6	0.50-0.65	---	35-80	---	---			
	1-8	7-20	1.40-1.60	0.6-2	0.13-0.17	0.0-2.9	2.0-6.0	0.24	0.24			
	8-17	---	---	0.00-0.0015	---	---	---	---	---			
Rock outcrop--------	0-72	---	---	0.00-0.0015	---	---	---	---	---	-	8	0
Insula--------------	0-1	---	0.10-0.35	0.2-6	0.20-0.50	---	35-80	---	---	1	8	0
	1-3	---	0.10-0.40	0.2-6	0.50-0.65	---	35-80	---	---			
	3-16	4-20	1.40-1.60	2-6	0.08-0.13	0.0-2.9	---	0.17	0.24			
	16-25	---	---	0.00-0.0015	---	---	---	---	---			
RaA:												
Raquette------------	0-9	3-18	1.10-1.40	2-20	0.11-0.14	0.0-2.9	2.0-6.0	0.24	0.24	4	3	86
	9-19	3-18	1.10-1.40	2-20	0.07-0.14	0.0-2.9	0.5-1.0	0.24	0.28			
	19-25	1-18	1.10-1.40	2-20	0.07-0.14	0.0-2.9	0.0-0.2	0.24	0.28			
	25-72	1-10	1.25-1.55	20-101	0.03-0.06	0.0-2.9	---	0.17	0.24			
RaB:												
Raquette------------	0-9	3-18	1.10-1.40	2-20	0.11-0.14	0.0-2.9	2.0-6.0	0.24	0.24	4	3	86
	9-19	3-18	1.10-1.40	2-20	0.07-0.14	0.0-2.9	0.5-1.0	0.24	0.28			
	19-25	1-18	1.10-1.40	2-20	0.07-0.14	0.0-2.9	0.0-0.2	0.24	0.28			
	25-72	1-10	1.25-1.55	20-101	0.03-0.06	0.0-2.9	---	0.17	0.24			
RaC:												
Raquette------------	0-9	3-18	1.10-1.40	2-20	0.11-0.14	0.0-2.9	2.0-6.0	0.24	0.24	4	3	86
	9-19	3-18	1.10-1.40	2-20	0.07-0.14	0.0-2.9	0.5-1.0	0.24	0.28			
	19-25	1-18	1.10-1.40	2-20	0.07-0.14	0.0-2.9	0.0-0.2	0.24	0.28			
	25-72	1-10	1.25-1.55	20-101	0.03-0.06	0.0-2.9	---	0.17	0.24			
Rd:												
Redwater------------	0-7	4-18	1.15-1.40	0.6-2	0.14-0.21	0.0-2.9	3.0-6.0	0.28	0.28	3	5	56
	7-38	4-18	1.20-1.45	0.6-2	0.10-0.20	0.0-2.9	---	0.28	0.28			
	38-50	1-10	1.25-1.55	2-20	0.01-0.10	0.0-2.9	---	0.20	0.24			
	50-60	---	---	0.00-20	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
RoA:												
Roundabout----------	0-10	7-18	0.85-1.25	0.2-2	0.25-0.35	0.0-2.9	3.0-10	0.43	0.43	5	5	56
	10-31	7-18	1.30-1.60	0.2-2	0.20-0.30	0.0-2.9	0.0-1.0	0.64	0.64			
	31-55	3-18	1.40-1.70	0.06-0.6	0.16-0.26	0.0-2.9	0.0-0.2	0.64	0.64			
	55-72	3-18	1.40-1.70	0.06-0.6	0.16-0.26	0.0-2.9	0.0-0.2	0.64	0.64			
RoB:												
Roundabout----------	0-10	7-18	0.85-1.25	0.2-2	0.25-0.35	0.0-2.9	3.0-10	0.43	0.43	5	5	56
	10-31	7-18	1.30-1.60	0.2-2	0.20-0.30	0.0-2.9	0.0-1.0	0.64	0.64			
	31-55	3-18	1.40-1.70	0.06-0.6	0.16-0.26	0.0-2.9	0.0-0.2	0.64	0.64			
	55-72	3-18	1.40-1.70	0.06-0.6	0.16-0.26	0.0-2.9	0.0-0.2	0.64	0.64			
Rt:												
Runeberg------------	0-10	4-18	1.40-1.55	0.6-2	0.15-0.20	0.0-2.9	4.0-15	0.20	0.20	4	5	56
	10-24	4-18	1.60-1.80	0.2-0.6	0.12-0.18	0.0-2.9	0.5-2.0	0.28	0.28			
	24-72	4-18	1.75-1.85	0.06-0.6	0.06-0.13	0.0-2.9	0.0-0.5	0.28	0.28			
Ru:												
Runeberg, very stony--------------	0-10	4-18	1.40-1.55	0.6-2	0.15-0.20	0.0-2.9	4.0-15	0.20	0.20	4	8	0
	10-24	4-18	1.60-1.80	0.2-0.6	0.12-0.18	0.0-2.9	0.5-2.0	0.28	0.28			
	24-72	4-18	1.75-1.85	0.06-0.6	0.06-0.13	0.0-2.9	0.0-0.5	0.28	0.28			
SaB:												
Salmon--------------	0-13	4-18	0.90-1.50	0.6-2	0.13-0.30	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	13-25	4-18	1.10-1.50	0.6-2	0.12-0.26	0.0-2.9	---	0.64	0.64			
	25-30	4-18	1.45-1.65	0.6-2	0.12-0.26	0.0-2.9	---	0.64	0.64			
	30-72	4-22	1.45-1.65	0.6-2	0.09-0.26	0.0-2.9	---	0.64	0.64			
SaC:												
Salmon, rolling-----	0-13	4-18	0.90-1.50	0.6-2	0.13-0.30	0.0-2.9	2.0-6.0	0.49	0.49	5	5	56
	13-25	4-18	1.10-1.50	0.6-2	0.12-0.26	0.0-2.9	---	0.64	0.64			
	25-30	4-18	1.45-1.65	0.6-2	0.12-0.26	0.0-2.9	---	0.64	0.64			
	30-72	4-22	1.45-1.65	0.6-2	0.09-0.26	0.0-2.9	---	0.64	0.64			
Se:												
Searsport-----------	0-6	0-0	0.10-0.40	0.2-6	0.20-0.45	---	80-99	---	---	4	8	0
	6-10	1-5	1.15-1.35	6-101	0.01-0.13	0.0-2.9	3.0-20	0.17	0.17			
	10-34	0-5	1.35-1.55	6-101	0.01-0.09	0.0-2.9	0.0-0.5	0.17	0.17			
	34-72	0-5	1.35-1.55	6-101	0.01-0.09	0.0-2.9	0.0-0.5	0.10	0.15			
Sg:												
Stockholm-----------	0-10	1-10	1.10-1.50	2-6	0.05-0.09	0.0-2.9	2.0-12	0.17	0.17	5	2	134
	10-23	0-7	1.20-1.50	2-6	0.06-0.08	0.0-2.9	---	0.17	0.17			
	23-30	27-65	1.15-1.40	0.0015-0.06	0.12-0.17	3.0-5.9	---	0.17	0.17			
	30-72	27-65	1.15-1.40	0.0015-0.06	0.12-0.17	3.0-5.9	---	0.17	0.17			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
ShB:												
Summerville---------	0-6	4-20	1.30-1.60	2-6	0.08-0.18	0.0-2.9	2.0-6.0	0.24	0.24	1	3	86
	6-12	4-25	1.35-1.65	0.6-2	0.10-0.16	0.0-2.9	0.0-0.5	0.24	0.24			
	12-22	---	---	0.00-20	---	---	---	---	---			
SkB:												
Summerville, rocky--	0-6	4-20	1.30-1.60	2-6	0.08-0.18	0.0-2.9	2.0-6.0	0.24	0.24	1	3	86
	6-12	4-25	1.35-1.65	0.6-2	0.10-0.16	0.0-2.9	0.0-0.5	0.24	0.24			
	12-22	---	---	0.00-20	---	---	---	---	---			
Gouverneur----------	0-7	4-27	1.10-1.40	0.6-2	0.14-0.20	0.0-2.9	2.0-6.0	0.37	0.37	1	5	56
	7-9	4-27	1.20-1.50	0.6-2	0.12-0.19	0.0-2.9	0.0-1.0	0.24	0.24			
	9-19	---	---	0.00-20	---	---	---	---	---			
SlD:												
Summerville, hilly--	0-6	4-20	1.30-1.60	2-6	0.08-0.18	0.0-2.9	2.0-6.0	0.24	0.24	1	3	86
	6-12	4-25	1.35-1.65	0.6-2	0.10-0.16	0.0-2.9	0.0-0.5	0.24	0.24			
	12-22	---	---	0.00-20	---	---	---	---	---			
Rock outcrop--------	0-72	---	---	0.00-20	---	---	---	---	---	-	8	0
SmC:												
Summerville, rolling------------	0-6	4-20	1.30-1.60	2-6	0.08-0.18	0.0-2.9	2.0-6.0	0.24	0.24	1	3	86
	6-12	4-25	1.35-1.65	0.6-2	0.10-0.16	0.0-2.9	0.0-0.5	0.24	0.24			
	12-22	---	---	0.00-20	---	---	---	---	---			
Rock outcrop--------	0-60	---	---	0.00-20	---	---	---	---	---	-	8	0
Nehasne, rolling----	0-7	4-20	1.10-1.40	0.6-6	0.11-0.15	0.0-2.9	2.0-6.0	0.24	0.24	2	3	86
	7-23	4-22	1.20-1.55	0.6-6	0.09-0.14	0.0-2.9	---	0.20	0.24			
	23-25	4-22	1.30-1.60	0.6-6	0.07-0.12	0.0-2.9	---	0.20	0.24			
	25-35	---	---	0.00-20	---	---	---	---	---			
SpB:												
Sunapee-------------	0-1	---	0.10-0.40	0.2-6	0.20-0.50	---	35-80	---	---	5	3	86
	1-4	2-20	0.80-1.20	0.6-2	0.16-0.22	0.0-2.9	2.0-8.0	0.28	0.28			
	4-23	2-20	0.80-1.30	0.6-2	0.07-0.17	0.0-2.9	---	0.20	0.24			
	23-72	2-20	1.20-1.50	0.6-6	0.03-0.17	0.0-2.9	---	0.20	0.24			
SsB:												
Sunapee, very bouldery-----------	0-1	---	0.10-0.40	0.2-6	0.20-0.50	---	35-80	---	---	5	3	86
	1-4	2-20	0.80-1.20	0.6-2	0.16-0.22	0.0-2.9	2.0-8.0	0.28	0.28			
	4-23	2-20	0.80-1.30	0.6-2	0.07-0.17	0.0-2.9	---	0.20	0.24			
	23-72	2-20	1.20-1.50	0.6-6	0.03-0.17	0.0-2.9	---	0.20	0.24			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
SsB:												
Berkshire, very bouldery-----------	0-7	2-27	1.10-1.15	0.6-6	0.06-0.22	0.0-2.9	2.0-6.0	0.20	0.32	5	8	0
	7-30	2-22	1.15-1.30	0.6-6	0.10-0.20	0.0-2.9	0.0-1.0	0.32	0.55			
	30-72	1-20	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-0.0	0.24	0.43			
Sw:												
Swanton-------------	0-8	4-20	1.00-1.30	2-6	0.13-0.25	0.0-2.9	4.0-10	0.28	0.28	5	3	86
	8-26	4-20	1.15-1.45	2-6	0.12-0.20	0.0-2.9	0.0-1.0	0.32	0.32			
	26-72	27-60	1.40-1.70	0.0015-0.2	0.11-0.16	3.0-5.9	0.0-0.2	0.49	0.49			
TdA:												
Trout River---------	0-8	1-5	1.10-1.40	6-20	0.03-0.12	0.0-2.9	2.0-6.0	0.20	0.20	5	2	134
	8-33	0-5	1.25-1.55	6-20	0.02-0.04	0.0-2.9	0.0-1.0	0.15	0.17			
	33-72	0-3	1.45-1.65	6-20	0.01-0.02	0.0-2.9	0.0-0.2	0.15	0.17			
TdB:												
Trout River---------	0-8	1-5	1.10-1.40	6-20	0.03-0.12	0.0-2.9	2.0-6.0	0.20	0.20	5	2	134
	8-33	0-5	1.25-1.55	6-20	0.02-0.04	0.0-2.9	0.0-1.0	0.15	0.17			
	33-72	0-3	1.45-1.65	6-20	0.01-0.02	0.0-2.9	0.0-0.2	0.15	0.17			
TfB:												
Trout River, very stony--------------	0-8	1-5	1.10-1.40	6-20	0.03-0.12	0.0-2.9	2.0-6.0	0.20	0.20	5	8	0
	8-33	0-5	1.25-1.55	6-20	0.02-0.04	0.0-2.9	0.0-1.0	0.15	0.17			
	33-72	0-3	1.45-1.65	6-20	0.01-0.02	0.0-2.9	0.0-0.2	0.15	0.17			
Fahey, very stony---	0-7	1-5	1.10-1.40	6-20	0.07-0.13	0.0-2.9	2.0-6.0	0.17	0.17	5	8	0
	7-31	0-5	1.25-1.55	6-20	0.02-0.05	0.0-2.9	---	0.17	0.24			
	31-72	0-3	1.45-1.65	6-20	0.01-0.03	0.0-2.9	---	0.17	0.24			
TuD:												
Tunbridge-----------	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	3	86
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			
Lyman---------------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
TwC:												
Tunbridge, rolling--	0-3	2-22	0.80-1.20	0.6-6	0.11-0.20	0.0-2.9	2.0-8.0	0.20	0.24	2	3	86
	3-19	2-22	1.20-1.40	0.6-6	0.10-0.21	0.0-2.9	2.0-6.0	0.20	0.28			
	19-30	2-22	1.20-1.50	0.6-6	0.09-0.15	0.0-2.9	0.5-1.0	0.20	0.24			
	30-39	---	---	0.00-0.0015	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
TwC:												
Lyman, rolling------	0-4	2-20	0.75-1.20	2-6	0.13-0.24	0.0-2.9	2.0-8.0	0.20	0.28	1	---	---
	4-14	2-20	0.90-1.40	2-6	0.08-0.28	0.0-2.9	---	0.32	0.37			
	14-24	---	---	0.00-0.0015	---	---	---	---	---			
Dawson--------------	0-5	0-0	0.20-0.35	0.6-6	0.45-0.55	---	65-85	---	---	2	2	134
	5-30	0-0	0.15-0.40	0.2-6	0.35-0.45	---	65-85	---	---			
	30-72	0-10	1.55-1.75	6-20	0.03-0.10	0.0-2.9	0.0-0.5	0.10	0.15			
Ua:												
Udipsamments, smoothed-----------	0-6	0-10	---	0.2-20	0.03-0.08	---	0.0-6.0	---	---	-	---	---
	6-72	0-5	---	6-20	0.03-0.05	---	---	---	---			
Ue:												
Udorthents, loamy---	0-4	4-27	1.20-1.80	0.06-0.6	0.06-0.15	0.0-2.9	0.0-5.0	0.37	0.37	-	---	---
	4-72	4-35	1.30-1.90	0.06-0.6	0.04-0.13	0.0-2.9	---	0.32	0.37			
Uf:												
Udorthents, clayey--	0-6	27-40	1.00-1.25	0.0015-0.6	0.16-0.21	3.0-5.9	0.0-8.0	0.49	0.49	-	---	---
	6-72	25-60	1.15-1.40	0.0015-0.6	0.12-0.14	3.0-5.9	---	0.28	0.28			
Ug:												
Udorthents, mine waste, acid-------	0-4	4-27	1.20-1.80	0.0015-20	0.06-0.15	0.0-2.9	0.0-5.0	0.37	0.37	-	---	---
	4-72	4-35	1.30-1.90	0.0015-20	0.04-0.13	0.0-2.9	---	0.32	0.37			
Uh:												
Udorthents, mine waste, nonacid----	0-4	4-27	1.20-1.80	0.0015-20	0.06-0.15	0.0-2.9	0.0-5.0	0.37	0.37	-	---	---
	4-72	4-35	1.30-1.90	0.0015-20	0.04-0.13	0.0-2.9	---	0.32	0.37			
Un:												
Udorthents, refuse substratum---------	0-6	5-27	1.20-1.80	0.0015-20	0.03-0.15	0.0-2.9	0.0-4.0	0.32	0.37	-	---	---
	6-72	---	---	0.0015-20	---	---	---	---	---			
Ur:												
Urban land----------	0-6	---	---	0.00-0.0015	0.00-0.00	---	---	---	---	-	---	---
W:												
Water.												

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
WaA:												
Waddington----------	0-8	2-20	0.90-1.20	0.6-2	0.08-0.13	0.0-2.9	2.0-6.0	0.17	0.24	2	3	86
	8-12	2-20	1.20-1.40	2-6	0.07-0.14	0.0-2.9	---	0.17	0.20			
	12-19	1-18	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
	19-72	0-10	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
WaB:												
Waddington----------	0-8	2-20	0.90-1.20	0.6-2	0.08-0.13	0.0-2.9	2.0-6.0	0.17	0.24	2	3	86
	8-12	2-20	1.20-1.40	2-6	0.07-0.14	0.0-2.9	---	0.17	0.20			
	12-19	1-18	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
	19-72	0-10	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
WaC:												
Waddington, rolling-	0-8	2-20	0.90-1.20	0.6-2	0.08-0.13	0.0-2.9	2.0-6.0	0.17	0.24	2	3	86
	8-12	2-20	1.20-1.40	2-6	0.07-0.14	0.0-2.9	---	0.17	0.20			
	12-19	1-18	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
	19-72	0-10	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
WaD:												
Waddington----------	0-8	2-20	0.90-1.20	0.6-2	0.08-0.13	0.0-2.9	2.0-6.0	0.17	0.24	2	3	86
	8-12	2-20	1.20-1.40	2-6	0.07-0.14	0.0-2.9	---	0.17	0.20			
	12-19	1-18	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
	19-72	0-10	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
WdB:												
Waddington, very cobbly sandy loam--	0-8	2-20	0.90-1.20	0.6-2	0.08-0.13	0.0-2.9	2.0-6.0	0.17	0.24	2	3	86
	8-12	2-20	1.20-1.40	2-6	0.07-0.14	0.0-2.9	---	0.17	0.20			
	12-19	1-18	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
	19-72	0-10	1.30-1.50	6-101	0.01-0.08	0.0-2.9	---	0.17	0.24			
Wg:												
Wegatchie-----------	0-8	7-27	1.00-1.25	0.6-2	0.20-0.35	0.0-2.9	4.0-10	0.49	0.49	5	5	56
	8-40	18-35	1.20-1.40	0.2-0.6	0.15-0.20	0.0-2.9	---	0.49	0.49			
	40-72	18-35	1.20-1.55	0.2-0.6	0.15-0.20	0.0-2.9	---	0.49	0.49			

Table 17.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
021:					
Dawson---------------	0-5	---	100-200	3.5-4.4	0
	5-30	---	150-230	3.5-4.4	0
	30-72	1.0-2.0	---	4.5-6.5	0
Fluvaquents----------	0-10	40-50	---	4.5-7.3	0
	10-72	3.0-25	---	4.5-8.4	0-5
Loxley---------------	0-3	---	50-100	2.0-4.4	0
	3-72	---	50-120	2.0-4.4	0
023:					
Loxley---------------	0-3	---	50-100	2.0-4.4	0
	3-72	---	50-120	2.0-4.4	0
Dawson---------------	0-5	---	100-200	3.5-4.4	0
	5-30	---	150-230	3.5-4.4	0
	30-72	1.0-2.0	---	4.5-6.5	0
363A:					
Adams----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
363B:					
Adams----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
363D:					
Adams----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
365:					
Naumburg-------------	0-5	---	---	3.5-5.5	0
	5-19	---	---	3.5-5.5	0
	19-41	---	---	3.5-5.5	0
	41-72	---	---	4.5-6.5	0
Croghan--------------	0-10	---	5.0-20	4.5-6.0	0
	10-44	---	15-40	4.5-6.0	0
	44-72	---	2.0-10	4.5-6.0	0
376A:					
Colton---------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
376A:					
Adams----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	---
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
376C:					
Colton----------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0
Adams----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	---
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
376D:					
Colton---------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0
Adams----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	---
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
380B:					
Colton---------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0
Dawson---------------	0-5	---	100-200	3.5-4.4	0
	5-30	---	150-230	3.5-4.4	0
	30-72	1.0-2.0	---	4.5-6.5	0
380D:					
Colton---------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
380D:					
Dawson---------------	0-5	---	100-200	3.5-4.4	0
	5-30	---	150-230	3.5-4.4	0
	30-72	1.0-2.0	---	4.5-6.5	0
643C:					
Berkshire, very bouldery-----------	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
643D:					
Berkshire, very bouldery-----------	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
644C:					
Berkshire, rolling, very bouldery-------	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
Lyme, very bouldery--	0-3	---	---	4.5-5.5	0
	3-16	---	---	4.5-5.5	0
	16-72	---	---	4.5-5.5	0
644D:					
Berkshire, hilly, very bouldery-------	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
Lyme, very bouldery--	0-3	---	---	4.5-5.5	0
	3-16	---	---	4.5-5.5	0
	16-72	---	---	4.5-5.5	0
709B:					
Adirondack, very bouldery-----------	0-2	---	---	3.5-5.0	---
	2-3	---	---	3.5-5.0	---
	3-8	---	15-40	3.5-5.5	0
	8-22	---	20-60	3.5-5.5	0
	22-72	5.0-15	---	5.1-6.0	0
Tughill, very bouldery-----------	0-4	---	---	3.5-5.5	---
	4-8	---	5.0-25	3.5-5.5	0
	8-40	---	5.0-20	3.5-6.0	0
	40-72	2.0-15	---	5.1-6.5	0
Lyme, very bouldery--	0-3	---	---	4.5-5.5	0
	3-16	---	---	4.5-5.5	0
	16-72	---	---	4.5-5.5	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
741C:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
Tunbridge, very bouldery------------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Crary, very bouldery-	0-8	---	30-45	4.5-6.0	0
	8-24	---	30-60	4.5-6.0	0
	24-36	5.0-18	---	5.1-7.8	0
	36-72	2.0-15	---	5.1-7.8	0
741D:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
Tunbridge, very bouldery------------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
743C:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
743D:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
745C:					
Crary, very bouldery-	0-8	---	30-45	4.5-6.0	0
	8-24	---	30-60	4.5-6.0	0
	24-36	5.0-18	---	5.1-7.8	0
	36-72	2.0-15	---	5.1-7.8	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
745C:					
Potsdam, very bouldery-----------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
747B:					
Crary, very bouldery-	0-8	---	30-45	4.5-6.0	0
	8-24	---	30-60	4.5-6.0	0
	24-36	5.0-18	---	5.1-7.8	0
	36-72	2.0-15	---	5.1-7.8	0
Adirondack, very bouldery-----------	0-2	---	---	3.5-5.0	---
	2-3	---	---	3.5-5.0	---
	3-8	---	15-40	3.5-5.5	0
	8-22	---	20-60	3.5-5.5	0
	22-72	5.0-15	---	5.1-6.0	0
807:					
Udorthents, mine waste---------------	0-4	---	---	3.5-5.5	0
	4-72	---	---	3.5-5.5	0
831C:					
Tunbridge, very bouldery-----------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Lyman, very bouldery-	0-4	---	---	3.6-6.0	0
	4-14	---	---	3.6-6.0	0
	14-24	---	---	---	---
831D:					
Tunbridge, very bouldery-----------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Lyman, very bouldery-	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---
831F:					
Tunbridge, very bouldery-----------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Lyman, very bouldery-	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
833C:					
Tunbridge, very bouldery	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Adirondack, very bouldery	0-2	---	---	3.5-5.0	---
	2-3	---	---	3.5-5.0	---
	3-8	---	15-40	3.5-5.5	0
	8-22	---	20-60	3.5-5.5	0
	22-72	5.0-15	---	5.1-6.0	0
Lyman, very bouldery	0-4	---	---	3.6-6.0	0
	4-14	---	---	3.6-6.0	0
	14-24	---	---	---	---
835C:					
Tunbridge, very bouldery	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Borosaprists	0-30	90-160	---	3.5-4.5	0
	30-72	---	4.0-17	4.5-6.5	0
Ricker, very bouldery	0-1	---	---	3.5-4.4	0
	1-3	---	---	3.5-4.4	0
	3-4	---	---	3.5-5.0	0
	4-14	---	---	---	---
861C:					
Lyman	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---
Ricker, very bouldery	0-1	---	---	3.5-4.4	0
	1-3	---	---	3.5-4.4	0
	3-4	---	---	3.5-5.0	0
	4-14	---	---	---	---
Rock outcrop, very bouldery	0-8	---	---	---	---
861D:					
Lyman, very bouldery	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---
Ricker, very bouldery	0-1	---	---	3.5-4.4	0
	1-3	---	---	3.5-4.4	0
	3-4	---	---	3.5-5.0	0
	4-14	---	---	---	---
Rock outcrop	0-8	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
861F:					
Lyman, very bouldery-	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---
Ricker, very bouldery------------	0-1	---	---	3.5-4.4	0
	1-3	---	---	3.5-4.4	0
	3-4	---	---	3.5-5.0	0
	4-14	---	---	---	---
Rock outcrop---------	0-8	---	---	---	---
891F:					
Rock outcrop---------	0-8	---	---	---	---
Ricker, very bouldery------------	0-1	---	---	3.5-4.4	0
	1-3	---	---	3.5-4.4	0
	3-4	---	---	3.5-5.0	0
	4-14	---	---	---	---
Lyman, very bouldery-	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---
AaB:					
Adams, sand----------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
AaC:					
Adams, sand----------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
AaD:					
Adams, sand----------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
AdB:					
Adams, loamy fine sand----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0
AdC:					
Adams, loamy fine sand----------------	0-7	---	12-26	4.5-6.0	0
	7-8	---	12-26	4.5-6.0	0
	8-20	---	10-23	4.5-6.0	0
	20-72	1.0-5.0	---	4.5-6.5	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
Ak:					
Adjidaumo, silty clay	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
Am:					
Adjidaumo, mucky silty clay	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
Ao:					
Adjidaumo, flooded	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
Ap:					
Adjidaumo, silty clay, rocky	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
ArC:					
Adjidaumo	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
Summerville	0-6	5.0-15	---	6.1-7.8	0
	6-12	2.0-15	---	6.1-8.4	0-10
	12-22	---	---	---	---
BeB:					
Berkshire	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
BgC:					
Berkshire, very bouldery	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
Lyme, very bouldery	0-3	---	---	4.5-5.5	0
	3-16	---	---	4.5-5.5	0
	16-72	---	---	4.5-5.5	0
BkC:					
Berkshire, very bouldery	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
Sunapee, very bouldery	0-1	---	---	3.6-5.5	0
	1-4	---	---	3.6-5.5	0
	4-23	---	---	3.6-5.5	0
	23-72	---	---	3.6-6.0	0
Bo:					
Borosaprists	0-30	90-160	---	3.8-4.5	0
	30-72	---	4.0-17	4.5-6.5	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
Bo:					
Fluvaquents----------	0-10	40-50	---	4.5-7.3	0
	10-72	3.0-25	---	4.5-8.4	0-5
Ce:					
Carbondale, undrained-----------	0-12	150-230	---	5.6-7.8	0
	12-40	150-230	---	5.6-7.8	0
	40-99	150-200	---	5.6-7.8	0
CgB:					
Colton---------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0
CgC:					
Colton---------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0
CgD:					
Colton---------------	0-6	---	10-25	3.6-6.0	0
	6-20	---	5.0-30	3.6-5.5	0
	20-72	1.0-5.0	---	4.5-6.5	0
Duxbury--------------	0-7	---	5.0-19	3.6-6.5	0
	7-14	---	5.0-8.0	3.6-6.5	0
	14-24	2.0-6.0	---	4.5-6.5	0
	24-72	1.0-2.0	---	4.5-6.5	0
Ck:					
Cook-----------------	0-7	10-45	---	5.1-7.3	0
	7-39	10-25	---	5.6-7.3	0
	39-72	10-25	---	6.6-8.4	0-5
Cn:					
Cornish--------------	0-8	4.0-11	---	4.5-6.5	0
	8-21	1.0-4.0	---	4.5-6.5	0
	21-46	1.0-2.0	---	4.5-6.5	0
	46-72	1.0-2.0	---	4.5-6.5	0
Cp:					
Coveytown------------	0-1	---	---	5.1-6.5	0
	1-5	5.0-25	---	5.1-6.5	0
	5-38	5.0-15	---	5.1-7.3	0
	38-72	2.0-12	---	6.1-8.4	0-5

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
Cr:					
Covington, very stony	0-1	---	---	5.1-6.5	0
	1-5	5.0-25	---	5.1-6.5	0
	5-38	5.0-15	---	5.1-7.3	0
	38-72	2.0-12	---	6.1-8.4	0-5
Cook, very stony	0-7	10-45	---	5.1-7.3	0
	7-39	10-25	---	5.6-7.3	0
	39-72	10-25	---	6.6-8.4	0-5
CsB:					
Crary	0-8	---	30-45	4.5-6.0	0
	8-24	---	30-60	4.5-6.0	0
	24-36	5.0-18	---	5.1-7.8	0
	36-72	2.0-15	---	5.1-7.8	0
CtB:					
Crary, very bouldery	0-8	---	30-45	4.5-6.0	0
	8-24	---	30-60	4.5-6.0	0
	24-36	5.0-18	---	5.1-7.8	0
	36-72	2.0-15	---	5.1-7.8	0
Potsdam, very bouldery	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
CuB:					
Croghan, sand	0-10	---	5.0-20	3.6-6.0	0
	10-44	---	15-40	4.5-6.0	0
	44-72	---	2.0-10	4.5-6.0	0
CvA:					
Croghan, loamy fine sand	0-10	---	5.0-20	4.5-6.0	0
	10-44	---	15-40	4.5-6.0	0
	44-72	---	2.0-10	4.5-6.0	0
CvB:					
Croghan, loamy fine sand	0-10	---	5.0-20	4.5-6.0	0
	10-44	---	15-40	4.5-6.0	0
	44-72	---	2.0-10	4.5-6.0	0
Da:					
Dawson	0-5	---	100-200	3.5-4.4	0
	5-30	---	150-230	3.5-4.4	0
	30-72	1.0-2.0	---	4.5-6.5	0
DAM:					
Large dams.					
Dd:					
Deford, loamy fine sand	0-8	10-25	---	5.6-7.8	0-1
	8-24	10-25	---	5.6-7.8	0-2
	24-72	1.0-5.0	---	6.6-8.4	0-5

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
Df:					
Deford, mucky loamy fine sand-----------	0-8	10-25	---	5.6-7.8	0-1
	8-24	10-25	---	5.6-7.8	0-2
	24-72	1.0-5.0	---	6.6-8.4	0-5
DpA:					
Depeyster------------	0-10	10-25	---	5.1-7.3	0
	10-27	5.0-20	---	6.1-7.8	0-2
	27-72	2.0-12	---	6.6-8.4	0-5
DpB:					
Depeyster------------	0-10	10-25	---	5.1-7.3	0
	10-27	5.0-20	---	6.1-7.8	0-2
	27-72	2.0-12	---	6.6-8.4	0-5
DpC:					
Depeyster------------	0-10	10-25	---	5.1-7.3	0
	10-27	5.0-20	---	6.1-7.8	0-2
	27-72	2.0-12	---	6.6-8.4	0-5
Dr:					
Dorval---------------	0-31	100-160	---	5.1-7.8	0
	31-72	18-30	---	6.1-8.4	0
Du:					
Dune land------------	0-6	0.0-1.0	---	4.5-6.0	0
	6-72	0.0-1.0	---	4.5-6.0	0
EeB:					
Eelweir--------------	0-10	---	---	5.1-6.5	0
	10-29	---	---	5.6-7.3	0
	29-35	---	---	5.6-7.8	0
	35-72	---	---	5.6-7.8	0-2
EmA:					
Elmwood--------------	0-6	---	5.0-12	4.5-6.5	0
	6-25	4.0-18	---	4.5-6.5	0
	25-72	3.0-15	---	5.6-7.8	0-5
EmB:					
Elmwood--------------	0-6	---	5.0-12	4.5-6.5	0
	6-25	4.0-18	---	4.5-6.5	0
	25-72	3.0-15	---	5.6-7.8	0-5
Fa:					
Fahey----------------	0-7	---	10-35	4.5-6.0	0
	7-31	10-35	---	5.6-7.3	0
	31-72	5.0-20	---	5.6-8.4	0-2
FkA:					
Flackville-----------	0-9	---	---	5.1-6.5	0
	9-29	---	---	5.1-7.3	0
	29-72	---	---	6.6-8.4	0-5
FkB:					
Flackville-----------	0-9	---	---	5.1-6.5	0
	9-29	---	---	5.1-7.3	0
	29-72	---	---	6.6-8.4	0-5

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
Fu:					
Fluvaquents, frequently flooded--	0-10	40-50	---	4.5-7.3	0
	10-72	3.0-25	---	4.5-8.4	0-5
Udifluvents, frequently flooded--	0-4	---	---	4.5-7.3	0
	4-72	---	---	4.5-8.4	0-5
GrB:					
Grenville------------	0-5	---	---	5.1-6.5	0
	5-37	---	---	5.6-7.3	0
	37-72	---	---	7.4-8.4	3-10
GrC:					
Grenville------------	0-5	---	---	5.1-6.5	0
	5-37	---	---	5.6-7.3	0
	37-72	---	---	7.4-8.4	3-10
GsD:					
Grenville, very stony---------------	0-5	---	---	5.1-6.5	0
	5-37	---	---	5.6-7.3	0
	37-72	---	---	7.4-8.4	3-10
Gu:					
Guff-----------------	0-9	---	---	5.6-7.3	0
	9-39	---	---	6.6-8.4	0-5
	39-49	---	---	---	---
HaA:					
Hailesboro-----------	0-7	8.0-12	---	5.6-7.3	0
	7-24	5.0-13	---	6.1-7.8	0-1
	24-44	5.0-13	---	6.6-8.4	0-5
	44-72	5.0-10	---	6.6-8.4	0-10
HaB:					
Hailesboro-----------	0-7	8.0-12	---	5.6-7.3	0
	7-24	5.0-13	---	6.1-7.8	0-1
	24-44	5.0-13	---	6.6-8.4	0-5
	44-72	5.0-10	---	6.6-8.4	0-10
Hc:					
Hannawa--------------	0-8	---	---	6.1-7.3	0
	8-19	---	---	6.6-7.8	0-5
	19-27	---	---	---	---
HeB:					
Heuvelton------------	0-7	---	---	5.1-7.3	0
	7-11	---	---	5.1-7.3	0
	11-22	---	---	5.6-7.8	0-3
	22-72	---	---	6.6-8.4	3-10
HeC:					
Heuvelton, rolling---	0-7	---	---	5.1-7.3	0
	7-11	---	---	5.1-7.3	0
	11-22	---	---	5.6-7.8	0-3
	22-72	---	---	6.6-8.4	3-10

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
HkE:					
Heuvelton------------	0-7	---	---	5.1-7.3	0
	7-11	---	---	5.1-7.3	0
	11-22	---	---	5.6-7.8	0-3
	22-72	---	---	6.6-8.4	3-10
Depeyster------------	0-10	10-25	---	5.1-7.3	0
	10-27	5.0-20	---	6.1-7.8	0-2
	27-72	2.0-12	---	6.6-8.4	0-5
HnA:					
Hogansburg-----------	0-10	17-25	---	5.1-7.3	0
	10-25	10-20	---	5.1-7.8	0-3
	25-72	8.0-25	---	7.4-8.4	3-10
HnB:					
Hogansburg-----------	0-10	17-25	---	5.1-7.3	0
	10-25	10-20	---	5.1-7.8	0-3
	25-72	8.0-25	---	7.4-8.4	3-10
HrB:					
Hogansburg, very stony---------------	0-10	17-25	---	5.1-7.3	0
	10-25	10-20	---	5.1-7.8	0-3
	25-72	8.0-25	---	7.4-8.4	3-10
Grenville, very stony---------------	0-5	---	---	5.1-6.5	0
	5-37	---	---	5.6-7.3	0
	37-72	---	---	7.4-8.4	3-10
IaB:					
Insula---------------	0-1	---	---	4.5-6.5	0
	1-3	---	---	4.5-6.5	0
	3-16	---	---	4.5-6.5	0
	16-25	---	---	---	---
InB:					
Insula---------------	0-1	---	---	4.5-6.5	0
	1-3	---	---	4.5-6.5	0
	3-16	---	---	4.5-6.5	0
	16-25	---	---	---	---
IrC:					
Insula, rolling------	0-1	---	---	4.5-6.5	0
	1-3	---	---	4.5-6.5	0
	3-16	---	---	4.5-6.5	0
	16-25	---	---	---	---
Rock outcrop---------	0-72	---	---	---	---
IrD:					
Insula, hilly--------	0-1	---	---	4.5-6.5	0
	1-3	---	---	4.5-6.5	0
	3-16	---	---	4.5-6.5	0
	16-25	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
KaA:					
Kalurah--------------	0-11	17-25	---	5.6-7.3	0
	11-47	5.0-11	---	6.1-7.3	0-1
	47-72	10-25	---	6.6-8.4	0-5
KaB:					
Kalurah--------------	0-11	17-25	---	5.6-7.3	0
	11-47	5.0-11	---	6.1-7.3	0-1
	47-72	10-25	---	6.6-8.4	0-5
KbB:					
Kalurah, very stony--	0-11	17-25	---	5.6-7.3	0
	11-47	5.0-11	---	6.1-7.3	0-1
	47-72	10-25	---	6.6-8.4	0-5
Pyrities, very stony-	0-8	17-25	---	5.6-7.3	0
	8-40	10-20	---	6.1-7.8	0-1
	40-72	10-25	---	6.1-8.4	0-5
Lc:					
Lovewell-------------	0-14	4.0-11	---	4.5-6.5	0
	14-29	1.0-5.0	---	4.5-6.5	0
	29-72	1.0-3.0	---	4.5-6.5	0
Ld:					
Loxley---------------	0-3	---	50-100	2.0-4.4	0
	3-72	---	50-120	2.0-4.4	0
LeC:					
Lyman----------------	0-4	---	---	3.6-6.0	0
	4-14	---	---	3.6-6.0	0
	14-24	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---
LeD:					
Lyman, very bouldery-	0-4	---	---	3.6-6.0	0
	4-14	---	---	3.6-6.0	0
	14-24	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---
Lt:					
Lyme, very bouldery--	0-3	---	---	4.5-5.5	0
	3-16	---	---	4.5-5.5	0
	16-72	---	---	4.5-5.5	0
Tughill, very bouldery------------	0-4	---	---	3.5-5.5	0
	4-8	---	5.0-25	3.5-5.5	0
	8-40	---	5.0-20	3.5-6.0	0
	40-72	2.0-15	---	5.6-6.5	0
MaA:					
Malone---------------	0-10	10-25	---	5.6-6.5	0
	10-25	15-40	---	6.1-7.3	0-1
	25-72	15-40	---	6.6-8.4	1-10

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
MaB:					
Malone---------------	0-10	10-25	---	5.6-6.5	0
	10-25	15-40	---	6.1-7.3	0-1
	25-72	15-40	---	6.6-8.4	1-10
MbB:					
Malone, very stony---	0-10	10-25	---	5.6-6.5	0
	10-25	15-40	---	6.1-7.3	0-1
	25-72	15-40	---	6.6-8.4	1-10
MdB:					
Malone, undulating---	0-10	10-25	---	5.6-6.5	0
	10-25	15-40	---	6.1-7.3	0-1
	25-72	15-40	---	6.6-8.4	1-10
Adjidaumo------------	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
MeB:					
Malone, very stony---	0-10	10-25	---	5.6-6.5	0
	10-25	15-40	---	6.1-7.3	0-1
	25-72	15-40	---	6.6-8.4	1-10
Adjidaumo------------	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
MfA:					
Matoon---------------	0-8	---	---	6.1-7.3	0
	8-12	---	---	6.6-7.8	0-2
	12-27	---	---	6.6-7.8	0-10
	27-37	---	---	---	---
MfB:					
Matoon---------------	0-8	---	---	6.1-7.3	0
	8-12	---	---	6.6-7.8	0-2
	12-27	---	---	6.6-7.8	0-10
	27-37	---	---	---	---
Mh:					
Mino-----------------	0-10	---	---	5.1-6.5	0
	10-32	---	---	5.6-7.3	0
	32-72	---	---	6.1-8.4	0-5
Mn:					
Munuscong------------	0-8	5.0-15	---	6.1-7.8	0
	8-26	2.0-10	---	6.1-7.8	0-5
	26-98	10-30	---	7.4-8.4	5-10
MsA:					
Muskellunge----------	0-12	---	---	5.1-7.3	0
	12-37	---	---	5.1-7.8	0-5
	37-72	---	---	6.6-8.4	3-10
MsB:					
Muskellunge----------	0-12	---	---	5.1-7.3	0
	12-37	---	---	5.1-7.8	0-5
	37-72	---	---	6.6-8.4	3-10

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
MuB:					
Muskellunge----------	0-12	---	---	5.1-7.3	0
	12-37	---	---	5.1-7.8	0-5
	37-72	---	---	6.6-8.4	3-10
MwB:					
Muskellunge, undulating----------	0-12	---	---	5.1-7.3	0
	12-37	---	---	5.1-7.8	0-5
	37-72	---	---	6.6-8.4	3-10
Adjidaumo------------	0-8	---	---	6.1-7.3	0
	8-27	---	---	6.6-7.8	0-2
	27-72	---	---	7.4-8.4	0-5
Na:					
Naumburg-------------	0-5	---	---	3.5-5.5	0
	5-19	---	---	3.5-5.5	0
	19-41	---	---	3.5-5.5	0
	41-72	---	---	4.5-6.5	0
NhA:					
Nehasne--------------	0-7	10-35	---	5.6-6.5	0
	7-23	8.0-25	---	6.1-7.3	0
	23-25	1.0-15	---	6.6-7.8	0-5
	25-35	---	---	---	---
NhB:					
Nehasne--------------	0-7	10-35	---	5.6-6.5	0
	7-23	8.0-25	---	6.1-7.3	0
	23-25	1.0-15	---	6.6-7.8	0-5
	25-35	---	---	---	---
NhC:					
Nehasne--------------	0-7	10-35	---	5.6-6.5	0
	7-23	8.0-25	---	6.1-7.3	0
	23-25	1.0-15	---	6.6-7.8	0-5
	25-35	---	---	---	---
NoA:					
Nicholville----------	0-8	---	---	3.5-6.0	0
	8-18	---	---	4.5-6.0	0
	18-39	---	---	4.5-6.5	0
	39-72	---	---	4.5-6.5	0
NoB:					
Nicholville----------	0-8	---	---	3.6-6.0	0
	8-18	---	---	4.5-6.0	0
	18-39	---	---	4.5-6.5	0
	39-72	---	---	4.5-6.5	0
NoC:					
Nicholville, rolling-	0-8	---	---	3.5-6.0	0
	8-18	---	---	4.5-6.0	0
	18-39	---	---	4.5-6.5	0
	39-72	---	---	4.5-6.5	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
NrB:					
Nicholville----------	0-8	---	---	3.5-6.0	0
	8-18	---	---	4.5-6.0	0
	18-39	---	---	4.5-6.5	0
	39-72	---	---	4.5-6.5	0
OgA:					
Ogdensburg-----------	0-9	20-60	---	5.6-7.3	0
	9-21	4.0-15	---	6.1-7.8	0-1
	21-24	3.0-7.0	---	6.6-8.4	0-10
	24-34	---	---	---	---
OgB:					
Ogdensburg-----------	0-9	20-60	---	5.6-7.3	0
	9-21	4.0-15	---	6.1-7.8	0-1
	21-24	3.0-7.0	---	6.6-8.4	0-10
	24-34	---	---	---	---
Pg:					
Pits, gravel and sand----------------	0-6	---	---	---	---
	6-72	---	---	---	---
Ph:					
Pits, quarry---------	0-72	---	---	---	---
PmC:					
Potsdam--------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
PoC:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
Tunbridge, very bouldery------------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
PoD:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
PoD:					
Tunbridge, very bouldery------------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
PpD:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
Berkshire, very bouldery------------	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
PsC:					
Potsdam, very bouldery------------	0-3	---	---	3.5-6.0	---
	3-6	---	---	3.5-6.0	---
	6-9	---	25-40	3.6-6.0	0
	9-22	---	15-40	4.5-6.0	0
	22-34	3.0-10	---	4.5-7.3	0
	34-72	2.0-6.0	---	5.1-7.8	0
Crary, very bouldery-	0-8	---	30-45	4.5-6.0	0
	8-24	---	30-60	4.5-6.0	0
	24-36	5.0-18	---	5.1-7.8	0
	36-72	2.0-15	---	5.1-7.8	0
PvB:					
Pyrities-------------	0-8	17-25	---	5.6-7.3	0
	8-40	10-20	---	6.1-7.8	0-1
	40-72	10-25	---	6.1-8.4	0-5
PvC:					
Pyrities-------------	0-8	17-25	---	5.6-7.3	0
	8-40	10-20	---	6.1-7.8	0-1
	40-72	10-25	---	6.1-8.4	0-5
PxD:					
Pyrities, very stony-	0-8	17-25	---	5.6-7.3	0
	8-40	10-20	---	6.1-7.8	0-1
	40-72	10-25	---	6.1-8.4	0-5
PyB:					
Pyrities, rocky------	0-8	17-25	---	5.6-7.3	0
	8-40	10-20	---	6.1-7.8	0-1
	40-72	10-25	---	6.1-8.4	0-5
PyC:					
Pyrities, rocky------	0-8	17-25	---	5.6-7.3	0
	8-40	10-20	---	6.1-7.8	0-1
	40-72	10-25	---	6.1-8.4	0-5

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv-alent
	In	meq/100 g	meq/100 g	pH	Pct
PzC:					
Pyrities, very stony-	0-8	17-25	---	5.6-7.3	0
	8-40	10-20	---	6.1-7.8	0-1
	40-72	10-25	---	6.1-8.4	0-5
Kalurah, very stony--	0-11	17-25	---	5.6-7.3	0
	11-47	5.0-11	---	6.1-7.3	0-1
	47-72	10-25	---	6.6-8.4	0-5
QwB:					
Quetico--------------	0-0	---	---	4.5-5.5	0
	0-1	---	---	4.5-5.5	0
	1-8	---	9.0-18	4.5-5.5	0
	8-17	---	---	---	---
Rock outcrop---------	0-72	---	---	---	---
Insula---------------	0-1	---	---	4.5-6.5	0
	1-3	---	---	4.5-6.5	0
	3-16	---	---	4.5-6.5	0
	16-25	---	---	---	---
RaA:					
Raquette-------------	0-9	---	---	5.6-7.3	0
	9-19	---	---	6.1-7.8	0-1
	19-25	---	---	6.6-7.8	0-2
	25-72	---	---	6.6-8.4	2-10
RaB:					
Raquette-------------	0-9	---	---	5.6-7.3	0
	9-19	---	---	6.1-7.8	0-1
	19-25	---	---	6.6-7.8	0-2
	25-72	---	---	6.6-8.4	2-10
RaC:					
Raquette-------------	0-9	---	---	5.6-7.3	0
	9-19	---	---	6.1-7.8	0-1
	19-25	---	---	6.6-7.8	0-2
	25-72	---	---	6.6-8.4	2-10
Rd:					
Redwater-------------	0-7	10-40	---	5.1-6.5	0
	7-38	8.0-30	---	6.1-7.3	0
	38-50	6.0-25	---	6.1-7.3	0-1
	50-60	---	---	---	---
RoA:					
Roundabout-----------	0-10	2.0-10	---	4.5-6.5	0
	10-31	1.0-4.0	---	4.5-6.5	0
	31-55	5.0-8.0	---	5.6-7.3	0-1
	55-72	5.0-8.0	---	5.6-8.4	0-5
RoB:					
Roundabout-----------	0-10	2.0-10	---	4.5-6.5	0
	10-31	1.0-4.0	---	4.5-6.5	0
	31-55	5.0-8.0	---	5.6-7.3	0-1
	55-72	5.0-8.0	---	5.6-8.4	0-5

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
Rt:					
Runeberg-------------	0-10	25-55	---	6.1-7.3	0
	10-24	5.0-20	---	6.1-7.3	0
	24-72	3.0-12	---	7.4-8.4	1-10
Ru:					
Runeberg, very stony-	0-10	25-55	---	6.1-7.3	0
	10-24	5.0-20	---	6.1-7.3	0
	24-72	3.0-12	---	7.4-8.4	1-10
SaB:					
Salmon---------------	0-13	---	---	3.5-6.0	0
	13-25	---	---	3.5-6.0	0
	25-30	---	---	3.5-6.0	0
	30-72	---	---	5.1-6.5	0
SaC:					
Salmon, rolling------	0-13	---	---	3.5-6.0	0
	13-25	---	---	3.5-6.0	0
	25-30	---	---	3.5-6.0	0
	30-72	---	---	5.1-6.5	0
Se:					
Searsport------------	0-6	---	20-50	4.5-6.5	0
	6-10	---	2.0-3.0	4.5-6.5	0
	10-34	1.0-2.0	---	4.5-6.5	0
	34-72	0.0-1.0	---	4.5-6.5	0
Sg:					
Stockholm------------	0-10	---	---	3.5-6.0	0
	10-23	---	---	5.1-6.0	0
	23-30	---	---	5.1-6.5	0
	30-72	---	---	6.6-8.4	0-5
ShB:					
Summerville----------	0-6	5.0-15	---	6.1-7.8	0
	6-12	2.0-15	---	6.1-8.4	0-10
	12-22	---	---	---	---
SkB:					
Summerville, rocky---	0-6	5.0-15	---	6.1-7.8	0
	6-12	2.0-15	---	6.1-8.4	0-10
	12-22	---	---	---	---
Gouverneur-----------	0-7	16-26	---	5.6-7.8	0
	7-9	8.0-15	---	5.6-7.8	0-2
	9-19	---	---	---	---
SlD:					
Summerville, hilly---	0-6	5.0-15	---	6.1-7.8	0
	6-12	2.0-15	---	6.1-8.4	0-10
	12-22	---	---	---	---
Rock outcrop---------	0-72	---	---	---	---
SmC:					
Summerville, rolling-	0-6	5.0-15	---	6.1-7.8	0
	6-12	2.0-15	---	6.1-8.4	0-10
	12-22	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
SmC:					
Nehasne, rolling-----	0-7	10-35	---	5.6-6.5	0
	7-23	8.0-25	---	6.1-7.3	0
	23-25	1.0-15	---	6.6-7.8	0-5
	25-35	---	---	---	---
SpB:					
Sunapee--------------	0-1	---	---	3.6-5.5	0
	1-4	---	---	3.6-5.5	0
	4-23	---	---	3.6-5.5	0
	23-72	---	---	3.6-6.0	0
SsB:					
Sunapee, very bouldery------------	0-1	---	---	3.6-5.5	---
	1-4	---	---	3.6-5.5	---
	4-23	---	---	3.6-5.5	---
	23-72	---	---	3.6-6.0	---
Berkshire, very bouldery------------	0-7	---	---	3.6-6.0	0
	7-30	---	---	3.6-6.0	0
	30-72	---	---	3.6-6.0	0
Sw:					
Swanton--------------	0-8	5.0-12	---	5.1-7.3	0
	8-26	4.0-16	---	5.1-7.3	0
	26-72	3.0-15	---	5.6-8.4	0-3
TdA:					
Trout River----------	0-8	---	5.0-15	4.5-5.5	0
	8-33	5.0-10	---	5.1-7.3	0
	33-72	5.0-10	---	5.6-8.4	0-1
TdB:					
Trout River----------	0-8	---	5.0-15	4.5-5.5	0
	8-33	5.0-10	---	5.1-7.3	0
	33-72	5.0-10	---	5.6-8.4	0-1
TfB:					
Trout River, very stony---------------	0-8	---	5.0-15	4.5-5.5	0
	8-33	5.0-10	---	5.1-7.3	0
	33-72	5.0-10	---	5.6-8.4	0-1
Fahey, very stony----	0-7	---	10-35	4.5-6.0	0
	7-31	10-35	---	5.6-7.3	0
	31-72	5.0-20	---	5.6-8.4	0-2
TuD:					
Tunbridge------------	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Lyman----------------	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
TwC:					
Tunbridge, rolling---	0-3	---	6.0-12	3.5-6.0	0
	3-19	---	5.0-16	3.5-6.0	0
	19-30	1.0-5.0	---	3.5-6.0	0
	30-39	---	---	---	---
Lyman, rolling-------	0-4	---	---	3.5-6.0	0
	4-14	---	---	3.5-6.0	0
	14-24	---	---	---	---
Dawson---------------	0-5	---	100-200	3.6-4.4	0
	5-30	---	150-230	3.6-4.4	0
	30-72	1.0-2.0	---	4.5-6.5	0
Ua:					
Udipsamments, smoothed------------	0-6	---	---	6.1-8.4	0
	6-72	---	---	6.1-8.4	0-10
Ue:					
Udorthents, loamy----	0-4	---	---	6.6-9.0	0-5
	4-72	---	---	6.6-9.0	0-10
Uf:					
Udorthents, clayey---	0-6	---	---	6.1-9.0	0-5
	6-72	---	---	6.1-9.0	0-10
Ug:					
Udorthents, mine waste, acid---------	0-4	---	---	3.5-5.5	0
	4-72	---	---	3.5-5.5	0
Uh:					
Udorthents, mine waste, nonacid------	0-4	---	---	6.6-9.0	0-10
	4-72	---	---	6.6-9.0	0-10
Un:					
Udorthents, refuse substratum----------	0-6	---	---	5.1-8.4	0-10
	6-72	---	---	---	---
Ur:					
Urban land-----------	0-6	---	---	---	---
W:					
Water.					
WaA:					
Waddington-----------	0-8	---	---	6.1-7.3	0
	8-12	---	---	6.6-7.8	0-2
	12-19	---	---	6.6-8.4	0-5
	19-72	---	---	7.4-8.4	2-10
WaB:					
Waddington-----------	0-8	---	---	6.1-7.3	0
	8-12	---	---	6.6-7.8	0-2
	12-19	---	---	6.6-8.4	0-5
	19-72	---	---	7.4-8.4	2-10

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbonate equiv- alent
	In	meq/100 g	meq/100 g	pH	Pct
WaC:					
Waddington, rolling--	0-8	---	---	6.1-7.3	0
	8-12	---	---	6.6-7.8	0-2
	12-19	---	---	6.6-8.4	0-5
	19-72	---	---	7.4-8.4	2-10
WaD:					
Waddington-----------	0-8	---	---	6.1-7.3	0
	8-12	---	---	6.6-7.8	0-2
	12-19	---	---	6.6-8.4	0-5
	19-72	---	---	7.4-8.4	2-10
WdB:					
Waddington, very cobbly sandy loam---	0-8	---	---	6.1-7.3	0
	8-12	---	---	6.6-7.8	0-2
	12-19	---	---	6.6-8.4	0-5
	19-72	---	---	7.4-8.4	2-10
Wg:					
Wegatchie------------	0-8	---	---	5.6-7.3	0
	8-40	---	---	6.1-7.8	0-1
	40-72	---	---	6.6-8.4	1-10

Table 18.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
021:							
Dawson	---	---	0	30-36	High	High	High
Fluvaquents	---	---	0	---	High	High	High
Loxley	---	---	6-18	50-55	High	High	High
023:							
Loxley	---	---	6-18	50-55	High	High	High
Dawson	---	---	0	30-36	High	High	High
363A:							
Adams	---	---	0	---	Low	Low	High
363B:							
Adams	---	---	0	---	Low	Low	High
363D:							
Adams	---	---	0	---	Low	Low	High
365:							
Naumburg	---	---	0	---	Moderate	High	High
Croghan	---	---	0	---	Moderate	Low	High
376A:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High
Adams	---	---	0	---	Low	Low	High
376C:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High
Adams	---	---	0	---	Low	Low	High
376D:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High
Adams	---	---	0	---	Low	Low	High
380B:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High
Dawson	---	---	0	30-36	High	High	High
380D:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High
Dawson	---	---	0	30-36	High	High	High

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
643C:							
Berkshire, very bouldery	---	---	0	---	Moderate	Low	High
643D:							
Berkshire, very bouldery	---	---	0	---	Moderate	Low	High
644C:							
Berkshire, rolling, very bouldery	---	---	0	---	Moderate	Low	High
Lyme, very bouldery	---	---	0	---	High	Low	High
644D:							
Berkshire, hilly, very bouldery	---	---	0	---	Moderate	Low	High
Lyme, very bouldery	---	---	0	---	High	Low	High
709B:							
Adirondack, very bouldery	Dense material	15-30	0	---	High	High	High
Tughill, very bouldery	---	---	0	---	High	High	High
Lyme, very bouldery	---	---	0	---	High	Low	High
741C:							
Potsdam, very bouldery	Dense material	16-40	0	---	Moderate	Low	Moderate
Tunbridge, very bouldery	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Crary, very bouldery	Dense material	16-40	0	---	High	Moderate	High
741D:							
Potsdam, very bouldery	Dense material	16-40	0	---	Moderate	Low	Moderate
Tunbridge, very bouldery	Bedrock (lithic)	20-40	0	---	Moderate	High	High
743C:							
Potsdam, very bouldery	Dense material	16-40	0	---	Moderate	Low	Moderate
743D:							
Potsdam, very bouldery	Dense material	16-40	0	---	Moderate	Low	Moderate
745C:							
Crary, very bouldery	Dense material	16-40	0	---	High	Moderate	High
Potsdam, very bouldery	Dense material	16-40	0	---	Moderate	Low	Moderate
747B:							
Crary, very bouldery	Dense material	16-40	0	---	High	Moderate	High
Adirondack, very bouldery	Dense material	15-30	0	---	High	High	High
807:							
Udorthents, mine waste	---	---	---	---	Moderate	---	---

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
831C:							
Tunbridge, very bouldery	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Lyman, very bouldery	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
831D:							
Tunbridge, very bouldery	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Lyman, very bouldery	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
831F:							
Tunbridge, very bouldery	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Lyman, very bouldery	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
833C:							
Tunbridge, very bouldery	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Adirondack, very bouldery	---	---	0	---	High	High	High
Lyman, very bouldery	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
835C:							
Tunbridge, very bouldery	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Borosaprists	---	---	---	---	High	---	---
Ricker, very bouldery	Bedrock (lithic)	2-26	0	---	Low	High	High
861C:							
Lyman	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
Ricker, very bouldery	Bedrock (lithic)	2-20	0	---	Low	High	High
Rock outcrop, very bouldery	Bedrock (lithic)	0-0	0	---	None	---	---
861D:							
Lyman, very bouldery	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
Ricker, very bouldery	Bedrock (lithic)	2-20	0	---	Low	High	High
Rock outcrop	Bedrock (lithic)	0-0	0	---	None	---	---
861F:							
Lyman, very bouldery	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
Ricker, very bouldery	Bedrock (lithic)	2-20	0	---	Low	High	High
Rock outcrop	Bedrock (lithic)	0-0	0	---	None	---	---
891F:							
Rock outcrop	Bedrock (lithic)	0-0	0	---	None	---	---
Ricker, very bouldery	Bedrock (lithic)	2-20	0	---	Low	High	High
Lyman, very bouldery	Bedrock (lithic)	10-20	0	---	Moderate	Low	High

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
AaB:							
Adams, sand	---	---	0	---	Low	Low	High
AaC:							
Adams, sand	---	---	0	---	Low	Low	High
AaD:							
Adams, sand	---	---	0	---	Low	Low	High
AdB:							
Adams, loamy fine sand	---	---	0	---	Low	Low	High
AdC:							
Adams, loamy fine sand	---	---	0	---	Low	Low	High
Ak:							
Adjidaumo, silty clay	---	---	0	---	High	High	Low
Am:							
Adjidaumo, mucky silty clay	---	---	0	---	High	High	Low
Ao:							
Adjidaumo, flooded	---	---	0	---	High	High	Low
Ap:							
Adjidaumo, silty clay, rocky	---	---	0	---	High	High	Low
ArC:							
Adjidaumo	---	---	0	---	High	High	Low
Summerville	Bedrock (lithic)	10-20	0	---	Moderate	Low	Low
BeB:							
Berkshire	---	---	0	---	Moderate	Low	High
BgC:							
Berkshire, very bouldery	---	---	0	---	Moderate	Low	High
Lyme, very bouldery	---	---	0	---	High	Low	High
BkC:							
Berkshire, very bouldery	---	---	0	---	Moderate	Low	High
Sunapee, very bouldery	---	---	0	---	Moderate	Low	High
Bo:							
Borosaprists.							
Fluvaquents	---	---	0	---	High	High	High
Ce:							
Carbondale, undrained	---	---	6-18	43-54	High	High	Moderate
CgB:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
CgC:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High
CgD:							
Colton	---	---	0	---	Low	Low	High
Duxbury	---	---	0	---	Low	Low	High
Ck:							
Cook	---	---	0	---	Moderate	High	Moderate
Cn:							
Cornish	---	---	0	---	High	High	Moderate
Cp:							
Coveytown	---	---	0	---	Moderate	Moderate	Moderate
Cr:							
Coveytown, very stony	---	---	0	---	Moderate	Moderate	Moderate
Cook, very stony	---	---	0	---	Moderate	High	Moderate
CsB:							
Crary	Dense material	16-40	0	---	High	Moderate	High
CtB:							
Crary, very bouldery	Dense material	16-40	0	---	High	Moderate	High
Potsdam, very bouldery	Dense material	16-40	0	---	Moderate	Low	Moderate
CuB:							
Croghan, sand	---	---	0	---	Moderate	Low	High
CvA:							
Croghan, loamy fine sand	---	---	0	---	Moderate	Low	High
CvB:							
Croghan, loamy fine sand	---	---	0	---	Moderate	Low	High
Da:							
Dawson	---	---	0	30-36	High	High	High
DAM:							
Large dams.							
Dd:							
Deford, loamy fine sand	---	---	0	---	Moderate	Low	Moderate
Df:							
Deford, mucky loamy fine sand	---	---	0	---	Moderate	Low	Moderate
DpA:							
Depeyster	---	---	0	---	High	Moderate	Low
DpB:							
Depeyster	---	---	0	---	High	Moderate	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
DpC:							
Depeyster	---	---	0	---	High	Moderate	Low
Dr:							
Dorval	---	---	4-12	25-30	High	High	Moderate
Du:							
Dune land	---	---	0	---	None	Low	Low
EeB:							
Eelweir	---	---	0	---	Moderate	Moderate	Moderate
EmA:							
Elmwood	Abrupt textural change	18-40	0	---	High	Moderate	Moderate
EmB:							
Elmwood	Abrupt textural change	18-40	0	---	High	Moderate	Moderate
Fa:							
Fahey	---	---	0	---	Low	Low	High
FkA:							
Flackville	Abrupt textural change	20-40	0	---	Moderate	Low	Moderate
FkB:							
Flackville	Abrupt textural change	20-40	0	---	Moderate	Low	Moderate
Fu:							
Fluvaquents, frequently flooded	---	---	0	---	High	High	High
Udifluvents, frequently flooded	---	---	0	---	Moderate	High	High
GrB:							
Grenville	---	---	0	---	Moderate	Low	Low
GrC:							
Grenville	---	---	0	---	Moderate	Low	Low
GsD:							
Grenville, very stony	---	---	0	---	Moderate	Low	Low
Gu:							
Guff	Bedrock (lithic)	20-40	0	---	High	High	Low
HaA:							
Hailesboro	---	---	0	---	High	High	Low
HaB:							
Hailesboro	---	---	0	---	High	High	Low
Hc:							
Hannawa	Bedrock (lithic)	10-20	0	---	High	High	Low
HeB:							
Heuvelton	---	---	0	---	High	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
HeC:							
Heuvelton, rolling-----	---	---	0	---	High	High	Low
HkE:							
Heuvelton--------------	---	---	0	---	High	High	Low
Depeyster--------------	---	---	0	---	High	Moderate	Low
HnA:							
Hogansburg-------------	---	---	0	---	High	Moderate	Low
HnB:							
Hogansburg-------------	---	---	0	---	High	Moderate	Low
HrB:							
Hogansburg, very stony-	---	---	0	---	High	Moderate	Low
Grenville, very stony--	---	---	0	---	Moderate	Low	Low
IaB:							
Insula-----------------	Bedrock (lithic)	8-20	0	---	Moderate	Low	Moderate
InB:							
Insula-----------------	Bedrock (lithic)	8-20	0	---	Moderate	Low	Moderate
IrC:							
Insula, rolling--------	Bedrock (lithic)	8-20	0	---	Moderate	Low	Moderate
Rock outcrop-----------	Bedrock (lithic)	0-0	0	---	None	---	---
IrD:							
Insula, hilly----------	Bedrock (lithic)	8-20	0	---	Moderate	Low	Moderate
Rock outcrop-----------	Bedrock (lithic)	0-0	0	---	None	---	---
KaA:							
Kalurah----------------	---	---	0	---	High	Moderate	Low
KaB:							
Kalurah----------------	---	---	0	---	High	Moderate	Low
KbB:							
Kalurah, very stony----	---	---	0	---	High	Moderate	Low
Pyrities, very stony---	---	---	0	---	Moderate	Low	Low
Lc:							
Lovewell---------------	---	---	0	---	High	Moderate	Moderate
Ld:							
Loxley-----------------	---	---	6-18	50-55	High	High	High
LeC:							
Lyman------------------	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
Rock outcrop-----------	Bedrock (lithic)	0-0	0	---	None	---	---
LeD:							
Lyman, very bouldery---	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
Rock outcrop-----------	Bedrock (lithic)	0-0	0	---	None	---	---

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
Lt:							
Lyme, very bouldery----	---	---	0	---	High	Low	High
Tughill, very bouldery-	---	---	0	---	High	High	High
MaA:							
Malone-----------------	---	---	0	---	High	High	Moderate
MaB:							
Malone-----------------	---	---	0	---	High	High	Moderate
MbB:							
Malone, very stony-----	---	---	0	---	High	High	Moderate
MdB:							
Malone, undulating-----	---	---	0	---	High	High	Moderate
Adjidaumo--------------	---	---	0	---	High	High	Low
MeB:							
Malone, very stony-----	---	---	0	---	High	High	Moderate
Adjidaumo--------------	---	---	0	---	High	High	Low
MfA:							
Matoon-----------------	Bedrock (lithic)	20-40	0	---	High	High	Low
MfB:							
Matoon-----------------	Bedrock (lithic)	20-40	0	---	High	High	Low
Mh:							
Mino-------------------	---	---	0	---	High	Moderate	Moderate
Mn:							
Munuscong--------------	Abrupt textural change	20-40	0	---	High	High	Low
MsA:							
Muskellunge------------	---	---	0	---	High	High	Low
MsB:							
Muskellunge------------	---	---	0	---	High	High	Low
MuB:							
Muskellunge------------	---	---	0	---	High	High	Low
MwB:							
Muskellunge, undulating------------	---	---	0	---	High	High	Low
Adjidaumo--------------	---	---	0	---	High	High	Low
Na:							
Naumburg---------------	---	---	0	---	Moderate	High	High
NhA:							
Nehasne----------------	Bedrock (lithic)	20-40	0	---	Moderate	Low	Moderate
NhB:							
Nehasne----------------	Bedrock (lithic)	20-40	0	---	Moderate	Low	Moderate
NhC:							
Nehasne----------------	Bedrock (lithic)	20-40	0	---	Moderate	Low	Moderate

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
NoA:							
Nicholville-----------	---	---	0	---	High	Low	Moderate
NoB:							
Nicholville-----------	---	---	0	---	High	Low	Moderate
NoC:							
Nicholville, rolling---	---	---	0	---	High	Low	Moderate
NrB:							
Nicholville-----------	---	---	0	---	High	Low	Moderate
OgA:							
Ogdensburg------------	Bedrock (lithic)	20-40	0	---	High	High	Low
OgB:							
Ogdensburg------------	Bedrock (lithic)	20-40	0	---	High	High	Low
Pg:							
Pits, gravel and sand--	---	---	0	---	None	---	---
Ph:							
Pits, quarry----------	Bedrock (lithic)	0-0	0	---	None	---	---
PmC:							
Potsdam---------------	Dense material	16-40	0	---	Moderate	Low	Moderate
PoC:							
Potsdam, very bouldery-	Dense material	16-40	0	---	Moderate	Low	Moderate
Tunbridge, very bouldery-------------	Bedrock (lithic)	20-40	0	---	Moderate	High	High
PoD:							
Potsdam, very bouldery-	Dense material	16-40	0	---	Moderate	Low	Moderate
Tunbridge, very bouldery-------------	Bedrock (lithic)	20-40	0	---	Moderate	High	High
PpD:							
Potsdam, very bouldery-	Dense material	16-40	0	---	Moderate	Low	Moderate
Berkshire, very bouldery-------------	---	---	0	---	Moderate	Low	High
PsC:							
Potsdam, very bouldery-	Dense material	16-40	0	---	Moderate	Low	Moderate
Crary, very bouldery---	Dense material	16-40	0	---	High	Moderate	High
PvB:							
Pyrities--------------	---	---	0	---	Moderate	Low	Low
PvC:							
Pyrities--------------	---	---	0	---	Moderate	Low	Low
PxD:							
Pyrities, very stony---	---	---	0	---	Moderate	Low	Low
PyB:							
Pyrities, rocky--------	---	---	0	---	Moderate	Low	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
PyC:							
Pyrities, rocky	---	---	0	---	Moderate	Low	Low
PzC:							
Pyrities, very stony	---	---	0	---	Moderate	Low	Low
Kalurah, very stony	---	---	0	---	High	Moderate	Low
QwB:							
Quetico	Bedrock (lithic)	4-10	0	---	Low	Low	Moderate
Rock outcrop	Bedrock (lithic)	0-0	0	---	None	---	---
Insula	Bedrock (lithic)	8-20	0	---	Moderate	Low	Moderate
RaA:							
Raquette	---	---	0	---	Low	Low	Moderate
RaB:							
Raquette	---	---	0	---	Low	Low	Moderate
RaC:							
Raquette	---	---	0	---	Low	Low	Moderate
Rd:							
Redwater	Bedrock (lithic)	40-60	0	---	High	Moderate	Low
RoA:							
Roundabout	---	---	0	---	High	High	Moderate
RoB:							
Roundabout	---	---	0	---	High	High	Moderate
Rt:							
Runeberg	---	---	0	---	High	High	Low
Ru:							
Runeberg, very stony	---	---	0	---	High	High	Low
SaB:							
Salmon	---	---	0	---	High	Low	Moderate
SaC:							
Salmon, rolling	---	---	0	---	High	Low	Moderate
Se:							
Searsport	---	---	0	---	Moderate	High	High
Sg:							
Stockholm	Abrupt textural change	17-39	0	---	Moderate	High	High
ShB:							
Summerville	Bedrock (lithic)	10-20	0	---	Moderate	Low	Low
SkB:							
Summerville, rocky	Bedrock (lithic)	10-20	0	---	Moderate	Low	Low
Gouverneur	Bedrock (lithic)	1-9	0	---	Moderate	Low	Low
SlD:							
Summerville, hilly	Bedrock (lithic)	10-20	0	---	Moderate	Low	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
SlD:							
Rock outcrop	Bedrock (lithic)	0-0	0	---	None	---	---
SmC:							
Summerville, rolling	Bedrock (lithic)	10-20	0	---	Moderate	Low	Low
Rock outcrop	Bedrock (lithic)	0-0	0	---	None	---	---
Nehasne, rolling	Bedrock (lithic)	20-40	0	---	Moderate	Low	Moderate
SpB:							
Sunapee	---	---	0	---	Moderate	Low	High
SsB:							
Sunapee, very bouldery	---	---	0	---	Moderate	Low	High
Berkshire, very bouldery	---	---	0	---	Moderate	Low	High
Sw:							
Swanton	Abrupt textural change	18-40	0	---	High	High	Moderate
TdA:							
Trout River	---	---	0	---	Low	Low	High
TdB:							
Trout River	---	---	0	---	Low	Low	High
TfB:							
Trout River, very stony	---	---	0	---	Low	Low	High
Fahey, very stony	---	---	0	---	Low	Low	High
TuD:							
Tunbridge	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Lyman	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
TwC:							
Tunbridge, rolling	Bedrock (lithic)	20-40	0	---	Moderate	High	High
Lyman, rolling	Bedrock (lithic)	10-20	0	---	Moderate	Low	High
Dawson	---	---	0	30-36	High	High	High
Ua:							
Udipsamments, smoothed.							
Ue:							
Udorthents, loamy	---	---	---	---	Moderate	---	---
Uf:							
Udorthents, clayey	---	---	---	---	High	---	---
Ug:							
Udorthents, mine waste, acid	---	---	---	---	Moderate	---	---
Uh:							
Udorthents, mine waste, nonacid	---	---	---	---	Moderate	---	---

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
Un:							
Udorthents, refuse substratum------------	---	---	---	---	Moderate	---	---
Ur:							
Urban land-------------	---	---	0	---	None	---	---
W:							
Water.							
WaA:							
Waddington-------------	---	---	0	---	Moderate	Low	Low
WaB:							
Waddington-------------	---	---	0	---	Moderate	Low	Low
WaC:							
Waddington, rolling----	---	---	0	---	Moderate	Low	Low
WaD:							
Waddington-------------	---	---	0	---	Moderate	Low	Low
WdB:							
Waddington, very cobbly sandy loam-----	---	---	0	---	Moderate	Low	Low
Wg:							
Wegatchie--------------	---	---	0	---	High	High	Low

Table 19.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro- logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
021:									
Dawson--------------------	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
Fluvaquents---------------	D	January	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		February	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		March	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		April	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		May	0.0-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		June	0.5-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		July	---	---	---	---	None	Long	Frequent
		September	---	---	---	---	None	Long	Frequent
		October	0.5-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		November	0.5-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		December	0.0-1.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
Loxley--------------------	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
023:									
Loxley--------------------	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Long	Frequent	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
023:									
Dawson	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
363A:									
Adams	A	Jan-Dec	---	---	---	---	None	---	None
363B:									
Adams	A	Jan-Dec	---	---	---	---	None	---	None
363D:									
Adams	A	Jan-Dec	---	---	---	---	None	---	None
365:									
Naumburg	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
Croghan	B	January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
376A:									
Colton	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury	A	Jan-Dec	---	---	---	---	None	---	None
Adams	A	Jan-Dec	---	---	---	---	None	---	None

Table 19.---Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
376C:									
Colton	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury	A	Jan-Dec	---	---	---	---	None	---	None
Adams	A	Jan-Dec	---	---	---	---	None	---	None
376D:									
Colton	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury	A	Jan-Dec	---	---	---	---	None	---	None
Adams	A	Jan-Dec	---	---	---	---	None	---	None
380B:									
Colton	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury	A	Jan-Dec	---	---	---	---	None	---	None
Dawson	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
380D:									
Colton	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury	A	Jan-Dec	---	---	---	---	None	---	None
Dawson	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
643C:									
Berkshire very bouldery--	B	Jan-Dec	---	---	---	---	None	---	None
643D:									
Berkshire, very bouldery--	B	Jan-Dec	---	---	---	---	None	---	None
644C:									
Berkshire, rolling, very bouldery----------------	B	Jan-Dec	---	---	---	---	None	---	None
Lyme, very bouldery-------	C	January	0.0-1.5	>6.0	---	---	None	---	None
		February	0.0-1.5	>6.0	---	---	None	---	None
		March	0.0-1.5	>6.0	---	---	None	---	None
		April	0.0-1.5	>6.0	---	---	None	---	None
		May	0.0-1.5	>6.0	---	---	None	---	None
		November	0.0-1.5	>6.0	---	---	None	---	None
		December	0.0-1.5	>6.0	---	---	None	---	None
644D:									
Berkshire, hilly, very bouldery----------------	B	Jan-Dec	---	---	---	---	None	---	None
Lyme, very bouldery-------	C	January	0.0-1.5	>6.0	---	---	None	---	None
		February	0.0-1.5	>6.0	---	---	None	---	None
		March	0.0-1.5	>6.0	---	---	None	---	None
		April	0.0-1.5	>6.0	---	---	None	---	None
		May	0.0-1.5	>6.0	---	---	None	---	None
		November	0.0-1.5	>6.0	---	---	None	---	None
		December	0.0-1.5	>6.0	---	---	None	---	None
709B:									
Adirondack, very bouldery-	D	January	0.5-1.5	1.2-3.2	---	---	None	---	None
		February	0.5-1.5	1.2-3.2	---	---	None	---	None
		March	0.5-1.5	1.2-3.2	---	---	None	---	None
		April	0.5-1.5	1.2-3.2	---	---	None	---	None
		May	0.5-1.5	1.2-3.2	---	---	None	---	None
		September	0.5-1.5	1.2-3.2	---	---	None	---	None
		October	0.5-1.5	1.2-3.2	---	---	None	---	None
		November	0.5-1.5	1.2-3.2	---	---	None	---	None
		December	0.5-1.5	1.2-3.2	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
709B:									
Tughill, very bouldery----	D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
		June	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
		November	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
		December	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
Lyme, very bouldery-------	C	January	0.0-1.5	>6.0	---	---	None	---	None
		February	0.0-1.5	>6.0	---	---	None	---	None
		March	0.0-1.5	>6.0	---	---	None	---	None
		April	0.0-1.5	>6.0	---	---	None	---	None
		May	0.0-1.5	>6.0	---	---	None	---	None
		November	0.0-1.5	>6.0	---	---	None	---	None
		December	0.0-1.5	>6.0	---	---	None	---	None
741C:									
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
Tudbridge, very bouldery--	C	Jan-Dec	---	---	---	---	None	---	None
Crary, very bouldery------	C	February	1.5-2.0	1.5-3.1	---	---	None	---	None
		March	1.5-2.0	1.5-3.1	---	---	None	---	None
		April	1.5-2.0	1.5-3.1	---	---	None	---	None
		May	1.5-2.0	1.5-3.1	---	---	None	---	None
741D:									
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
Tunbridge, very bouldery--	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
743C:									
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
743D:									
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
745C:									
Crary, very bouldery------	C	February	1.5-2.0	1.5-3.1	---	---	None	---	None
		March	1.5-2.0	1.5-3.1	---	---	None	---	None
		April	1.5-2.0	1.5-3.1	---	---	None	---	None
		May	1.5-2.0	1.5-3.1	---	---	None	---	None
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
747B:									
Crary, very bouldery------	C	February	1.5-2.0	1.5-3.1	---	---	None	---	None
		March	1.5-2.0	1.5-3.1	---	---	None	---	None
		April	1.5-2.0	1.5-3.1	---	---	None	---	None
		May	1.5-2.0	1.5-3.1	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
747B:									
Adirondack, very bouldery-	D	January	0.5-1.5	1.2-3.2	---	---	None	---	None
		February	0.5-1.5	1.2-3.2	---	---	None	---	None
		March	0.5-1.5	1.2-3.2	---	---	None	---	None
		April	0.5-1.5	1.2-3.2	---	---	None	---	None
		May	0.5-1.5	1.2-3.2	---	---	None	---	None
		September	0.5-1.5	1.2-3.2	---	---	None	---	None
		October	0.5-1.5	1.2-3.2	---	---	None	---	None
		November	0.5-1.5	1.2-3.2	---	---	None	---	None
		December	0.5-1.5	1.2-3.2	---	---	None	---	None
807:									
Udorthents, mine waste----		Jan-Dec	---	---	---	---	None	---	None
831C:									
Tunbridge, very bouldery--	C	Jan-Dec	---	---	---	---	None	---	None
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None
831D:									
Tunbridge, very bouldery--	C	Jan-Dec	---	---	---	---	None	---	None
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None
831F:									
Tunbridge, very bouldery--	C	Jan-Dec	---	---	---	---	None	---	None
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None
833C:									
Tunbridge, very bouldery--	C	Jan-Dec	---	---	---	---	None	---	None
Adirondack, very bouldery-	D	January	0.5-1.5	1.2-3.2	---	---	None	---	None
		February	0.5-1.5	1.2-3.2	---	---	None	---	None
		March	0.5-1.5	1.2-3.2	---	---	None	---	None
		April	0.5-1.5	1.2-3.2	---	---	None	---	None
		May	0.5-1.5	1.2-3.2	---	---	None	---	None
		September	0.5-1.5	1.2-3.2	---	---	None	---	None
		October	0.5-1.5	1.2-3.2	---	---	None	---	None
		November	0.5-1.5	1.2-3.2	---	---	None	---	None
		December	0.5-1.5	1.2-3.2	---	---	None	---	None
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
835C:									
Tunbridge, very bouldery--	C	Jan-Dec	---	---	---	---	None	---	None
Borosaprists--------------	---	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		July	0.0-1.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		September	0.0-1.0	>6.0	---	---	None	---	None
		October	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		November	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		December	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
Ricker, very bouldery-----	A	Jan-Dec	---	---	---	---	None	---	None
861C:									
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None
Ricker, very bouldery-----	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop, very bouldery----------------	D	Jan-Dec	---	---	---	---	None	---	None
861D:									
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None
Ricker, very bouldery-----	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop--------------	D	Jan-Dec	---	---	---	---	None	---	None
861F:									
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None
Ricker, very bouldery-----	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop--------------	D	Jan-Dec	---	---	---	---	None	---	None
891F:									
Rock outcrop--------------	D	Jan-Dec	---	---	---	---	None	---	None
Ricker, very bouldery-----	A	Jan-Dec	---	---	---	---	None	---	None
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
AaB:									
Adams, sand	A	Jan-Dec	---	---	---	---	None	---	None
AaC:									
Adams, samd	A	Jan-Dec	---	---	---	---	None	---	None
AaD:									
Adams, sand	A	Jan-Dec	---	---	---	---	None	---	None
AdB:									
Adams, loamy fine sand	A	Jan-Dec	---	---	---	---	None	---	None
AdC:									
Adams, loamy fine sand	A	Jan-Dec	---	---	---	---	None	---	None
Ak:									
Adjidaumo, silty clay	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
Am:									
Adjidaumo, mucky silty clay	D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		June	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		November	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		December	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
Ao:									
Adjidaumo, flooded	D	January	0.0	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
		February	0.0	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
		March	0.0	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
		April	0.0	>6.0	0.0-1.0	Long	Frequent	Long	Frequent
		May	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		June	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		November	0.0	>6.0	0.0-1.0	Brief	Occasional	Long	Frequent
		December	0.0	>6.0	0.0-1.0	Brief	Occasional	Long	Frequent

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Ap:									
Adjidaumo, silty clay, rocky	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
ArC:									
Adjidaumo	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
Summerville	D	Jan-Dec	---	---	---	---	None	---	None
BeB:									
Berkshire	B	Jan-Dec	---	---	---	---	None	---	None
BgC:									
Berkshire, very bouldery	B	Jan-Dec	---	---	---	---	None	---	None
Lyme, very bouldery	C	January	0.0-1.5	>6.0	---	---	None	---	None
		February	0.0-1.5	>6.0	---	---	None	---	None
		March	0.0-1.5	>6.0	---	---	None	---	None
		April	0.0-1.5	>6.0	---	---	None	---	None
		May	0.0-1.5	>6.0	---	---	None	---	None
		November	0.0-1.5	>6.0	---	---	None	---	None
		December	0.0-1.5	>6.0	---	---	None	---	None
BkC:									
Berkshire, very bouldery	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
BkC:									
Sunapee, very bouldery----	B	January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	---	None
		March	1.5-3.0	>6.0	---	---	None	---	None
		April	1.5-3.0	>6.0	---	---	None	---	None
		May	1.5-3.0	>6.0	---	---	None	---	None
		November	1.5-3.0	>6.0	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None
Bo:									
Borosaprists--------------	---	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		July	0.0-1.0	>6.0	0.0-1.0	Brief	Frequent	---	None
		September	0.0-1.0	>6.0	---	---	None	---	None
		October	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		November	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		December	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
Fluvaquents---------------	D	January	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		February	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		March	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		April	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		May	0.0-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		June	0.5-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		July	---	---	---	---	None	Long	Frequent
		September	---	---	---	---	None	Long	Frequent
		October	0.5-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		November	0.5-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		December	0.0-1.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
Ce:									
Carbondale, undrained-----	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		October	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		November	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
CgB:									
Colton-------------------	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury------------------	A	Jan-Dec	---	---	---	---	None	---	None
CgC:									
Colton-------------------	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury------------------	A	Jan-Dec	---	---	---	---	None	---	None
CgD:									
Colton-------------------	A	Jan-Dec	---	---	---	---	None	---	None
Duxbury------------------	A	Jan-Dec	---	---	---	---	None	---	None
Ck:									
Cook---------------------	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
Cn:									
Cornish------------------	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		April	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		May	0.5-2.0	>6.0	---	---	None	Brief	Frequent
		June	---	---	---	---	None	Brief	Frequent
		July	---	---	---	---	None	Brief	Frequent
		August	---	---	---	---	None	Brief	Frequent
		September	---	---	---	---	None	Brief	Frequent
		October	---	---	---	---	None	Brief	Frequent
		November	1.0-2.0	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
Cp:									
Coveytown----------------	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Cr:									
Coveytown, very stony-----	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
Cr:									
Cook, very stony----------	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
CsB:									
Crary---------------------	C	February	1.5-2.0	1.5-3.1	---	---	None	---	None
		March	1.5-2.0	1.5-3.1	---	---	None	---	None
		April	1.5-2.0	1.5-3.1	---	---	None	---	None
		May	1.5-2.0	1.5-3.1	---	---	None	---	None
CtB:									
Crary, very bouldery------	C	February	1.5-2.0	1.5-3.1	---	---	None	---	None
		March	1.5-2.0	1.5-3.1	---	---	None	---	None
		April	1.5-2.0	1.5-3.1	---	---	None	---	None
		May	1.5-2.0	1.5-3.1	---	---	None	---	None
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
CuB:									
Croghan, sand-------------	B	January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
CvA:									
Croghan, loamy fine sand--	B	January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
CvB:									
Croghan, loamy fine sand--	B	January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
Da:									
Dawson--------------------	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
DAM:									
Large dams----------------	---	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Dd:									
Deford, loamy fine sand---	A/D	January	0.0	>6.0	---	---	None	---	None
		February	0.0	>6.0	---	---	None	---	None
		March	0.0	>6.0	---	---	None	---	None
		April	0.0	>6.0	---	---	None	---	None
		May	0.5-1.0	>6.0	---	---	None	---	None
		October	0.5-1.0	>6.0	---	---	None	---	None
		November	0.5-1.0	>6.0	---	---	None	---	None
		December	0.5-1.0	>6.0	---	---	None	---	None
Df:									
Deford, mucky loamy fine sand---------------------	A/D	January	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
		February	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
		October	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		November	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		December	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
DpA:									
Depeyster-----------------	C	March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
DpB:									
Depeyster-----------------	C	March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
DpC:									
Depeyster-----------------	C	March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
Dr:									
Dorval--------------------	A/D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Long	Frequent	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Du:									
Dune land-----------------	A	Jan-Dec	---	---	---	---	None	---	None
EeB:									
Eelweir-------------------	C	January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
EmA:									
Elmwood-------------------	C	January	1.5-3.0	1.5-3.3	---	---	None	---	None
		February	1.5-3.0	1.5-3.3	---	---	None	---	None
		March	1.5-3.0	1.5-3.3	---	---	None	---	None
		April	1.5-3.0	1.5-3.3	---	---	None	---	None
		May	1.5-3.0	1.5-3.3	---	---	None	---	None
		November	1.5-3.0	1.5-3.3	---	---	None	---	None
		December	1.5-3.0	1.5-3.3	---	---	None	---	None
EmB:									
Elmwood-------------------	C	January	1.5-3.0	1.5-3.3	---	---	None	---	None
		February	1.5-3.0	1.5-3.3	---	---	None	---	None
		March	1.5-3.0	1.5-3.3	---	---	None	---	None
		April	1.5-3.0	1.5-3.3	---	---	None	---	None
		May	1.5-3.0	1.5-3.3	---	---	None	---	None
		November	1.5-3.0	1.5-3.3	---	---	None	---	None
		December	1.5-3.0	1.5-3.3	---	---	None	---	None
Fa:									
Fahey---------------------	B	March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
FkA:									
Flackville----------------	C	January	1.5-2.0	1.7-3.3	---	---	None	---	None
		February	1.5-2.0	1.7-3.3	---	---	None	---	None
		March	1.5-2.0	1.7-3.3	---	---	None	---	None
		April	1.5-2.0	1.7-3.3	---	---	None	---	None
		May	1.5-2.0	1.7-3.3	---	---	None	---	None
		November	1.5-2.0	1.7-3.3	---	---	None	---	None
		December	1.5-2.0	1.6-3.3	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
FkB:									
Flackville	C	January	1.5-2.0	1.7-3.3	---	---	None	---	None
		February	1.5-2.0	1.7-3.3	---	---	None	---	None
		March	1.5-2.0	1.7-3.3	---	---	None	---	None
		April	1.5-2.0	1.7-3.3	---	---	None	---	None
		May	1.5-2.0	1.7-3.3	---	---	None	---	None
		November	1.5-2.0	1.7-3.3	---	---	None	---	None
		December	1.5-2.0	1.7-3.3	---	---	None	---	None
Fu:									
Fluvaquents, frequently flooded	D	January	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		February	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		March	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		April	0.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		May	0.0-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		June	0.0-1.5	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
		July	---	---	---	---	None	Brief	Frequent
		September	---	---	---	---	None	Brief	Frequent
		October	0.0-1.5	>6.0	0.0-0.5	Brief	Occasional	Brief	Frequent
		November	0.0-1.5	>6.0	0.0-0.5	Brief	Occasional	Brief	Frequent
		December	0.0-1.0	>6.0	0.0-0.5	Brief	Occasional	Long	Frequent
Udifluvents, frequently flooded	B	January	1.5-6.0	>6.0	---	---	None	Brief	Frequent
		February	1.5-6.0	>6.0	---	---	None	Brief	Frequent
		March	1.5-6.0	>6.0	---	---	None	Brief	Frequent
		April	1.5-6.0	>6.0	---	---	None	Brief	Frequent
		May	1.5-6.0	>6.0	---	---	None	Brief	Frequent
		June	---	---	---	---	None	Brief	Frequent
		October	---	---	---	---	None	Brief	Frequent
		November	1.5-6.0	>6.0	---	---	None	Brief	Frequent
		December	1.5-6.0	>6.0	---	---	None	Brief	Frequent
GrB:									
Grenville	B	Jan-Dec	---	---	---	---	None	---	None
GrC:									
Grenville	B	Jan-Dec	---	---	---	---	None	---	None
GsD:									
Grenville, very stony	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Gu:									
Guff----------------------	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
HaA:									
Hailesvoro----------------	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	0.5-1.5	>6.0	---	---	None	---	None
		October	0.5-1.5	>6.0	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
HaB:									
Hailesboro----------------	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	0.5-1.5	>6.0	---	---	None	---	None
		October	0.5-1.5	>6.0	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
Hc:									
Hannawa-------------------	D	January	0.0-1.0	0.8-1.7	---	---	None	---	None
		February	0.0-1.0	0.8-1.7	---	---	None	---	None
		March	0.0-1.0	0.8-1.7	---	---	None	---	None
		April	0.0-1.0	0.8-1.7	---	---	None	---	None
		May	0.0-1.0	0.8-1.7	---	---	None	---	None
		October	0.0-1.0	0.8-1.7	---	---	None	---	None
		November	0.0-1.0	0.8-1.7	---	---	None	---	None
		December	0.0-1.0	0.8-1.7	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
HeB:									
Heuvelton	C	January	1.5-2.0	1.6-3.3	---	---	None	---	None
		February	1.5-2.0	1.6-3.3	---	---	None	---	None
		March	1.5-2.0	1.6-3.3	---	---	None	---	None
		April	1.5-2.0	1.6-3.3	---	---	None	---	None
		November	1.5-2.0	1.6-3.3	---	---	None	---	None
		December	1.5-2.0	1.6-3.3	---	---	None	---	None
HeC:									
Heuvelton, rolling	C	January	1.5-2.0	1.6-3.3	---	---	None	---	None
		February	1.5-2.0	1.6-3.3	---	---	None	---	None
		March	1.5-2.0	1.6-3.3	---	---	None	---	None
		April	1.5-2.0	1.6-3.3	---	---	None	---	None
		November	1.5-2.0	1.6-3.3	---	---	None	---	None
		December	1.5-2.0	1.6-3.3	---	---	None	---	None
HkE:									
Heuvelton	C	January	1.5-2.0	1.6-3.3	---	---	None	---	None
		February	1.5-2.0	1.6-3.3	---	---	None	---	None
		March	1.5-2.0	1.6-3.3	---	---	None	---	None
		April	1.5-2.0	1.6-3.3	---	---	None	---	None
		November	1.5-2.0	1.6-3.3	---	---	None	---	None
		December	1.5-2.0	1.6-3.3	---	---	None	---	None
Depeyster	C	March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
HnA:									
Hogansbury	B	March	1.5-2.0	1.5-2.8	---	---	None	---	None
		April	1.5-2.0	1.5-2.8	---	---	None	---	None
		May	1.5-2.0	1.5-2.8	---	---	None	---	None
HnB:									
Hogansbury	B	March	1.5-2.0	1.5-2.8	---	---	None	---	None
		April	1.5-2.0	1.5-2.8	---	---	None	---	None
		May	1.5-2.0	1.5-2.8	---	---	None	---	None
HrB:									
Hogansbury, very stony	B	March	1.5-2.0	1.5-2.8	---	---	None	---	None
		April	1.5-2.0	1.5-2.8	---	---	None	---	None
		May	1.5-2.0	1.5-2.8	---	---	None	---	None
Grenville, very stony	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
IaB:									
Insula	D	Jan-Dec	---	---	---	---	None	---	None
InB:									
Insula	D	Jan-Dec	---	---	---	---	None	---	None
Insula, rolling	D	Jan-Dec	---	---	---	---	None	---	None
IrC:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
IrD:									
Insula, hilly	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
KaA:									
Kalurah	B	January	1.5-2.0	2.5-4.2	---	---	None	---	None
		February	1.5-2.0	2.5-4.2	---	---	None	---	None
		March	1.5-2.0	2.5-4.2	---	---	None	---	None
		April	1.5-2.0	2.5-4.2	---	---	None	---	None
		May	1.5-2.0	2.5-4.2	---	---	None	---	None
		November	1.5-2.0	2.5-4.2	---	---	None	---	None
		December	1.5-2.0	2.5-4.2	---	---	None	---	None
KaB:									
Kalurah	B	January	1.5-2.0	2.5-4.2	---	---	None	---	None
		February	1.5-2.0	2.5-4.2	---	---	None	---	None
		March	1.5-2.0	2.5-4.2	---	---	None	---	None
		April	1.5-2.0	2.5-4.2	---	---	None	---	None
		May	1.5-2.0	2.5-4.2	---	---	None	---	None
		November	1.5-2.0	2.5-4.2	---	---	None	---	None
		December	1.5-2.0	2.5-4.2	---	---	None	---	None
KbB:									
Kalurah, very stony	B	January	1.5-2.0	2.5-4.2	---	---	None	---	None
		February	1.5-2.0	2.5-4.2	---	---	None	---	None
		March	1.5-2.0	2.5-4.2	---	---	None	---	None
		April	1.5-2.0	2.5-4.2	---	---	None	---	None
		May	1.5-2.0	2.5-4.2	---	---	None	---	None
		November	1.5-2.0	2.5-4.2	---	---	None	---	None
		December	1.5-2.0	2.5-4.2	---	---	None	---	None
Pyrities, very stony	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Lc:									
Lovewell------------------	B	January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	---	None
		March	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		April	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		May	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		June	---	---	---	---	None	Brief	Occasional
		July	---	---	---	---	None	Brief	Occasional
		August	---	---	---	---	None	Brief	Occasional
		September	---	---	---	---	None	Brief	Occasional
		October	---	---	---	---	None	Brief	Occasional
		November	1.5-3.0	>6.0	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None
Ld:									
Loxley--------------------	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
LeC:									
Lyman---------------------	C/D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop--------------	D	Jan-Dec	---	---	---	---	None	---	None
LeD:									
Lyman, very bouldery------	C/D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop--------------	D	Jan-Dec	---	---	---	---	None	---	None
Lt:									
Lyme, very bouldery-------	C	January	0.0-1.5	>6.0	---	---	None	---	None
		February	0.0-1.5	>6.0	---	---	None	---	None
		March	0.0-1.5	>6.0	---	---	None	---	None
		April	0.0-1.5	>6.0	---	---	None	---	None
		May	0.0-1.5	>6.0	---	---	None	---	None
		November	0.0-1.5	>6.0	---	---	None	---	None
		December	0.0-1.5	>6.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Lt:									
Tughill, very bouldery----	D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Occasional	---	None
		June	0.0-0.5	>6.0	0.0-1.0	Long	Occasional	---	None
		November	0.0-0.5	>6.0	0.0-1.0	Long	Occasional	---	None
		December	0.0-0.5	>6.0	0.0-1.0	Long	Occasional	---	None
MaA:									
Malone--------------------	C	January	0.5-1.5	1.5-3.0	---	---	None	---	None
		February	0.5-1.5	1.5-3.0	---	---	None	---	None
		March	0.5-1.5	1.5-3.0	---	---	None	---	None
		April	0.5-1.5	1.5-3.0	---	---	None	---	None
		May	0.5-1.5	1.5-3.0	---	---	None	---	None
		October	0.5-1.5	1.5-3.0	---	---	None	---	None
		November	0.5-1.5	1.5-3.0	---	---	None	---	None
		December	0.5-1.5	1.5-3.0	---	---	None	---	None
MaB:									
Malone--------------------	C	January	0.5-1.5	1.5-3.0	---	---	None	---	None
		February	0.5-1.5	1.5-3.0	---	---	None	---	None
		March	0.5-1.5	1.5-3.0	---	---	None	---	None
		April	0.5-1.5	1.5-3.0	---	---	None	---	None
		May	0.5-1.5	1.5-3.0	---	---	None	---	None
		October	0.5-1.5	1.5-3.0	---	---	None	---	None
		November	0.5-1.5	1.5-3.0	---	---	None	---	None
		December	0.5-1.5	1.5-3.0	---	---	None	---	None
MbB:									
Malone, very stony--------	C	January	0.5-1.5	1.5-3.0	---	---	None	---	None
		February	0.5-1.5	1.5-3.0	---	---	None	---	None
		March	0.5-1.5	1.5-3.0	---	---	None	---	None
		April	0.5-1.5	1.5-3.0	---	---	None	---	None
		May	0.5-1.5	1.5-3.0	---	---	None	---	None
		October	0.5-1.5	1.5-3.0	---	---	None	---	None
		November	0.5-1.5	1.5-3.0	---	---	None	---	None
		December	0.5-1.5	1.5-3.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
MdB:									
Malone, undulating--------	C	January	0.5-1.5	1.5-3.0	---	---	None	---	None
		February	0.5-1.5	1.5-3.0	---	---	None	---	None
		March	0.5-1.5	1.5-3.0	---	---	None	---	None
		April	0.5-1.5	1.5-3.0	---	---	None	---	None
		May	0.5-1.5	1.5-3.0	---	---	None	---	None
		October	0.5-1.5	1.5-3.0	---	---	None	---	None
		November	0.5-1.5	1.5-3.0	---	---	None	---	None
		December	0.5-1.5	1.5-3.0	---	---	None	---	None
Adjidaumo-----------------	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
MeB:									
Malone, very stony--------	C	January	0.5-1.5	1.5-3.0	---	---	None	---	None
		February	0.5-1.5	1.5-3.0	---	---	None	---	None
		March	0.5-1.5	1.5-3.0	---	---	None	---	None
		April	0.5-1.5	1.5-3.0	---	---	None	---	None
		May	0.5-1.5	1.5-3.0	---	---	None	---	None
		October	0.5-1.5	1.5-3.0	---	---	None	---	None
		November	0.5-1.5	1.5-3.0	---	---	None	---	None
		December	0.5-1.5	1.5-3.0	---	---	None	---	None
Adjidaumo-----------------	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
MfA:									
Matoon--------------------	D	January	0.5-1.5	1.6-3.3	---	---	None	---	None
		February	0.5-1.5	1.6-3.3	---	---	None	---	None
		March	0.5-1.5	1.6-3.3	---	---	None	---	None
		April	0.5-1.5	1.6-3.3	---	---	None	---	None
		May	0.5-1.5	1.6-3.3	---	---	None	---	None
		November	0.5-1.5	1.6-3.3	---	---	None	---	None
		December	0.5-1.5	1.6-3.3	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
MfB:									
Matoon-------------------	D	January	0.5-1.5	1.6-3.3	---	---	None	---	None
		February	0.5-1.5	1.6-3.3	---	---	None	---	None
		March	0.5-1.5	1.6-3.3	---	---	None	---	None
		April	0.5-1.5	1.6-3.3	---	---	None	---	None
		May	0.5-1.5	1.6-3.3	---	---	None	---	None
		November	0.5-1.5	1.6-3.3	---	---	None	---	None
		December	0.5-1.5	1.6-3.3	---	---	None	---	None
Mh:									
Mino---------------------	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
Mn:									
Manuscong----------------	B/D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		November	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		December	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
MsA:									
Muskellunge--------------	D	January	0.5-1.5	1.6-3.3	---	---	None	---	None
		February	0.5-1.5	1.6-3.3	---	---	None	---	None
		March	0.5-1.5	1.6-3.3	---	---	None	---	None
		April	0.5-1.5	1.6-3.3	---	---	None	---	None
		May	0.5-1.5	1.6-3.3	---	---	None	---	None
MsB:									
Muskellunge--------------	D	January	0.5-1.5	1.6-3.3	---	---	None	---	None
		February	0.5-1.5	1.6-3.3	---	---	None	---	None
		March	0.5-1.5	1.6-3.3	---	---	None	---	None
		April	0.5-1.5	1.6-3.3	---	---	None	---	None
		May	0.5-1.5	1.6-3.3	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
MuB:									
Muskellunge	D	January	0.5-1.5	1.6-3.3	---	---	None	---	None
		February	0.5-1.5	1.6-3.3	---	---	None	---	None
		March	0.5-1.5	1.6-3.3	---	---	None	---	None
		April	0.5-1.5	1.6-3.3	---	---	None	---	None
		May	0.5-1.5	1.6-3.3	---	---	None	---	None
MwB:									
Muskellunge, undulating	D	January	0.5-1.5	1.6-3.3	---	---	None	---	None
		February	0.5-1.5	1.6-3.3	---	---	None	---	None
		March	0.5-1.5	1.6-3.3	---	---	None	---	None
		April	0.5-1.5	1.6-3.3	---	---	None	---	None
		May	0.5-1.5	1.6-3.3	---	---	None	---	None
Adjidaumo	D	January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
Na:									
Naumburg	C	January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
NhA:									
Nehasne	B	Jan-Dec	---	---	---	---	None	---	None
NhB:									
Nehasne	B	Jan-Dec	---	---	---	---	None	---	None
NhC:									
Nehasne	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
NoA:									
Nicholville	C	January	1.5-2.0	1.7-3.1	---	---	None	---	None
		February	1.5-2.0	1.7-3.1	---	---	None	---	None
		March	1.5-2.0	1.7-3.1	---	---	None	---	None
		April	1.5-2.0	1.7-3.1	---	---	None	---	None
		May	1.5-2.0	1.7-3.1	---	---	None	---	None
		November	1.5-2.0	1.7-3.1	---	---	None	---	None
		December	1.5-2.0	1.7-3.1	---	---	None	---	None
NoB:									
Nicholville	C	January	1.5-2.0	1.7-3.1	---	---	None	---	None
		February	1.5-2.0	1.7-3.1	---	---	None	---	None
		March	1.5-2.0	1.7-3.1	---	---	None	---	None
		April	1.5-2.0	1.7-3.1	---	---	None	---	None
		May	1.5-2.0	1.7-3.1	---	---	None	---	None
		November	1.5-2.0	1.7-3.1	---	---	None	---	None
		December	1.5-2.0	1.7-3.1	---	---	None	---	None
NoC:									
Nicholville, rolling	C	January	1.5-2.0	1.7-3.1	---	---	None	---	None
		February	1.5-2.0	1.7-3.1	---	---	None	---	None
		March	1.5-2.0	1.7-3.1	---	---	None	---	None
		April	1.5-2.0	1.7-3.1	---	---	None	---	None
		May	1.5-2.0	1.7-3.1	---	---	None	---	None
		November	1.5-2.0	1.7-3.1	---	---	None	---	None
		December	1.5-2.0	1.7-3.1	---	---	None	---	None
NrB:									
Nicholville	C	January	1.5-2.0	1.7-3.1	---	---	None	---	None
		February	1.5-2.0	1.7-3.1	---	---	None	---	None
		March	1.5-2.0	1.7-3.1	---	---	None	---	None
		April	1.5-2.0	1.7-3.1	---	---	None	---	None
		May	1.5-2.0	1.7-3.1	---	---	None	---	None
		November	1.5-2.0	1.7-3.1	---	---	None	---	None
		December	1.5-2.0	1.7-3.1	---	---	None	---	None
OgA:									
Ogdensburg	C	January	0.5-1.5	1.4-3.3	---	---	None	---	None
		February	0.5-1.5	1.4-3.3	---	---	None	---	None
		March	0.5-1.5	1.4-3.3	---	---	None	---	None
		April	0.5-1.5	1.4-3.3	---	---	None	---	None
		May	0.5-1.5	1.4-3.3	---	---	None	---	None
		November	0.5-1.5	1.4-3.3	---	---	None	---	None
		December	0.5-1.5	1.4-3.3	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
OgB:									
Ogdensburg	C	January	0.5-1.5	1.4-3.3	---	---	None	---	None
		February	0.5-1.5	1.4-3.3	---	---	None	---	None
		March	0.5-1.5	1.4-3.3	---	---	None	---	None
		April	0.5-1.5	1.4-3.3	---	---	None	---	None
		May	0.5-1.5	1.4-3.3	---	---	None	---	None
		November	0.5-1.5	1.4-3.3	---	---	None	---	None
		December	0.5-1.5	1.4-3.3	---	---	None	---	None
Pg:									
Pits, gravel and sand	A	Jan-Dec	---	---	---	---	None	---	None
Ph:									
Pits, quarry	---	Jan-Dec	---	---	---	---	None	---	None
PmC:									
Potsdam	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
PoC:									
Potsdam, very bouldery	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
Tunbridge, very bouldery	C	Jan-Dec	---	---	---	---	None	---	None
PoD:									
Potsdam, very bouldery	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
Tunbridge, very bouldery	C	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
PpD:									
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
Berkshire, very bouldery--	B	Jan-Dec	---	---	---	---	None	---	None
PsC:									
Potsdam, very bouldery----	C	January	2.0-3.0	2.5-3.3	---	---	None	---	None
		February	2.0-3.0	2.5-3.3	---	---	None	---	None
		March	2.0-3.0	2.5-3.3	---	---	None	---	None
		April	2.0-3.0	2.5-3.3	---	---	None	---	None
		May	2.0-3.0	2.5-3.3	---	---	None	---	None
		November	2.0-3.0	2.5-3.3	---	---	None	---	None
		December	2.0-3.0	2.5-3.3	---	---	None	---	None
Crary, very bouldery------	C	February	1.5-2.0	1.5-3.1	---	---	None	---	None
		March	1.5-2.0	1.5-3.1	---	---	None	---	None
		April	1.5-2.0	1.5-3.1	---	---	None	---	None
		May	1.5-2.0	1.5-3.1	---	---	None	---	None
PvB:									
Pyrites-------------------	B	Jan-Dec	---	---	---	---	None	---	None
PvC:									
Pyrites-------------------	B	Jan-Dec	---	---	---	---	None	---	None
PxD:									
Pyrites, very stony-------	B	Jan-Dec	---	---	---	---	None	---	None
PyB:									
Pyrites, rocky------------	B	Jan-Dec	---	---	---	---	None	---	None
PyC:									
Pyrites, rocky------------	B	Jan-Dec	---	---	---	---	None	---	None
PzC:									
Pyrites, very stony-------	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
QwB:									
Quetico	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Insula	D	Jan-Dec	---	---	---	---	None	---	None
RaA:									
Raquette	B	Jan-Dec	---	---	---	---	None	---	None
RaB:									
Raquette	B	Jan-Dec	---	---	---	---	None	---	None
RaC:									
Raquette	B	Jan-Dec	---	---	---	---	None	---	None
Rd:									
Redwater	B	January	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		February	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		March	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		April	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		May	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		November	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		December	0.5-1.5	>6.0	---	---	None	Brief	Frequent
RoA:									
Roundabout	C	January	0.0-1.0	>6.0	---	---	None	---	None
		February	0.0-1.0	>6.0	---	---	None	---	None
		March	0.0-1.0	>6.0	---	---	None	---	None
		April	0.0-1.0	>6.0	---	---	None	---	None
		May	0.0-1.0	>6.0	---	---	None	---	None
		November	0.0-1.0	>6.0	---	---	None	---	None
		December	0.0-1.0	>6.0	---	---	None	---	None
RoB:									
Roundabout	C	January	0.0-1.0	>6.0	---	---	None	---	None
		February	0.0-1.0	>6.0	---	---	None	---	None
		March	0.0-1.0	>6.0	---	---	None	---	None
		April	0.0-1.0	>6.0	---	---	None	---	None
		May	0.0-1.0	>6.0	---	---	None	---	None
		November	0.0-1.0	>6.0	---	---	None	---	None
		December	0.0-1.0	>6.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Rt:									
Runeberk------------------	C/D	January	0.5-1.0	2.0-3.0	---	---	None	---	None
		February	0.5-1.0	2.0-3.0	---	---	None	---	None
		March	0.5-1.0	2.0-3.0	---	---	None	---	None
		April	0.5-1.0	2.0-3.0	---	---	None	---	None
		May	0.5-1.0	2.0-3.0	---	---	None	---	None
		June	0.5-1.0	2.0-3.0	---	---	None	---	None
		July	0.5-1.0	2.0-3.0	---	---	None	---	None
		November	0.5-1.0	2.0-3.0	---	---	None	---	None
		December	0.5-1.0	2.0-3.0	---	---	None	---	None
Ru:									
Runebery, very stony------	C/D	January	0.5-1.0	2.0-3.0	---	---	None	---	None
		February	0.5-1.0	2.0-3.0	---	---	None	---	None
		March	0.5-1.0	2.0-3.0	---	---	None	---	None
		April	0.5-1.0	2.0-3.0	---	---	None	---	None
		May	0.5-1.0	2.0-3.0	---	---	None	---	None
		June	0.5-1.0	2.0-3.0	---	---	None	---	None
		July	0.5-1.0	2.0-3.0	---	---	None	---	None
		November	0.5-1.0	2.0-3.0	---	---	None	---	None
		December	0.5-1.0	2.0-3.0	---	---	None	---	None
SaB:									
Salmon--------------------	B	Jan-Dec	---	---	---	---	None	---	None
SaC:									
Salmon, rolling-----------	B	Jan-Dec	---	---	---	---	None	---	None
Se:									
Searsport-----------------	D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		June	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		July	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		September	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		October	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		November	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	---	None
		December	0.0-1.0	>6.0	0.0-1.0	Long	Frequent	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Sg:									
Stockholm	C	January	0.0-1.0	1.4-3.2	---	---	None	---	None
		February	0.0-1.0	1.4-3.2	---	---	None	---	None
		March	0.0-1.0	1.4-3.2	---	---	None	---	None
		April	0.0-1.0	1.4-3.2	---	---	None	---	None
		May	0.0-1.0	1.4-3.2	---	---	None	---	None
		November	0.0-1.0	1.4-3.2	---	---	None	---	None
		December	0.0-1.0	1.4-3.2	---	---	None	---	None
ShB:									
Summerville	D	Jan-Dec	---	---	---	---	None	---	None
SkB:									
Summerville, rocky	D	Jan-Dec	---	---	---	---	None	---	None
Gouverneur	D	Jan-Dec	---	---	---	---	None	---	None
SlD:									
Summerville, hilly	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
SmC:									
Summerville, rolling	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Nehasne, rolling	B	Jan-Dec	---	---	---	---	None	---	None
SpB:									
Sunapee	B	January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	---	None
		March	1.5-3.0	>6.0	---	---	None	---	None
		April	1.5-3.0	>6.0	---	---	None	---	None
		May	1.5-3.0	>6.0	---	---	None	---	None
		November	1.5-3.0	>6.0	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
SsB:									
Sunapee, very bouldery----	B	January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	---	None
		March	1.5-3.0	>6.0	---	---	None	---	None
		April	1.5-3.0	>6.0	---	---	None	---	None
		May	1.5-3.0	>6.0	---	---	None	---	None
		November	1.5-3.0	>6.0	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None
Berkshire, very bouldery--	B	Jan-Dec	---	---	---	---	None	---	None
Sw:									
Swanton-------------------	C/D	January	0.0-1.5	>6.0	---	---	None	---	None
		February	0.0-1.5	>6.0	---	---	None	---	None
		March	0.0-1.5	>6.0	---	---	None	---	None
		April	0.0-1.5	>6.0	---	---	None	---	None
		May	0.0-1.5	>6.0	---	---	None	---	None
		November	0.0-1.5	>6.0	---	---	None	---	None
		December	0.0-1.5	>6.0	---	---	None	---	None
TdA:									
Trout River---------------	A	Jan-Dec	---	---	---	---	None	---	None
TdB:									
Trout River---------------	A	Jan-Dec	---	---	---	---	None	---	None
TfB:									
Trout River, very stony---	A	Jan-Dec	---	---	---	---	None	---	None
Fahey, very stony---------	B	March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
TuD:									
Tunbridge-----------------	C	Jan-Dec	---	---	---	---	None	---	None
Lyman---------------------	C/D	Jan-Dec	---	---	---	---	None	---	None
TwC:									
Tunbridge, rolling--------	C	Jan-Dec	---	---	---	---	None	---	None
Lyman, rolling------------	C/D	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
TwC:									
Dawson-------------------	A/D	January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
Ua:									
Udipsamments, smoothed----	---	January	1.5-6.0	>6.0	---	---	None	---	None
		February	1.5-6.0	>6.0	---	---	None	---	None
		March	1.5-6.0	>6.0	---	---	None	---	None
		April	1.5-6.0	>6.0	---	---	None	---	None
		May	1.5-6.0	>6.0	---	---	None	---	None
		November	1.5-6.0	>6.0	---	---	None	---	None
		December	1.5-6.0	>6.0	---	---	None	---	None
Ue:									
Udorthents, loamy---------	---	January	2.0-6.0	>6.0	---	---	None	---	None
		February	2.0-6.0	>6.0	---	---	None	---	None
		March	2.0-6.0	>6.0	---	---	None	---	None
		April	2.0-6.0	>6.0	---	---	None	---	None
		May	2.0-6.0	>6.0	---	---	None	---	None
		November	2.0-6.0	>6.0	---	---	None	---	None
		December	2.0-6.0	>6.0	---	---	None	---	None
Uf:									
Udorthents, clayey--------	---	January	2.0-6.0	>6.0	---	---	None	---	None
		February	2.0-6.0	>6.0	---	---	None	---	None
		March	2.0-6.0	>6.0	---	---	None	---	None
		April	2.0-6.0	>6.0	---	---	None	---	None
		May	2.0-6.0	>6.0	---	---	None	---	None
		November	2.0-6.0	>6.0	---	---	None	---	None
		December	2.0-6.0	>6.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Ug:									
Udorthents, mine waste, acid	---	January	2.0-6.0	>6.0	---	---	None	---	None
		February	2.0-6.0	>6.0	---	---	None	---	None
		March	2.0-6.0	>6.0	---	---	None	---	None
		April	2.0-6.0	>6.0	---	---	None	---	None
		May	2.0-6.0	>6.0	---	---	None	---	None
		November	2.0-6.0	>6.0	---	---	None	---	None
		December	2.0-6.0	>6.0	---	---	None	---	None
Uh:									
Udorthents, mine waste, nonacid	---	January	2.0-6.0	>6.0	---	---	None	---	None
		February	2.0-6.0	>6.0	---	---	None	---	None
		March	2.0-6.0	>6.0	---	---	None	---	None
		April	2.0-6.0	>6.0	---	---	None	---	None
		May	2.0-6.0	>6.0	---	---	None	---	None
		November	2.0-6.0	>6.0	---	---	None	---	None
		December	2.0-6.0	>6.0	---	---	None	---	None
Un:									
Udorthents, refuse substratum	---	Jan-Dec	---	---	---	---	None	---	None
Ur:									
Urban land	---	Jan-Dec	---	---	---	---	None	---	None
W:									
Water.									
WaA:									
Waddington	A	Jan-Dec	---	---	---	---	None	---	None
WaB:									
Waddington	A	Jan-Dec	---	---	---	---	None	---	None
WaC:									
Waddington, rolling	A	Jan-Dec	---	---	---	---	None	---	None
WaD:									
Waddington	A	Jan-Dec	---	---	---	---	None	---	None
WdB:									
Waddington, very cobbly sandy loam	A	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Wg:									
Wegatchie-----------------	D	January	0.0-1.0	>6.0	---	---	None	---	None
		February	0.0-1.0	>6.0	---	---	None	---	None
		March	0.0-1.0	>6.0	---	---	None	---	None
		April	0.0-1.0	>6.0	---	---	None	---	None
		May	0.0-1.0	>6.0	---	---	None	---	None
		June	0.0-1.0	>6.0	---	---	None	---	None
		November	0.0-1.0	>6.0	---	---	None	---	None
		December	0.0-1.0	>6.0	---	---	None	---	None

Table 20.--Engineering Index Test Data

(Dashes indicate that data were not available. LL means liquid limit; PI, plasticity index; MD, maximum dry density; OM, optimum moisture; LS, linear shrinkage; and NP, nonplastic.)

Soil name*, report number, horizon, and depth in inches	Classification		Grain-size distribution													LL	PI	Moisture density		LS
				Percentage passing sieve--									Percentage smaller than--							
	AASHTO	Unified	>3 inch fraction	2 inch	1 inch	3/4 inch	3/8 inch	No. 4	No. 10	No. 40	No. 60	No. 200	.02 mm	.005 mm	.002 mm	LL	PI	MD	OM	LS
			Pct													Pct		Lb/ cu ft	Pct	Pct
Croghan sand: (S81NY-089-31)																				
Ap ------- 0 to 7	A-3	SW	0	---	---	---	100	99.9	99.5	88.9	40.8	7.3	---	---	---	---	NP	107.7	14.3	---
E -------- 7 to 10	A-3	SP	0	---	---	---	100	99.8	99.5	89.7	35.8	5.9	---	---	---	---	NP	106.0	13.7	---
Bh ------ 10 to 12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bs1 ----- 12 to 20	A-3	SP	0	---	---	---	---	100	99.9	86.4	25.4	6.2	---	---	---	---	NP	107.3	16.2	---
Bs2 ----- 20 to 33	A-3	SP	0	---	---	---	100	99.9	99.8	74.8	15.1	2.9	---	---	---	---	NP	106.8	15.5	---
BC ------ 33 to 44	A-3	SP	0	---	---	---	---	---	100	97.8	69.6	2.0	---	---	---	---	NP	104.4	15.9	---
C ------- 44 to 60	A-3	SP	0	---	---	---	---	---	100	99.2	68.8	1.3	---	---	---	---	NP	104.1	14.7	---
Depeyster silt loam: (S81NY-089-8)																				
Ap ------- 0 to 10	A-4	ML-CL	0	---	---	100	99.8	99.6	99.3	97.3	94.6	86.5	53.3	29.5	13.8	33.3	24.5	100.8	20.9	6.0
Bt1 ----- 10 to 20	A-6	CL	0	---	100	---	---	100	99.8	99.3	98.9	96.2	61.8	41.4	27.5	31.3	19.9	102.7	22.4	7.0
Bt2 ----- 20 to 27	A-6	CL	0	---	---	---	100	99.9	99.9	99.4	98.7	93.0	56.2	35.3	25.3	33.3	19.2	103.1	21.3	8.0
BC ------ 27 to 39	A-4	CL	0	---	---	99.9	99.8	99.8	99.8	99.0	97.9	90.5	51.4	28.8	18.7	27.4	17.9	108.4	18.9	7.0
C ------ 38 to 60	A-4	ML-CL	0	---	---	100	99.9	99.6	99.5	98.5	97.2	88.4	41.9	19.1	10.6	24.4	17.9	110.8	17.3	4.0
Hannawa loam: (S81NY-089-23)																				
Ap ------- 0 to 8	A-4	SM	0	100	97.7	97.3	96.0	94.1	91.1	82.2	73.1	49.5	19.3	8.3	5.1	---	NP	93.4	46.6	2.0
Bw ------- 8 to 14	A-4	SM	0	99	97.2	96.4	93.5	90.5	85.8	74.0	63.3	39.6	15.3	7.8	4.8	---	NP	122.6	26.8	2.0
BC ------ 14 to 19	A-4	SM	0	99	97.2	96.4	93.5	90.5	85.7	74.0	63.2	39.6	15.3	7.8	4.8	---	NP	122.6	26.8	2.0
Hogansburg fine sandy loam: (S81NY-089-42)																				
Ap ------- 0 to 10	A-4	SM	0	97.0	96.5	96.2	95.4	93.7	91.7	85.5	76.2	49.0	17.4	6.7	4.0	---	NP	99.9	19.9	2.0
Bw1 ----- 10 to 15	A-4	ML	0	98.9	98.3	98.1	97.4	96.4	95.4	90.2	84.1	61.1	24.6	10.3	5.9	---	NP	133.5	14.4	2.0
Bw2 ----- 15 to 25	A-4	ML	0	100	97.9	97.4	95.8	93.9	92.1	85.9	80.7	65.0	26.4	14.7	8.9	22.0	NP	116.2	13.9	4.0
C1 ------ 25 to 38	A-2-4	SM	0	92.7	84.6	82.7	78.0	72.9	66.1	56.3	51.2	35.1	14.5	6.9	3.8	---	NP	133.5	8.0	2.0
C2 ------ 38 to 60	A-4	SM	0	91.8	87.5	85.6	80.1	74.4	66.9	56.3	50.8	35.6	15.4	7.4	4.1	---	NP	135.8	7.2	2.0

See footnote at end of table.

Table 20.--Engineering Index Test Data--Continued

Soil name*, report number, horizon, and depth in inches	Classification			Grain-size distribution														Moisture density		
			>3 inch frac- tion	Percentage passing sieve--									Percentage smaller than--							
	AASHTO	Uni- fied		2 inch	1 inch	3/4 inch	3/8 inch	No. 4	No. 10	No. 40	No. 60	No. 200	.02 mm	.005 mm	.002 mm	LL	PI	MD	OM	LS
			Pct													Pct		Lb/ cu ft	Pct	Pct
Matoon silty clay loam: (S81NY-089-7)																				
Ap ------- 0 to 8	A-4	OL	0	---	98.8	98.5	98.0	97.0	94.6	89.2	86.0	79.4	69.0	46.4	12.2	39.0	34.0	93.5	24.9	7.0
BE ------- 8 to 12	A-4	CL	0	---	98.9	98.8	98.2	97.7	95.4	91.4	89.0	83.9	75.0	56.7	19.0	30.0	19.7	105.7	18.7	6.0
Bt1 ----- 12 to 16	A-6	ML-CL	0	---	---	100	99.9	99.8	99.1	97.3	95.9	92.5	84.0	66.0	27.2	33.4	22.6	99.4	22.1	8.0
Bt2 ----- 16 to 27	A-7-6	CL	0	---	100	99.9	99.7	99.6	99.1	97.4	96.0	93.0	84.0	65.1	29.5	44.4	22.7	98.8	23.9	10.0
Raquette sandy loam: (S81NY-089-9)																				
Ap ------- 0 to 9	A-2-4	SM	0	98.7	93.6	92.3	90.0	88.1	84.5	67.2	49.3	26.8	9.8	4.3	1.6	---	NP	121.2	12.2	2.0
Bw1 ------ 9 to 19	A-2-4	SM	0	98.7	97.3	96.2	92.9	90.1	87.1	72.2	53.6	29.3	9.9	3.0	1.4	---	NP	123.4	11.5	1.0
2Bw2 ---- 19 to 25	A-1-b	SM	0	97.5	87.6	81.6	71.3	62.6	56.3	42.0	26.0	15.7	6.9	3.8	2.3	---	NP	133.5	8.7	2.0
2BC ----- 25 to 50	A-1-a	GW-GM	0	93.0	76.3	69.9	55.5	45.9	36.3	16.4	11.0	6.7	---	---	---	---	NP	137.5	7.7	1.0
Redwater fine sandy loam: (S81NY-089-21)																				
Ap ------- 0 to 7	A-2-4	SM	0	---	---	100	99.9	99.9	99.8	93.1	64.8	20.2	8.2	5.4	2.0	---	NP	103.5	17.4	---
Bw1 ------ 7 to 19	A-2-4	SM	0	---	---	---	---	100	99.9	96.0	76.0	25.1	11.1	6.2	2.5	---	NP	114.5	13.7	---
Bw2 ----- 19 to 30	A-2-4	SM	0	---	---	---	---	---	100	98.7	87.8	33.4	13.0	5.7	3.1	---	NP	111.1	15.2	---
BC ------ 30 to 38	A-4	SM	0	---	---	---	---	---	100	98.9	89.9	36.4	15.5	7.6	3.9	---	NP	114.7	13.6	---
C ------- 38 to 60	A-2-4	SM	0	---	---	---	100	99.9	99.8	95.6	77.4	26.3	12.2	6.1	3.8	---	NP	118.2	12.2	---
Stockholm loamy fine sand: (S81NY-089-2)																				
Ap ------- 0 to 10	A-2-4	SM	0	100	98.3	98.1	97.7	97.0	96.3	90.1	71.8	29.6	9.7	5.3	2.9	---	NP	104.3	17.3	2.0
Bh ------ 10 to 12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bs ------ 12 to 20	A-2-4	SM	0	---	---	---	---	100	99.3	90.8	65.2	13.1	---	---	---	---	NP	111.1	14.5	0
E ------- 20 to 23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2Bw ----- 23 to 30	A-7-5	ML	0	---	99.8	99.7	99.3	98.8	98.3	96.1	94.5	91.8	61.3	46.2	28.2	41.9	30.6	94.2	27.6	7.0
2C ------ 30 to 58	A-7-6	ML-CL	0	---	---	100	99.9	99.6	99.2	97.7	96.1	93.0	72.1	56.1	37.8	46.6	29.3	90.5	30.1	9.0
3C ------ 58 to 69	A-6	CL	0	---	99.8	99.7	99.6	99.3	98.6	95.7	90.7	80.9	55.0	46.6	34.7	35.5	19.6	100.0	23.6	9.0

See footnote at end of table.

Table 20.--Engineering Index Test Data--Continued

Soil name*, report number, horizon, and depth in inches	Classification		Grain-size distribution															Moisture density		
			>3 inch fraction	Percentage passing sieve--									Percentage smaller than--							
	AASHTO	Unified		2 inch	1 inch	3/4 inch	3/8 inch	No. 4	No. 10	No. 40	No. 60	No. 200	.02 mm	.005 mm	.002 mm	LL	PI	MD	OM	LS
			Pct													Pct		Lb/ cu ft	Pct	Pct
Waddington gravelly sandy loam: (S81NY-089-19)																				
Ap ------- 0 to 8	A-4	SM	0	92.2	86.0	84.7	82.3	78.7	73.7	55.1	51.1	40.3	13.6	5.9	3.4	---	NP	102.9	18.5	4.0
Bw ------- 8 to 12	A-2-4	SM	0	93.0	81.2	76.3	69.1	65.6	60.5	40.9	38.3	29.4	11.1	5.3	3.0	26.3	24.8	119.6	11.8	4.0
2BC ----- 12 to 19	A-1-a	SM	0	91.6	83.3	79.2	68.8	59.4	44.8	19.7	18.2	12.5	---	---	---	---	NP	134.7	8.4	1.0
2C1 ----- 19 to 36	A-1-a	SW-SM	0	89.8	73.0	69.0	61.0	53.9	44.9	12.8	11.1	7.4	---	---	---	---	NP	137.0	8.3	---
2C2 ----- 36 to 60	A-1-a	GW-GM	0	82.6	65.7	61.9	53.1	45.9	38.2	22.3	16.4	9.2	---	---	---	---	NP	138.5	8.2	1.0
Wegatchie silt loam: (S81NY-089-6)																				
Ap ------- 0 to 8	A-5	OH	0	---	---	100	99.8	99.6	98.8	95.0	91.8	83.9	46.6	24.3	12.8	54.0	47.9	79.2	34.5	10.0
Bg1 ------ 8 to 13	A-6	ML-CL	0	---	100	99.9	99.7	99.6	98.7	94.7	92.1	85.2	58.2	33.6	22.1	35.2	22.7	102.6	22.2	8.0
Bg2 ----- 13 to 19	A-7-6	ML-CL	0	---	100	99.9	99.7	99.6	99.0	96.5	94.9	91.1	62.5	40.5	30.3	41.0	27.2	92.8	27.5	10.0
BCg ----- 19 to 40	A-6	CL	0	---	---	100	99.8	99.6	99.3	96.5	94.1	86.6	58.9	32.3	19.3	31.7	19.7	110.1	18.1	7.0

* Location of pedon sampled is the same as that given for the typical pedon in "Soil Series and Their Morphology."

Table 21.--Classification of the Soils

Soil name	Family or higher taxonomic class
Adams	Sandy, mixed, frigid Typic Haplorthods
Adirondack	Coarse-loamy, mixed, frigid Typic Haplaquods
Adjidaumo	Fine, mixed, nonacid, frigid Mollic Haplaquepts
Berkshire	Coarse-loamy, mixed, frigid Typic Haplorthods
Borosaprists	Borosaprists
Carbondale	Euic Hemic Borosaprists
Colton	Sandy-skeletal, mixed, frigid Typic Haplorthods
Cook	Sandy over loamy, mixed, nonacid, frigid Mollic Haplaquents
Cornish	Coarse-silty, mixed, frigid Fluvaquentic Dystrochrepts
Coveytown	Sandy over loamy, mixed, nonacid, frigid Aeric Haplaquents
Crary	Coarse-loamy, mixed, frigid Aquic Haplorthods
Croghan	Sandy, mixed, frigid Aquic Haplorthods
Dawson	Sandy or sandy-skeletal, mixed, dysic Terric Borosaprists
Deford	Mixed, frigid Typic Psammaquents
Depeyster	Fine-silty, mixed Aquic Glossoboralfs
Dorval	Clayey, mixed, euic Terric Borosaprists
Duxbury	Coarse-loamy over sandy or sandy-skeletal, mixed, frigid Typic Haplorthods
Eelweir	Coarse-loamy, mixed, frigid Aquic Dystric Eutrochrepts
Elmwood	Coarse-loamy over clayey, mixed, frigid Aquic Dystric Eutrochrepts
Fahey	Sandy-skeletal, mixed, frigid Aquentic Haplorthods
Flackville	Sandy over clayey, mixed, frigid Aquic Haplorthods
Fluvaquents	Fluvaquents
Gouverneur	Loamy, mixed, nonacid, frigid Lithic Udorthents
Grenville	Coarse-loamy, mixed, frigid Typic Eutrochrepts
Guff	Fine, mixed, nonacid, frigid Mollic Haplaquepts
Hailesboro	Fine-silty, mixed, frigid Aeric Ochraqualfs
Hannawa	Loamy, mixed, frigid Lithic Haplaquolls
Heuvelton	Fine, mixed Aquic Glossoboralfs
Hogansburg	Coarse-loamy, mixed, frigid Aquic Eutrochrepts
Insula	Loamy, mixed, frigid Lithic Dystrochrepts
Kalurah	Coarse-loamy, mixed, frigid Aquic Dystric Eutrochrepts
Lovewell	Coarse-silty, mixed, frigid Fluvaquentic Dystrochrepts
Loxley	Dysic Typic Borosaprists
Lyman	Loamy, mixed, frigid Lithic Haplorthods
Lyme	Coarse-loamy, mixed, acid, frigid Aeric Haplaquepts
Malone	Coarse-loamy, mixed, nonacid, frigid Aeric Haplaquepts
Matoon	Fine, mixed, frigid Aeric Ochraqualfs
Mino	Coarse-loamy, mixed, nonacid, frigid Aeric Haplaquepts
Munuscong	Coarse-loamy over clayey, mixed, nonacid, frigid Mollic Haplaquepts
Muskellunge	Fine, mixed, frigid Aeric Ochraqualfs
Naumburg	Sandy, mixed, frigid Aeric Haplaquods
Nehasne	Coarse-loamy, mixed, frigid Dystric Eutrochrepts
Nicholville	Coarse-silty, mixed, frigid Aquic Haplorthods
Ogdensburg	Coarse-loamy, mixed Aquic Haploborolls
Potsdam	Coarse-loamy, mixed, frigid Typic Haplorthods
Pyrities	Coarse-loamy, mixed, frigid Dystric Eutrochrepts
Quetico	Loamy, mixed, acid, frigid Lithic Udorthents
Raquette	Sandy, mixed, frigid Typic Eutrochrepts
Redwater	Coarse-loamy, mixed, frigid Fluvaquentic Eutrochrepts
Ricker	Dysic Lithic Borofolists
Roundabout	Coarse-silty, mixed, nonacid, frigid Aeric Haplaquepts
Runeberg	Coarse-loamy, mixed, frigid Typic Haplaquolls
Salmon	Coarse-silty, mixed, frigid Typic Haplorthods
Searsport	Sandy, mixed, frigid Histic Humaquepts
Stockholm	Sandy over clayey, mixed, frigid Typic Haplaquods
Summerville	Loamy, mixed, frigid Lithic Eutrochrepts
Sunapee	Coarse-loamy, mixed, frigid Aquic Haplorthods
Swanton	Coarse-loamy over clayey, mixed, nonacid, frigid Aeric Haplaquepts
Trout River	Sandy-skeletal, mixed, frigid Entic Haplorthods
Tughill	Loamy-skeletal, mixed, nonacid, frigid Histic Humaquepts
Tunbridge	Coarse-loamy, mixed, frigid Typic Haplorthods
Udifluvents	Udifluvents
Udipsamments	Udipsamments
Udorthents	Udorthents
Waddington	Loamy-skeletal, mixed, frigid Typic Eutrochrepts

Table 21.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Wegatchie----------------	Fine-silty, mixed, nonacid, frigid Mollic Haplaquepts

Table 22.--Relationships Among Parent Material, Dominant Texture, and Drainage of the Soils

Parent material	Excessively drained	Somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
Soils formed in alluvium:							
Medium textured and moderately coarse textured; bedrock at a depth of 40 to 60 inches					Redwater		
Medium textured; very deep				Lovewell	Cornish		
Variable texture; very deep; subject to frequent flooding			Udifluvents	Udifluvents	Fluvaquents	Fluvaquents	Fluvaquents
Soils formed in glacial outwash:							
Sands and gravel; reddish brown subsoil; acid; on kames, eskers, and outwash plains	Colton						
Sands and gravel; brown subsoil; acid; on glacial lake beaches and terraces	Trout River			Fahey			
Sands; strongly acid and moderately acid in the subsoil	Adams	Adams		Croghan	Naumburg	Naumburg	Searsport
Sands; slightly acid to slightly alkaline; 3 to 35 percent rock fragments in the subsoil		Raquette					
Sands; slightly acid to slightly alkaline; 0 to 10 percent rock fragments in the subsoil						Deford	Deford
Moderately coarse textured material over sand and gravel; on glacial lake beaches and deltas		Waddington					
Medium textured material over sand and gravel; on outwash plains and terraces			Duxbury				

See footnotes at end of table.

Table 22.--Relationships Among Parent Material, Dominant Texture, and Drainage of the Soils--Continued

Parent material	Excessively drained	Somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
Soils formed in lacustrine and marine sediments:							
Sandy over clayey material				Flackville		Stockholm	
Moderately coarse textured material 20 to 40 inches thick over clayey material				Elmwood	Swanton	Swanton	Munuscong
Moderately coarse textured and medium textured; more than 18 percent clay and 15 percent or more sand				Eelweir	Mino		
Medium textured; more than 18 percent clay and more than 15 percent sand			Salmon	Nicholville	Roundabout		
Medium textured; 18 to 35 percent clay and more than 15 percent sand				Depeyster	Hailesboro	Wegatchie	Wegatchie
Clayey (35 percent or more clay in the subsoil); very deep				Heuvelton	Muskellunge	Adjidaumo	Adjidaumo
Clayey (35 percent or more clay in the subsoil); bedrock at a depth of 20 to 40 inches					Matoon	Guff	
Soils formed in glacial till:							
Friable; moderately coarse textured; strongly acid in the subsoil; very deep			Berkshire	Sunapee		Lyme	Tughill
Friable; moderately coarse textured; strongly acid in the subsoil and dense in the substratum					Adirondack		
Moderately coarse textured and medium textured; acid, siliceous bedrock at a depth of 20 to 40 inches*			Tunbridge				

See footnotes at end of table.

Table 22.--Relationships Among Parent Material, Dominant Texture, and Drainage of the Soils--Continued

Parent material	Excessively drained	Somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
Soils formed in glacial till:							
Moderately coarse textured and medium textured; acid, siliceous bedrock at a depth of 10 to 20 inches*		Lyman	Insula				
Moderately coarse textured and medium textured; acid, siliceous bedrock at a depth 4 to 10 inches*		Quetico					
Medium textured; friable subsoil over a dense substratum			Potsdam	Crary			
Medium textured and moderately coarse textured; calcareous at a depth of 40 to 80 inches			Pyrities	Kalurah			
Medium textured and moderately coarse textured; calcareous at a depth of more than 40 inches			Grenville	Hogansburg	Malone	Runeberg	Runeberg
Medium textured and moderately coarse textured; limestone, dolomitic sandstone, or marble bedrock at a depth of 20 to 40 inches			Nehasne		Ogdensburg		
Medium textured and moderately coarse textured; limestone, dolomitic sandstone, or marble bedrock at a depth of 10 to 20 inches			Summerville			Hannawa	
Medium textured and moderately coarse textured; limestone, dolomitic sandstone, or marble bedrock at a depth of 1 to 9 inches	Gouverneur	Gouverneur					
Sandy over loamy, wave-worked till; on glacial lake beaches				Fahey	Coveytown	Cook	Cook

See footnotes at end of table.

Table 22.--Relationships Among Parent Material, Dominant Texture, and Drainage of the Soils--Continued

Parent material	Excessively drained	Somewhat excessively drained	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
Soils formed in organic material:							
Organic deposits of variable depth and composition							Borosaprists
Highly decomposed organic deposits more than 51 inches deep; extremely acid (in $CaCl_2$) throughout the profile**							Loxley
Highly decomposed organic deposits more than 51 inches deep; very strongly acid or higher pH							Carbondale
Highly decomposed organic deposits 16 to 50 inches deep over sandy mineral material							Dawson
Highly decomposed organic deposits 16 to 50 inches deep over clayey mineral material							Dorval
Slightly decomposed and moderately decomposed organic deposits 2 to 26 inches thick over bedrock	Ricker	Ricker	Ricker				
Soils formed in material disturbed by man:							
Loamy or clayey material, mine waste, or refuse material			Udorthents	Udorthents			
Sandy texture	Udipsaments	Udipsaments	Udipsaments	Udipsaments			

* Acid, siliceous bedrock in the survey area consists mainly of forms of granite, gneiss, or acid sandstone bedrock.

** Reaction was measured in 0.01M calcium chloride.

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