3.25 Sociocultural Systems

Sociocultural systems comprise the collection of beliefs, ideas, behavioral patterns, and tools that humans use to adapt to their physical and social surroundings. Although all humans are affiliated with one sociocultural system or another, this section focuses primarily on selected groups of indigenous people of Alaska, known collectively as *Alaska Natives*. It also examines the sociocultural system of non-Native rural Alaskans, people who generally share common roots in Euro-American society, but who have chosen a remote, rural Alaskan existence leading to behavioral patterns and activities much different from those of most Americans.

Sociocultural Systems

Sociocultural systems consist of the beliefs, ideas, behavioral patterns, and tools that humans use to adapt to their physical and social surroundings. The discussion of sociocultural systems presented here focuses on the Alaska Natives and rural, non-Native Alaskans living in areas in the vicinity of the TAPS. Alaska Natives have a different socio-cultural heritage than most Americans. Eight different Alaska Native sociocultural systems are considered. Most rural, non-Native Alaskans have their sociocultural foundation in Euro-American society, but are now following a way of life much different from the majority of Americans.

Alaska Native Sociocultural Systems Whose Traditional Occupation Included Areas near or Transected by the TAPS (Listed North to South)

- Iñupiat
  - Nunamiut
  - Tareumiut
- Athabascan
  - Gwich'in
  - Koyukon
  - Tanana
  - Ahtna
- Alutiiq
  - Chugach Alutiiq
- Northwest Coast
  - Eyak

3.25.1 Alaska Native Sociocultural Systems

Alaska Native sociocultural systems continue to occupy and use their traditional lands, maintaining many traditions in social organization, cultural beliefs, and religious activities into the 21st century. The reasons for this persistence are a complex mix of ecological possibilities, contact history, and the enduring commitment of Alaska Native communities to retain their culture and identify. European and, later, American contact with Alaska Natives was driven by exploitation of resources such as fur, whales, gold, and salmon. These resources had limited geographic distributions, and so intensive contact generally was localized or regionalized through the late 19th century. When it occurred, contact with Euro-Americans often had severe consequences for Alaska Native sociocultural systems — such as Russian displacement of Alaska Natives from traditional fishing territories. Even more widespread in their effects were waves of epidemic disease that took a terrible toll on Native populations in parts of Alaska during the 19th and early 20th centuries, in many cases removing entire organizational components of Native societies. Despite such disruption, Alaska Native sociocultural systems persisted. One interpretation suggests that isolation and limited direct contact with non-Natives helped limit the impact of introduced diseases, which often decimated Native populations (and cultures) elsewhere, and slowed the adoption of non-Native cultural characteristics (see Fortuine 1992). An alternative view, increasingly asserted in the Alaska Native community, is that epidemic disease had drastic effects, causing the abandonment of entire communities and leaving traumatized survivors to aggregate in new settlements (sometimes in new areas) to

continue their lives without the benefit of the cultural guidance of elders who had perished (Napoleon 1991; Alaska Natives Commission 1994). Directed culture change through missionary efforts began with the Russian Orthodox Church in the late 18th century, but impacts were more widespread as American denominations accelerated such work in the late 19th century. Also of fundamental importance in the dynamics of sociocultural change in Alaska are the movements of political self-assertion and cultural renewal initiated by Alaska Natives themselves. To be sure, the sociocultural systems of modern Alaska Natives are considerably modified from those that existed prior to contact. However, parts of the earlier systems persist, yielding modern sociocultural systems that to one degree or another blend Euro-American and traditional characteristics.

Initial contact between Alaska Natives and non-Natives began in 1741 with Chirikov's landing on the panhandle near Cross Sound. However, frequent contact in most of the geographic area of present interest did not begin until the second half of the 18th century or later (VanStone 1984). Confined initially to the western and southern coasts, Euro-Americans eventually moved into Interior Alaska by the mid-19th century to pursue fur trade and missionary activities, and to the north coast later that century for whaling (Hosley 1981; Spencer 1984). With increased exposure to non-Natives came sociocultural change — including a slowly growing reliance on introduced goods, a shift in Native settlement and economic activities in some areas to improve access to those goods, and the gradual (and variable) integration of non-Native language, religion, and behavior into traditional societies. Such changes succeeded in greatly modifying Alaska Native sociocultural traditions but did not completely replace them. As of the 2000 census of population and housing, 15.6% of the state's population (98,043 individuals) identified themselves as Alaska Native or American Indian (mostly the former); another 21,102 individuals claimed at least partial Alaska Native heritage, bringing the total to 119,145, or 18.7% of the state population (U.S. Bureau of the Census 2001a). Many of these people continue to live in rural communities that consist largely of Alaska Natives, rely heavily on harvesting available resources for subsistence, anchor their identity in traditional sociocultural heritage, and have maintained participation in contemporary Alaska Native lands claims, cultural revival, and sobriety movements.

In traversing 800 mi of Alaska, the TAPS crosses areas associated with several major Alaska Native sociocultural systems. The natural environment crossed by the TAPS varies widely. Alaska Native sociocultural systems, the primary means by which people adapt to natural (and social) surroundings, vary widely as well. To help organize this overview of sociocultural diversity, this EIS follows the *Handbook of North American Indians* in defining eight regional sociocultural systems (though updating their names), listed from north to south as follows: Tareumiut (North Alaska Coast Eskimo), Nunamiut (Interior North Alaska Eskimo), Gwich'in, Koyukon, Tanana, Ahtna, Chugach Alutiiq (formerly called Pacific Eskimo), and Eyak, (Damas 1984; Helm 1981; Suttles 1990) (Map 3.25-1). These may be seen as parts of the larger Eskimo (northern and northwestern Alaska), Athabascan (Interior Alaska), Alutiiq (southcentral and southwestern Alaska), and Northwest Coast (southeastern Alaska, extending from the northwest coast of the United States) sociocultural traditions.

Brief descriptions of these eight regional sociocultural systems follow, each covering certain key topics — social organization, cultural values, institutional organization, modern settlements, and demographics. These descriptions all begin with overviews of each system shortly after the onset of contact with Euro-Americans, providing some documentation of the systems in question (usually) before great amounts of culture change occurred. Far from being exclusively of historic interest, traditional Alaska Native sociocultural systems continue to contribute much to Alaska Native society in the early 21st century. Moreover, these brief historic summaries help one to appreciate how much these systems have changed over the past century or two.

Discussions of certain other important characteristics of Alaska Native sociocultural systems appear elsewhere in this EIS. Subsistence, a topic of considerable importance to Alaska Natives, as well as many rural

non-Native Alaskans, is discussed in Section 3.24, although an examination of certain sociocultural aspects of traditional subsistence appears below. Cultural resources, including prehistoric and historic archaeological sites, as well as sacred sites (traditional cultural properties), are discussed in Section 3.26. Issues associated with environmental justice, important to Alaska Natives both because of their minority status and because of their frequent low-income status, are presented in Section 3.29. Finally, Section 3.23 describes the modern economy of Alaska, which has an increasing influence on (and is increasingly influenced by) Alaska Native sociocultural systems of the 21st century.

3.25.1.1 Major Alaska Native Sociocultural Systems along the TAPS

Alaska Natives along the TAPS ROW are characterized by a broad range of sociocultural diversity, and it would be a gross over-simplification to treat them otherwise even in a brief overview such as this. However, in the interest of orienting this summary there are some important characteristics that many Alaska Native groups share, the most important of which include the following:

- *Hunting and gathering:* None of the Alaska Native groups discussed below traditionally produced their own food though agriculture, relying instead on hunting, gathering, fishing, and trapping, with nearly all of the food consumed being animal flesh. Successful exploitation of these Alaskan ecosystems required intimate knowledge of animal habitats, distribution, and reactions to weather. This traditional ecological knowledge would remain important even as new technologies were adopted.

- *Mobile bands* of varying composition: In large part determined by the availability of subsistence resources, most groups consisted of small bands that frequently relocated in search of food, sometimes fragmenting into smaller groups (as small as individual nuclear families in times of little food) and other times forming larger aggregations. Coastal peoples often had more substantial settlements occupied for longer periods of the year.

- *Egalitarian or Simple Ranked Societies:* Most of the groups examined in this EIS were fundamentally egalitarian in social structure and political organization. Leaders were acknowledged on the basis of their personal abilities or accomplishments. Along the Pacific Coast, sociocultural systems had more formal and elaborate systems of clan ranking, and even class systems, with nobles, commoners, and slaves.

- *Strong kin-based systems:* The main social units for most sociocultural systems examined in this section were nuclear or extended families, with bands often comprising collections of related family units. Clans that crosscut kinship were recognized among the Athabascan and Eyak sociocultural systems.

Many of the common characteristics discussed above are consequences of Alaska Natives adapting to available resources, which occurred in different amounts at different times of the year in different localities. For example, prior to contact, interior Athabascans might have lived along streams in temporary camps of several families during early summer to capitalize on the salmon run, dispersed as smaller groups of families in the uplands during late summer to hunt sheep and gather berries, and aggregated into large groups in autumn near mountain passes to collaborate on large-scale hunts of migrating caribou. Most of these patterns of behavior are primarily of historical interest. However, certain aspects of traditional subsistence-settlement systems persist — notably the desire to exploit key subsistence resources at certain times of the year (after relocating temporarily to do so). Moreover, Alaska Natives continue to recognize the importance of kinship, which persists as an important consideration in social and economic relationships.

Contemporary Alaska Natives live primarily in permanent communities, some occasionally relocating temporarily at a certain time of year to pursue subsistence activities. As a result, when

examining modern Alaska Natives, this study focuses on selected *villages* (federally recognized tribes), emphasizing 21 that were judged likely to experience direct effects of renewing the TAPS ROW (BLM 2001a) (see Map 3.25-1). Five main criteria contributed to the selection of these groups:

- Potential impacts on subsistence, including both direct impacts (e.g., TAPS reducing access to subsistence areas) and indirect impacts (e.g., TAPS-associated roads enabling access by recreational hunters);
- Potential impacts on employment, primarily in providing TAPS-related employment;
- Potential impacts on culture, such as the change brought about by wages earned from the oil industry;
- Impacts on land selection, notably during ANCSA negotiations when certain land was not claimed to facilitate TAPS construction; and
- Impacts through ANCSA corporation earnings, ANCSA7(i) redistributions, and Section 29 of the current ROW agreement, in the form of increased income from oil revenues and wages.

These criteria led to the original selection of 16 rural *directly affected* villages, which increased to 21 upon further review (Table 3.25-1).

The following sections contain compressed descriptions of the main sociocultural systems whose traditional areas are intersected by (or, in one case, lies near) the TAPS. The information presented includes overviews of each system about the time of Euro-American contact as well as modern characteristics — to provide a sense of how these sociocultural systems have changed over time. These overviews are arranged north-to-south, both to group similar sociocultural systems and to provide an organization parallel to the discussion of subsistence found in Section 3.24.

3.25.1.1.1 Tareumiut (North Alaska Coast Eskimo). The Iñupiat of northern Alaska share a common language, Iñupiaq. However, speakers of this language may be divided into two regional groups — the Nunamiut, living in interior Alaska, and the Tareumiut, living on or near the north Alaska coast. The Tareumiut traditionally are associated with the north coast of Alaska, primarily between Point Barrow and Point Hope to the west (Spencer 1984). Although possessing an intricate sociocultural system, the hallmark of the Tareumiut is whaling (Table 3.25-2). This activity contributed (and continues to contribute) not only to the economy of these peoples but also to their social fabric and religious practices. Whaling was an activity pursued by small, organized groups led by a highly respected individual, the whaling captain ("umialik"). Following a successful hunt, parts of the whale were shared among residents of the village (and guests) where the whaling crew lived and with selected individuals outside the village. Although the Tareumiut also hunted or otherwise pursued other animals in both the past and present, their emphasis was on hunting sea mammals.

The Tareumiut had only limited and sporadic contact with Euro-Americans prior to the 1850s, when whaling ships from New England arrived and began intensive commercial whaling in the area (Kruse 1982). Crews introduced diseases, alcohol, and the hiring of Natives for whaling crews, all of which took their toll on Tareumiut society. Outsiders introduced additional changes throughout much of the 20th century, including wage labor, a cash economy, and various economic pursuits (e.g., commercial fur trapping and reindeer herding) that differed greatly from traditional subsistence activities. Missionaries introduced not only Christianity, but also modern Western education and important cultural changes (such as insistence that children stop speaking Iñupiaq). Additional changes occurred following World War II, largely associated with a surge in activities by Euro-Americans related to oil exploration and development (Kruse 1982). The discovery of large oil reserves on traditional Tareumiut land ultimately led to ANCSA. As discussed in Section 3.23.6, the Arctic Slope Regional Corporation, which formed to manage Iñupiat land and compensation funds, has been extremely successful.

Ranked as the most successful business in Alaska in 1999 (Association of ANCSA Regional

TABLE 3.25-1 Directly Affected Villages in the Vicinity of the TAPS

Village Name	Sociocultural Affiliation[a]	Basic Village Economy	Area (mi^2)[b]
	North Slope		
Anaktuvuk Pass	Mainly Iñupiat (primarily Nunamiut)	Subsistence hunting and fishing; little wage labor	4.9
Nuiqsut	Mainly Tareumiut	Subsistence hunting; some wage labor (mainly in oil industry)	9.2
	Yukon River Drainage		
Alatna	Mainly Kobuk River Iñupiat	Subsistence fishing and hunting; crafts; some seasonal wage labor	36.5
Allakaket	Mainly Koyukon Athabascan	Subsistence fishing and hunting; crafts; some wage labor (usually part-time or seasonal)	4.3
Evansville	Athabascan and Iñupiat	Wage labor and subsistence hunting and fishing	22.4
Hughes	Mainly Koyukon Athabascan	Subsistence fishing and hunting; limited wage labor (local government, seasonal construction, firefighting)	3.1
Manley Hot Springs	Mainly Euro-American; Alaska Natives are Athabascan and Iñupiat	Range of small businesses generating cash income; also commercial fishing; some subsistence fishing and hunting to complement other activities	54.3
Minto	Mainly Tanana Athabascan	Subsistence hunting and fishing; wage labor (school, local government); crafts	138.7
Rampart	Mainly Koyukon Athabascan	Subsistence fishing and hunting; some wage labor (e.g., fire fighting, commercial fishing)	168.8
Stevens Village	Mainly Koyukon Athabascan	Subsistence; some wage labor (e.g., fire fighting, working in school)	11.0
Tanana	Mainly Koyukon Athabascan with some Iñupiat; also relatively large Euro-American population	Emphasis on subsistence; some wage labor (e.g., fire fighting, trapping, construction, and commercial fishing), often seasonal	15.6
	Copper River Drainage		
Chitina	Mainly Ahtna Athabascan	Wage labor (local, state, and federal government); also subsistence fishing and hunting	95.7
Copper Center	Mainly Ahtna Athabascan	Subsistence fishing and hunting; wage labor (local businesses, tourism-related)	13.7
Gakona	Mainly Ahtna Athabascan (in Native village portion of community)	Wage labor (local businesses, tourism-related); some subsistence fishing and hunting.	61.3

TABLE 3.25-1 (Cont.)

Village Name	Sociocultural Affiliation[a]	Basic Village Economy	Area (mi^2)[b]
Gulkana	Mainly Ahtna Athabascan	Subsistence fishing and hunting; limited wage labor (local government, seasonal construction)	36.5
Tazlina	Mainly Ahtna Athabascan	Subsistence fishing and hunting; some wage employment in small service businesses	7.5
Prince William Sound and Lower Cook Inlet			
Chenega	Mainly Chugach Alutiiq	Mainly subsistence fishing and hunting; also commercial fishing	31.1
Eyak	Eyak, Chugach Alutiiq, and several other groups, including those from coastal (e.g., Tlingit) and Interior (e.g., Athabascan) Alaska	Wage labor, primarily associated with commercial fishing (local businesses); considerable involvement in subsistence fishing, hunting, and collecting	13.5
Nanwalek	Mainly Unegkurmiut Alutiiq	Wage labor (mostly Port Graham cannery, some commercial fishing); subsistence fishing and hunting	8.5
Port Graham	Mainly Unegkurmiut Alutiiq	Wage labor (fish cannery, commercial fishing); subsistence fishing and hunting	5.9
Tatitlek	Mainly Alutiiq, some Iñupiat	Mainly subsistence fishing, hunting, and collecting; some wage employment (mainly commercial fishing)	7.3

[a] Refers to Alaska Native sociocultural group; villages tend to be associated with one major sociocultural group, although members of other groups also may be present.

[b] Refers to total area of land and (when appropriate) water under jurisdiction of the community.

Source: ADCED (2001b).

Corporation Presidents/CEOs 2001), the Arctic Slope Regional Corporation's total revenues exceeded $1 billion in 2000 (Arctic Slope Regional Corporation 2001). The North Slope Iñupiat also led in another form of political self-assertion with the formation in 1972 of the North Slope Borough. To an unprecedented degree, the borough has successfully used its taxing authority on energy development to generate revenues with which to launch ambitious programs in capital improvements, land use regulation, wildlife management, and cultural programs (McBeath and Morehouse 1980).

The North Slope Borough also formed to represent the interests of the North Slope Iñupiat. One directly affected village examined in this EIS, the Native Village of Nuiqsut, consists largely of Tareumiut from Barrow (and their descendants) who resettled a previously abandoned village (ADCED 2001b) (see Table 3.25-1). Pursuit of subsistence, emphasizing both marine mammals and terrestrial resources, continues to play an important role in Nuiqsut, although increasing numbers of residents have access to wage labor associated with the oil industry. Exchange and social interaction rely heavily on traditional kinship lines, and many Tareumiut continue to speak their native Iñupiaq.

TABLE 3.25-2 Selected Characteristics of Regional Sociocultural Systems, Shortly after Contact, in the Vicinity of the TAPS

Name	Area	Socio-political Organization[a]	Subsistence-Settlement	Demography
Tareumiut (North Alaska Coast Eskimo)	Primarily along north coast from Point Barrow west to Point Hope, but with limited activity along the coast east of Point Barrow	Core of society was bilateral extended families, any given village being a grouping of these units; regional tribal recognition was absent; generally egalitarian, with political organization absent beyond the hunt (crew) leaders, who rose to authority due to personal skills, wealth, and ability to recruit and lead crews.	Semisedentary, residing in villages; whaling played a key role in subsistence and in cultural definition, emphasized in the spring as crews left from villages (more sporadic whaling occurring during the fall whale migration), with some walrus and caribou hunting also conducted in groups during late spring and summer; travel to trading centers in late summer; in fall and winter people returned to villages to hunt individually, make or repair hunting tools, and engage in social activities.	Approximately 1,850 in the mid- to late 19th century.
Nunamiut (Interior North Alaska Eskimo)[b]	Brooks Range, and Colville, Ikpikpuk, Meade, and Utukok River valleys	Nuclear family was main structural unit, although people usually lived in egalitarian bands of 6 to 12 extended families (the main unit of production and consumption); trading partners helped establish extra-band relations while friendships were important within and between bands; band headman was an individual of material wealth and respect, coordinator of key caribou hunts in fall and spring.	Caribou constituted more than 90% of diet and greatly influenced settlement; spring and fall aggregations in mountain passes to hunt migrating caribou; winter settlement comprised dispersed extended families; summer aggregation in Nigalik for trading fair (crucial opportunity to interact with other bands, establish/maintain trade relations).	1,000–2,000 is likely a good estimate for pre-contact total, although estimates vary widely; virtually all remaining Nunamiut presently residing in Anaktuvuk Pass, resettled mid-20th century, with population of 249 Natives in 2000.

TABLE 3.25-2 (Cont.)

Name	Area	Socio-political Organization[a]	Subsistence-Settlement	Demography
Gwich'in	Northeastern Alaska (middle Yukon River drainage) and northwestern Yukon Territory (lower Mackenzie River drainage), extending north to the edge of the Brooks Range and Cordillera	Nine to 10 regional bands at contact; basic component of society was the nuclear family, which occasionally aggregated into semisedentary local groups or larger groups, the latter for economic or ritual purposes; three matrilineal clans cross-cut all of the Gwich'in; hierarchically ordered, with leaders often coming from the highest ranking clan present; wealth and age also helped determine local and large group leadership, although hereditary leaders occasionally occurred.	Seminomadic, with relocations and size of settlements determined by economic (usually) or ritual activities; perhaps 15% of population organized in largely sedentary local groups that occupied and exploited range of resources from a particular area; remainder of population moved throughout the year, with larger group aggregations occurring at summer fish camps and spring and fall caribou hunts; Gwich'in viewed themselves as caribou hunters, and although caribou contributed much to meet their needs, survival demanded exploitation of fish (freshwater and anadromous) and other game (particularly hares, beaver, muskrats, squirrels, and porcupine) available.	Estimated 4,600–5,400 in the 18th century (early contact), declining to fewer than 1,000 by mid-19th century; by 1968, population had rebounded to about 2,150.
Koyukon	Middle Yukon River valley, Kantishna and Koyukuk River valleys; lower Tanana River valley; three main divisions, based largely on linguistics	Loosely ranked, seminomadic bands of about 50 persons, matrilineal extended family forming the core of society; leaders were *rich men* or *big traders* known for personal accomplishment, leading bands (or parts of bands) and organizing communal subsistence efforts (caribou fences, fish weirs); originally three matri-clans; little regional tribal recognition, although intermarriage among bands created social/kinship network beyond the immediate band.	Seminomadic, with movements and settlement based on seasonal subsistence activities; fall aggregations at stream outlets of large lakes to combine fishing (grayling, whitefish) and hunting (main activity being large-scale caribou hunting); winter residence in villages near fall camps, fishing until ice became too thick; spring hunting and trapping camps until ice breakup, at which time they aggregated for spring feast and then dispersed to fishing camps (salmon, traps and weirs); late summer hunting in hinterlands while women, children, and older people collected.	Population likely totaled 1,100–1,800 for most of known history (mid-19th century to present).

TABLE 3.25-2 (Cont.)

Name	Area	Socio-political Organization[a]	Subsistence-Settlement	Demography
Tanana	Majority of Tanana River watershed — uppermost tributaries to Tolovana River	Areas of about 12 bands can be distinguished; egalitarian to loosely ranked, with chiefs determined largely by ability (loose inheritance through family lines) the main coordinators of collaborative efforts (e.g., construction of fish weirs and caribou fences, hunt coordination); three main matrilineal descent groups cross-cutting bands and providing a basis for social integration.	Seminomadic, with movements and settlement based on seasonal subsistence activities; fall aggregations in uplands for main caribou hunt at caribou fences; winter villages near caribou fences as well (near caches of meat); spring fishing camps, to build or repair weirs for summer fishing (whitefish, salmon); late summer sheep hunting and collecting camps in mountains; caribou were of paramount importance; considerable change in settlement and band structure 1920s-1960s, accompanying increased sedentary lifestyle.	Population probably never greater than 700 following contact; census of 1910 recorded 415, although probably included some neighboring Koyukon.
Ahtna	Copper River valley, excluding delta, covering about 23,000 mi^2	Three regional groupings, based on linguistics; basis was 8-10 matrilineal clans organized into two exogamous moieties; egalitarian-ranked society, with three social classes recognized; chiefs selected on basis of accomplishment and leadership ability; authority largely confined to one's own clan, but organized collaborative hunting and fishing activities involved leadership at large scales.	Seminomadic, with movements and settlement based on seasonal subsistence activities; spring and summer fish (salmon) camps along Copper River and key tributaries; late summer upland meat camps (hunting caribou, moose, and smaller mammals); fall camps near waterways (fishing, trapping, and hunting range of animals); winter aggregation in villages; late January/February dispersal to exploit any resources available; movements and settlement keyed to local environmental conditions and amount of food present in previously established caches.	Population probably never more than 1,000; decimated by disease (smallpox 1837–1839; tuberculosis about 1900).

TABLE 3.25-2 (Cont.)

Name	Area	Socio-political Organization[a]	Subsistence-Settlement	Demography
Chugach Alutiiq	Coastal Prince William Sound, east nearly to Cordova	Eight local groups, although with no cultural recognition beyond village cluster; three nonrigid classes in what appears as an egalitarian-ranked society; chiefs hereditary, or at least from chiefly class, but position had to be maintained through personal actions; some chiefs led several villages; little is known of the basis for early social organization.	Primarily a marine-littoral adaptation, with an emphasis on marine mammals and halibut throughout the year, other fish (salmon, cod, herring, and eulachon) during summer, and mountain goat, harbor seal, and bear during the winter; summer villages/fish camps occurred at the mouth of salmon streams, winter villages in protected areas (e.g., small embayment), with all settlement tied to the coast and seasonal relocations tied to subsistence.	278 at the time of the first U.S. census in 1880 (likely numbered many more at one time), in addition to 600–800 of mixed descent; by 2000, 63 in Chenega Bay, and 90 in Tatitlek (most probably Chugach); and 255 Natives in Cordova (consisting primarily of Chugach Alutiiq and Eyak). Note that 2000 figures do not reflect mixed descent (e.g., for Cordova, total number claiming some Native heritage is 368).
Eyak	As recently as late 18th century, along 300-mi length of Gulf of Alaska coast (about 15 mi wide), northern extent was Prince William Sound	Four regional groupings, the eastern three with strong ties to Tlingit; basis was two matrilineal clans/moieties; ranked society, with three social categories, chiefs selected on basis of heredity, but leadership largely confined to own clan/moiety rather than entire village.	Combined marine (smaller mammals, fish, shellfish, seaweed), riverine (fish), and terrestrial (caribou, moose, range of smaller mammals, berries) adaptive pattern; exploitation was highly seasonal; semisedentary villages and temporary resource-exploitation sites.	Wide-ranging estimates, never more than 450; decimated by disease (e.g., smallpox epidemic of 1837–1838) and warfare and largely incorporated into Tlingit. Estimates based on language and blood quantum suggested as few as 5 Eyak remained by 1985. However, the Tribal government of the Native Village of Eyak reports a multi-ethnic membership of 500, of which 100 are said to be descendents of aboriginal Eyak. The 2000 census reported 368 residents of Cordova and 14 of Eyak claiming at least partial Native heritage.

See footnotes on next page.

TABLE 3.25-2 (Cont.)

[a] General terms of band and tribe in the sense of Service (1971), and egalitarian and ranked in the sense of Fried (1967).

[b] Virtually all information from Anaktuvuk Pass, because Nunamiut had long since left their original river valleys by the time systematic recording had begun.

Sources: Table compiled from information in Birket-Smith (1953); Birket-Smith and De Laguna (1976); Burch (1980); A.M. Clark (1974, 1981); D.W. Clark (1984); Davis (1984); De Laguna (1990); De Laguna and McClellan (1981); Gubser (1965); Hall (1984); Heinrich 2002; McKennan (1959, 1981); Osgood (1936b); Slobodin (1981); Spencer (1959, 1984); U.S. Bureau of the Census 2001c.

3.25.1.1.2 Nunamiut (Interior North Alaska Eskimo). The Nunamiut differ from their northern neighbors in geographic location, living primarily in the Brooks Range and along several rivers flowing out of those mountains, and in their heavy reliance on caribou for food during traditional times (Hall 1984; Hall and Associates 1985) (see Table 3.25-2). Before the arrival of Euro-Americans, the Nunamiut lived in a series of mobile bands in the mountains and foothills south of the Arctic Ocean coast. However, during the second half of the 19th century, widespread depopulation from introduced disease, starvation due to declining caribou herds, and migration to the coast decimated the interior groups. Shortly after 1920, the Nunamiut abandoned their lands. Although a few families returned in the late 1930s to pursue a traditional life, they did not resettle the area permanently until people began living in the village of Anaktuvuk Pass in the early 1950s (Hall and Associates 1985; Gubser 1965). Most of the people living in Anaktuvuk Pass are Mountain Nunamiut from the Brooks Range. Because most ethnographic research on the Nunamiut has been conducted with people from this community, anthropological understanding of this sociocultural system in early contact times is biased. Additional insights on inland Iñupiat groups are available from studies in the Noatak and Kobuk River areas to the west (Burch 1998).

The Village of Anaktuvuk Pass is one of the federally recognized Tribes directly affected by the TAPS (see Table 3.25-1). The population of this community in 2000 was 282, with 249 (88.3%) Alaska Natives, most presumably Nunamiut. In 1971, the Nunamiut became eligible to enroll as shareholders in the Arctic Slope Regional Corporation, which was created to manage the money and 5 million acres of land granted to the Iñupiat under ANCSA (Arctic Slope Regional Corporation 2001).

Despite close corporate association with oil industry activities on the north slope of the Brooks Range, Native residents of Anaktuvuk Pass continue to pursue traditional subsistence activities, notably caribou hunting. Much of community life revolves around organizing and pursuing subsistence activities. Exchanging subsistence resources and other forms of social interaction emphasize kin ties both within the community and beyond.

3.25.1.1.3 Gwich'in. The Gwich'in are a northern Athabascan people occupying the Yukon flats and the southeastern slopes of the Brooks Range in what is now Alaska and the lower Mackenzie River drainage in Canada's Yukon Territory (Slobodin 1981) (see Table 3.25-2). The Gwich'in consisted of 9 or 10 regional bands at contact, each likely speaking a slightly different dialect and occupying a separate river drainage within the main drainages mentioned above. Traditional social organization balanced certain sociocultural guidelines with flexibility and opportunism, the latter two principles enhancing survival in a challenging natural environment. Although the majority of Gwich'in followed a seminomadic life characteristic of most Athabascans, as many as 15% lived in local groups consisting of six to eight related households that occupied a fixed area for a number of years. As interaction with Euro-Americans began, the Gwich'in gradually became more sedentary, participated heavily in the fur trade and wage economy, and in many cases converted to Christianity (Osgood 1936b).

The modern Gwich'in sociocultural system represents a mix of indigenous and Euro-American culture. Although their relative geographic isolation has contributed to the persistence of key cultural features, such as the Gwich'in language, a number of traditional cultural characteristics have disappeared (Slobodin 1981). The Gwich'in of Arctic Village and Venetie responded to new opportunities under the Indian Re-Organization Act, as extended to Alaska in 1936, applying for and receiving the largest Executive Order Reservation (at 1.8 million acres) in Alaska. Culture change has been particularly rapid since the 1950s, with the Department of Northern Affairs and National Resources in Canada facilitating the development of local schools in Canada, and Alaska statehood introducing a number of changes in Alaska. Organizations such as the Tanana Chiefs Conference and Doyon, Ltd. emerged to address selected key issues for the Gwich'in and other interior Athabascans.

The Tanana Chiefs Conference re-emerged in the 1960s out of the land claims movement, drawing on the tradition of the first meeting of the Chiefs in 1915. The Tanana Chiefs Conference is the largest of the regional Tribal Associations, also termed regional non-profit corporations. The Tanana Chiefs Conference provides a "unified voice advancing tribal governments, economic and social development, educational opportunities and protecting traditional and cultural values" (Tanana Chiefs Conference undated; Nelson 1986). With the signing of ANCSA, interior Athabascans were given the opportunity to enroll in Doyon, Ltd., the Alaska Native regional corporation associated with peoples of the Interior. With stock issued initially to nearly 9,100 shareholders in 1971, the approximately 12.5 million acres of land owned by Doyon makes it the largest private landholder in North America (Doyon, Ltd. 2001). Presently the number of Doyon, Ltd., stockholders approaches 14,000, its total revenues in 1999 ranking it 22nd among all Alaska corporations (Association of ANCSA Regional Corporation Presidents/CEOs 2001). The five businesses affiliated with Doyon, Ltd., cover a broad range of modern economic activities.

Under the terms of ANCSA, the Venetie Indian Reservation was converted to land owned by the Venetie and Arctic Village corporations. Total Gwich'in population in their former homeland was about 2,150 in the late 1960s, about 750 of whom lived in the Alaskan communities of Arctic Village, Chalkyitsik, Circle, Fort Yukon, and Venetie. All of these communities lie well to the east of the TAPS, and none has been identified as likely to experience TAPS-related impacts directly (see Table 3.25-1).

3.25.1.1.4 Koyukon. Among the northernmost Alaska Athabascans, the Koyukon are traditionally associated with the middle Yukon River valley (along with local tributaries) and the lower Tanana River valley (Clark 1984) (see Table 3.25-2). The entry of Euro-Americans into Koyukon territory occurred relatively early for Interior Alaska (beginning in the late 1830s), although interaction was not frequent until the gold rush at the end of the 19th century. Differences among regional divisions in the amount and type of contact with outsiders remained evident into the 1970s, its consequences including differences in the traditional sociocultural behavior that remains.

The greatest changes in the Native sociocultural system seemed to begin in the 1940s, when Koyukon men who had served in the military returned home to share their experiences and increased knowledge of the outside world (Clark 1984). During that decade, or slightly before, the Koyukon had completed the shift from seminomadic to sedentary village life, settling on main waterways in communities that have electricity, running water, and other modern amenities. With sedentary life came formal education and health facilities, as the agencies providing such services could establish schools and health centers in fixed locations. Opportunities for wage labor also increased after World War II, although it often was tied to particular projects and frequently was (and continues to be) seasonal.

With the concentration of people in sedentary villages came concentrated political awareness and influence. The Tanana Chiefs Conference and Doyon, Ltd., serve the Koyukon and other Interior Alaska Athabascans (see Section 3.25.1.1.3). Koyukon Athabascans continue to reside in several interior villages, including several federally recognized Tribes examined in this EIS: Evansville Village, Hughes Village, Manley Hot Springs Village, Rampart Village, Native Village of Stevens, and Native Village of Tanana (see Table 3.25-1). Despite the considerable sociocultural changes experienced among the Koyukon, inhabitants of these six villages continue to rely heavily on traditional subsistence resources; the importance of kinship, respect for elders, and traditional spiritual beliefs similarly persist (Nelson 1983).

3.25.1.1.5 Tanana. Coined by Osgood (1936a) in his assessment of northern Athabascan peoples, the term "Tanana" refers to the collection of hunting and gathering bands that occupied the Tanana River watershed as far downstream as the Kantishna River (McKennan 1981) (see Table 3.25-2). As with most Interior Alaska Natives, the Tanana had little interaction with Euro-Americans until the late 19th century, with widespread interaction accompanying the

gold rush in the Fairbanks area beginning in 1902. The appearance of large numbers of non-Natives brought many changes to the Tanana, including the introduction of diseases that decimated the Native population and fur and meat trading that substantially changed the Native economy. With these economic shifts and the decline of caribou herds early in the 20th century, settlement became sedentary, and permanent villages emerged, changing the former nomadic way of life and many aspects of traditional social structure.

Many of the changes experienced by the Athabascan peoples of Interior Alaska, including the Tanana, are discussed in the recent history of the community of Minto (Olson 1981). Substantial shifts in the Native economy and settlement occurred in Minto during the 20th century — indeed, the community itself even relocated, first established on the Tanana River and subsequently ("New Minto," the present village site) on a tributary of the Tanana. Tanana Athabascans from the surrounding area came to live in Minto. Families with no prior relationships were brought into close proximity. People began to grow food in small gardens and purchase food in stores; formal education was introduced; the village began to operate under a village council (1937); and localized exposure to Christianity began. Minto, which, in many ways is a microcosm of interior Athabascan sociocultural systems, has experienced significant shifts in social organization, political organization, education, religion, and economy. Nevertheless, key elements of the traditional sociocultural system persist — including the importance of subsistence, both as a means of acquiring resources and as a basis for economic and social exchange, and an emphasis on kinship as a basis for social organization and obligation.

As with other interior Athabascans, the modern Tanana sociocultural system represents a mix of old and new. The Tanana Chiefs Conference and Doyon, Ltd., play important roles in the lives of many Tanana — the former focusing more on general political issues and Tribal programs, the latter on managing assets conveyed under ANCSA (see Section 3.25.1.1.3). But tradition also plays an important role in the lives of most modern Tanana Athabascans. Many continue to follow traditional ways — placing a continuing importance on subsistence resources, kin relations, and cooperation within villages and kin groups. Many Tanana continue to live in their interior Alaska homeland, including the Native Village of Minto (a federally recognized Tribe) and the city of Fairbanks. As noted above, Minto was designated as one of the villages directly affected by the TAPS (see Table 3.25-1).

A Shift in Settlement, A Shift in Culture

Traditionally, Ahtna and other Athabascans were highly nomadic, moving seasonally throughout a traditional range to exploit available subsistence resources. With the arrival of Euro-Americans, many Athabascans began to redefine their seasonal mobility — namely by (1) prolonged settlement around trading posts, to enhance trading and access to selected parts of Euro-American goods and technologies , and (2) prolonged settlement around gold mining communities, often providing meat and other key resources to those communities in exchange for Western material culture.

The emergence of public expenditures during the mid- to late-20th century led to a further increase in sedentary settlement, under government pressure for mandatory school attendance and to gain access to key services such as health care. Settlement in communities introduced key changes in sociocultural systems:

- Change in subsistence activities, with changed mobility, and hence shifts in adaptation and economy.
- Frequent interaction with relatively large numbers of nonkin members.
- Need for administrative principals to organize and lead multi-kin-group, and often multi-ethnic (in some villages different Alaska Native tribes), sedentary communities.

3.25.1.1.6 Ahtna. The people known as Ahtna, southernmost of the Athabascans, occupied most of the Copper River valley at the time of initial Euro-American contact (De Laguna

and McClellan 1981) (see Table 3.25-2). Widely dispersed in seminomadic bands, the central role of subsistence was particularly evident in traditional Ahtna culture — determining the locations and sizes of settlements and providing the impetus for collaboration and the basis for political leadership. With the introduction of fur trade, settlement patterns and other key characteristics of traditional culture changed to accommodate this shift in economic emphasis. As with many interior groups, interaction with Euro-Americans intensified notably in the early 20th century and led to an increasingly sedentary life, which in turn contributed to several other sociocultural changes as people from different local and regional bands came into constant contact with one another in larger, year-round aggregations.

The Ahtna persist today, as do many key aspects of their culture — such as the basic clan structure and reliance on subsistence. The total population is uncertain because of the lack of data for the Ahtna as a demographic unit. Recorded numbers never exceeded 600 for any part of their geographic area, and the actual total probably was fewer than 1,000. Following the adoption of Alaska statehood in 1959, indigenous people residing in the Copper River valley founded the Copper River Native Association (Ahtna Tannah Ninnan Association) (De Laguna and McLennan 1981). This organization remains active in offering Tribal programs and services for the Ahtna villages, including natural resources, health, and behavioral health. After passage of ANCSA in 1971, Ahtna, Inc., was formed to receive and manage lands and compensation funds for Alaska Native shareholders in the Copper River valley. Currently, the approximately 1,200 shareholders of Ahtna, Inc., benefit from about 1,528,000 acres of land owned by the corporation, along with the operations of nine subsidiaries and seven joint ventures (Ahtna, Inc. 2001). Most Ahtna Athabascans continue to live in the Copper River valley, primarily as federally recognized Tribes. Several of these were designated as likely to experience direct effects from the TAPS: Chitna Traditional Village, Native Village of Kluti-Kaah (Copper Center), Native Village of Gakona, Gulkana Village, and Native Village of Tazlina (see Table 3.25-1).

3.25.1.1.7 Chugach Alutiiq. The Chugach Alutiiq are part of a larger grouping of peoples, traditionally linked to the mainland coast and related islands (e.g., Kodiak Island), known collectively as *Alutiiq* (and previously as Pacific Eskimos) (Birket-Smith 1953, De Laguna 1956, Clark 1984; Simeone and Miraglia 2000). A summary of what is known of main traditional sociocultural characteristics appears in Table 3.25-2, based on documentation in the mid-19th century. Archeological evidence indicates that by this time, the sociocultural system already had changed considerably from its precontact form (Wooley 1995). The Chugach Alutiiq historically inhabited Prince William Sound east to Cordova. It is likely that the Chugach at one time numbered well into the thousands, many more than the 286 documented in the first census of the area in 1880. Both population decline and the absence of detailed information on the traditional Chugach sociocultural system are due to earlier and more prolonged contact with Euro-Americans along the coast, a characteristic not shared by the other Alaska Native groups examined in this study.

Today, the Chugach Alutiiq in the vicinity of the TAPS reside primarily in Cordova, Chenega Bay, and Tatitlek. All three communities have federally recognized Tribes in residence (Native Village of Eyak, Chenega Bay, and Native Village of Tatitlek, respectively), and have been identified as possibly experiencing TAPS-related impacts, as have other Alutiiq (Unegkurmiut) villages of Nanwalek and Port Graham (and the federally recognized Tribes of the Native Village of Nanwalek and Port Graham Village) on the Kenai Peninsula (BLM 2001a; see also Davis 1984). Chugach Natives, Inc., was formed in 1971 under the ANCSA (43 USC 1601 et seq.) to manage lands and compensation funds conveyed under the settlement and to engage in business on behalf of the Chugach and Unegkurmiut shareholders. The Corporation initially enrolled more than 1,900 persons and received $24 million (Chugach Alaska Corporation 2001). More recently adopting the name Chugach Alaska Corporation, in 2000 this corporation had revenues exceeding $200 million through business activities that included six subsidiaries and several joint

ventures. Many Chugach Alutiiq today earn livings primarily through wage labor, working for businesses in Cordova and other communities or pursuing commercial fishing. However, the importance of Chugach Native heritage persists, primarily in the continued pursuit of subsistence to supplement wage-based economy and the maintenance of social interaction through traditional kinship and obligation networks. Since the mid-1980s the Chugach region has also seen a variety of cultural revival activities, including initiatives by the Tribal governments, the school district, and regional and national museums. As an example, an Alutiiq language curriculum has been integrated in varying degrees in Chenega Bay and Tatitlek (Simeone and Miraglia 2000).

3.25.1.1.8 Eyak. Before the arrival of Euro-Americans, the Eyak were the northernmost sociocultural system of a region that most anthropologists commonly associated with the Pacific Northwest Culture Area (Suttles 1990), although they spoke a language related to Athabascan (Birket-Smith and De Laguna 1976, De Laguna 1990). Inhabiting a 300-mi coastal strip along the Gulf of Alaska, the Eyak lived in semisedentary villages and pursued primarily a coastal-marine adaptation (see Table 3.25-2) (Birket-Smith and De Laguna 1976; De Laguna 1990). The Eyak occupied an area between other sociocultural systems that had important effects on them. The Tlingit to the south had a strong influence on the sociocultural system of the Eyak, whose original system eventually become increasingly similar to that of the Tlingit. The Chugach Alutiiq, to the west, were the main enemies of the Eyak, and warfare between these two contributed to depopulation of both. Contact with Athabascans in Interior Alaska was more limited, in part because of fundamentally different adaptations (coastal for the Eyak, riverine and terrestrial interior for the Athabascans), coupled with geographic barriers (mountains) beyond the Copper River valley separating the coast from the interior.

According to academic scholarship, the Eyak currently occur only in very small numbers, and little of their traditional sociocultural system persists. This assessment of cultural affiliation and continuity highlights blood quantum (or genealogy) and language ability. Within this perspective, a discussion of Eyak culture in the 21st century is problematic. ANCSA led to the formation of a village corporation called Eyak in 1971, an organization that included very few Eyak people — of the 319 shareholders in 1985, only 2 could actually claim Eyak heritage (De Laguna 1990). The contention that only one full-blooded Eyak remained as of 1992 is also asserted by some Eyak themselves (interview with Lankard and Jones, in *Essential Information* 1993). Although sociocultural traditions are not transmitted genetically, kin ties to cultural mentors in the home make the consistent transmittal of traditions more likely.

An alternative perspective on membership and cultural continuity is asserted by the Native Village of Eyak, the federally recognized Tribe based in Cordova. The Tribe reports a membership of about 500 in Cordova, and states that elders recognize more than 100 of these individuals as Eyak descendents. The remainder of the Tribe consists of individuals with Alutiiq, Tlingit, Athabascan, Haida, and Iñupiat heritage) (Heinrichs undated-a, 2002). The Tribe has emerged in recent years as an ambitious political and services organization, with significant programs in environmental protection, resource monitoring, spill response, health care, and cultural revitalization. Beginning in 1994, the Tribe sponsored a Sobriety Celebration to advocate cultural identity as a foundation for sobriety. (Native Village of Eyak, undated-b).

3.25.1.2 Alaska Native Claims Settlement Act

The Alaska Native world changed dramatically on December 18, 1971, with the passing of ANCSA. Rooted in federal commitments to address Native land rights, the Statehood Act, and the discovery of oil at Prudhoe Bay, ANCSA was a comprehensive settlement of Native claims to aboriginal title for virtually the entirety of Alaska. ANCSA extinguished aboriginal title claims (including aboriginal hunting and fishing rights) to more than 325 million acres of land, clearing land title and removing barriers to continued state land selections and creation of a transportation corridor for development of the Prudhoe Bay oil reserves. In exchange, ANCSA conveyed

Alaska Native Regional Corporations

Under provisions of the Alaska Native Claims Settlement Act (ANCSA), 12 for-profit corporations with land entitlement were formed in 1971 for Alaska Natives residing in the state. A 13th corporation, which has no land entitlement, represents Alaska Natives elsewhere. At the time of original enrollment, shareholders had to be at least 25% Alaska Native. In 1999, 10 of the 36 most successful Alaskan businesses were Alaska Native regional corporations, with 5 of these corporations among the top 10 businesses in the state (Association of ANCSA Regional Corporation Presidents/CEOs 2001).

44 million acres of land (which excluded the TAPS Corridor and land to be used for the Valdez Marine Terminal), provided for $962.5 million in monetary compensation, and established regional and village corporations to manage these assets. ANCSA did not terminate Alaska Native tribes nor eligibility for national programs intended to fulfill the federal constitutional trust responsibility to Native Americans. Although silent on specific protections for subsistence, the legislative history for ANCSA indicated that Congress expected the Secretary of the Interior and the Governor of Alaska to use existing authorities to protect Alaska Native hunting and fishing (Arnold et al. 1978; Burch 1984; McNabb 1992).

The evolution of Alaska Native political self-assertion began in the early 20th century, but gathered its current momentum in the movement leading to ANCSA (Philp 1981; Haycox 1986/87; McBeath and Morehouse 1980; Mitchell 2001). With passage of the Alaska Statehood Act of 1958, Alaska Native land claims grew in intensity to become an area of dispute that gained national attention as the state claimed land that Alaska Natives considered their own (Berry 1975). With the discovery of large oil and mineral deposits in the 1960s, including the Prudhoe Bay oil fields that ultimately led to the construction of the TAPS, disputes increased. In response, Alaska Natives began to organize themselves — first into local organizations and then regional organizations (Lantis 1973). Eight of these regional organizations combined to form the Alaska Federation of Natives, the organization that conducted much of the lobbying for ANCSA.

ANCSA divided Alaska into 12 regions, providing the basis for forming 12 regional for-profit corporations (Map 3.25-2). (A 13th corporation also was formed to represent nonresident Alaska Natives, although it had no geographic base nor land entitlement.) These regional corporations had four primary responsibilities (Burch 1984):

- Receive all cash payments made under ANCSA and invest or distribute the money to village corporations and individuals;
- Become owners of the surface estate of some land and the subsurface estate of all land selected under ANCSA;
- Supervise the creation of village corporations and assist those corporations in the selection of land and development of business ventures; and
- Invest and operate businesses on a for-profit basis.

Village corporations, in turn, emerged as local counterparts to the regional corporations, selecting and managing the surface title to land around villages (often chosen for value as subsistence lands), initially dispersing cash and title to existing homesites to individuals, and subsequently dispersing dividends from corporate activities. The main difference between village and regional corporations was the ability of the former to organize on a for-profit or nonprofit basis, although the regional corporations have proven by far the most successful (Mitchell 2001). As is the case with regional corporations, the advent of village corporations also introduced new concerns to Alaska Native sociocultural systems — such as the availability of shares to Natives born after corporate formation and struggles with bankruptcy faced by some corporations.

ANCSA and the resulting emergence of two layers of corporate structure introduced additional change to Native peoples who had witnessed considerable changes since the

arrival of Euro-Americans centuries before. Virtually all groups examined here initially consisted of seminomadic egalitarian or ranked bands with achieved political leadership and limited political ties outside of local extended kin units. Settlement in permanent villages brought more people into single, permanent communities and required the emergence of a leadership structure. Extension to Alaska in 1936 of the Indian Reorganization Act of 1934 provided for Alaska Natives with a "common bond of occupation, or association, or residence within a well-defined neighborhood or rural district" to organize a self-governing Tribal council with a written constitution and by-laws (Berger 1985). The Indian Reorganization Act, as amended, thus extended legal recognition to formally elected tribal councils as governing bodies separate from federal, state, and local municipal governments in the United States treating Alaska Native Tribes the same as Tribes in the rest of the United States. ANCSA represented a significant departure from earlier Indian policies, conveying land and compensation funds to Alaska Native corporations rather than Tribes. However, ANCSA did not terminate Tribes, and in the early 1990s the U.S. Department of the Interior formally recognized 227 Alaska Native Tribes. The result is a complex network of local and regional corporations and federally recognized Tribal governments.

Alaska Native peoples whose ancestors often were seminomadic hunter-gatherers today live in sedentary settlements where they have adapted many elements of their traditional sociocultural systems to new conditions. Most Alaska Natives are associated with a federally recognized Tribe as well as a village and a regional corporation. These three entities may or may not share common goals and objectives. The emergence of Alaska Native political awareness, helping to support pursuit of their own interests, has had many positive consequences for the Native population of Alaska. For most Alaska Natives, these changes represent a selective incorporation of new opportunities while maintaining important cultural traditions. The results are a series of adapted sociocultural systems that strive to preserve key components of the past while they develop increasing abilities to respond to challenges of the natural and human environment of modern Alaska.

3.25.1.3 Overview of Modern Alaska Native Sociocultural Concerns and Benefits

As is the case with many indigenous groups in the United States, Alaska Natives today struggle with many social problems. It is difficult to identify single causes of these problems. As discussed throughout Section 3.25.1.1, many of the sociocultural systems considered here face the ongoing challenge of striking the right balance between the traditional world of their aboriginal ancestors and the world of modern America. Moreover, the socioeconomic reality of most Alaska Natives finds them with limited financial resources — resources that might provide options in life that lead to fewer social problems, or a range of assistance to help address such problems. The final report of the Alaska Natives Commission in 1994 describes Alaska Natives as peoples at risk of permanently becoming part of America's underclass (Alaska Natives Commission 1994). Despite ANCSA, the success of certain Alaska Native regional corporations, growing pride and connection with their sociocultural heritage, and increased political awareness and influence, Alaska Natives experience high levels of violence, substance abuse, and behavior leading to personal and social dysfunction.

One of the greatest problems facing Alaska Natives in 2002 continues to be substance abuse, particularly alcohol abuse. Problems with alcohol have a long, grim history in Alaska Native sociocultural systems, having frequently accompanied early interaction with Euro-Americans. The consumption of alcohol by Natives, occasionally involving alcohol production as well, often occurred during the emergence of commercial fur trapping, commercial whaling, and the various gold rushes. However, it became a significant problem shortly after Alaska statehood in the late 1950s, seemingly increasing with the emergence of government programs to help the

underprivileged in the fledgling state (Alaska Natives Commission 1994). By the early 1970s, excessive alcohol consumption by Alaska Natives had become a major problem in many places (e.g., Kruse et al. 1981), emerging statewide as the leading cause of death among Alaska Natives (Alaska Natives Commission 1994). The problem continued to grow. During the 1980s, one Alaska Native died directly as a result of alcohol consumption every 12 days — a rate three-and-one-half times that of non-Natives in Alaska.

Another social problem that occurs at alarming rates among Alaska Natives is suicide. This problem also can be traced back to the 1950s, when the steady growth in suicide rate began (Alaska Natives Commission 1994). Once again, the data largely tell the story. By 1981, the suicide mortality rate for Alaska Natives had reached 42 per 100,000 people, well above the national average. By 1986, the rate had increased to 58 per 100,000 people, and in 1989 it had grown even further to 69 per 100,000. During the 1980s, one Alaska Native died every 10 days from suicide. The problem appears to be prevalent particularly among males, notably young men aged 20–24 years. In 1982–1984, the suicide mortality rate for Alaska Natives aged 20–24 was 228 per 100,000 population (Alaska Federation of Natives statistics, cited in Alaska Natives Commission 1994). By 1989, the rate for these young men had increased to 403 per 100,000 people, in excess of 30 times the national rate. Fortunately, suicides among Alaska Natives have declined slightly in recent years. Although the basic pattern of suicide has persisted — more prevalent in males than females and in persons aged 20–24 years — the overall rate for all Alaska Natives had fallen by about 30% to 48.4 per 100,000 people in 1998, compared with 23.7 for the state of Alaska as a whole (Alaska Bureau of Vital Statistics 1999). This decline coincides with increased efforts to help reduce suicides in Alaska, in both urban and rural settings. Despite these improvements, the suicide rate of Alaska Natives remains more than double that of non-Natives in the state and in the rest of the United States.

In contrast, modern Alaska Native sociocultural systems also have experienced many positive developments in recent years. Among the most important of these developments is the dramatic growth in Alaska Native Tribal administration of health care, behavioral health, and substance abuse prevention programs. Initiatives for cultural renewal as a foundation in prevention and treatment are now widespread in what is often termed the *sobriety movement*. Federal funds to the Tribal sector have grown significantly during the 1990s to support such activities. Economic opportunities alongside the subsistence lifestyles have generally increased over the past several decades even in rural communities. Such economic options can add convenience and security to the traditional activities that many value so highly (see Section 3.24-2). In conjunction with state and federal funded programs and associated employment, the Permanent Fund Dividend, and economic benefits through regional and village corporations, such opportunities for wage employment have provided Alaska Natives with more cash than in the past — enabling them to purchase many modern amenities. A number of state-funded programs, public services, and infrastructure improvements also are contributing to the improvement of Alaska Native lives — such as the General Fund Community Support Programs (ADCBD 2002a,b). Such funds help provide and maintain schools, health care facilities, and transportation infrastructure (roads, rural airports) to much of rural Alaska (North Slope Bureau 1999). The APSC also financially supports various community programs; although these programs do not necessarily have a rural focus, they certainly contribute to the lives of Alaska Natives. Local financial resources also have contributed to the development of key infrastructure and services that have benefited Alaska Native sociocultural systems, such as occurred during the 1980s and 1990s in the North Slope Borough (Strohmeyer 1997). Federal funds to Alaska Native Tribal governments and regional Tribal associations have grown significantly during the 1990s. The EPA has been particularly active in funding Tribal environmental programs. Finally, the financial success of certain Native regional corporations has provided additional resources to shareholders, again providing important economic options in a state where wage employment in rural settings can be difficult to

find (Association of ANCSA Regional Corporation Presidents 2001).

3.25.2 Non-Native Rural Alaskan Sociocultural Systems

In addition to Alaska Natives, the alternatives considered in this EIS have important implications for non-Natives in Alaska as well. For most non-Natives, sociocultural systems are essentially those found throughout most of the modern United States — allowing for variations on this general theme due to differing ethnic composition and other characteristics. Although these sociocultural systems have evolved over the years as well, they have experienced considerably less change than their Alaska Native counterparts. Many of the most important impacts on Alaska non-Natives are considered within the economic analysis, with the existing conditions described in Section 3.23. A sector of non-Native society in Alaska that may also experience impacts but is not specifically covered in the economic analysis is rural Alaskans.

Rural Alaskans, Native and non-Native alike, usually live differently than their urban counterparts. Apart from the obvious contrasts in their physical settings, the most notable distinction is the isolation in rural Alaska and the tradition (and necessity) of both self-reliance and community cooperation that has developed there. This combination of self-reliance and mutual support is consistent with the history of many Alaska non-Natives, who have either descended from individuals who came to the remote frontier to earn a living trading furs, mining gold, or the like, or who themselves came to pursue such endeavors (Haycox 2002). In many ways, it is consistent with the need to survive in harsh natural surroundings where assistance beyond one's self or neighbor was far away. One of the most noteworthy differences between urban and rural non-Natives in Alaska appears in the rural economy, which relies heavily on subsistence. This topic is examined in Section 3.24, which focuses specifically on subsistence as a rural endeavor, and as a result will not be examined here.

A number of communities located in the vicinity of the TAPS qualify as rural, both according to the U.S. Bureau of the Census definition, namely a population of fewer than 2,500 persons, and according to federal subsistence regulations, which designate rural areas for the harvesting of fish and game (Office of Subsistence Management 2001). By virtue of geographic proximity to the TAPS, reliance at least partially on a subsistence harvest area that includes the TAPS, or some combination of these factors, these communities may experience impacts from the continued operation of the pipeline and related facilities.

Several of these communities, such as Wiseman in Interior Alaska, share a broadly similar history tied to gold prospecting in the early 20th century and provide examples of the sociocultural conditions that seem to characterize survival strategies of small non-Native settlements in rural Alaska (Scott 1998). Others, such as Moose Creek and North Pole, appear by virtue of their relatively small populations and proximity to the TAPS to be sociocultural settings similar to Wiseman. However, these latter communities are, in fact, part of greater Fairbanks — that is, they are not rural by federal subsistence standards and are included in this discussion largely because of their geographic proximity to the TAPS. Table 3.25-3 lists the non-Native rural communities in the vicinity of the TAPS and presents selected characteristics. Demographic data on these communities are presented in Table 3.29-1 and thus are not repeated here.

TABLE 3.25-3 Non-Native Rural Communities in the Vicinity of the TAPS

Name[a]	Background	Basic Community Economy	Area (mi^2)[b]
	North Slope		
Deadhorse	Founded in the mid-1970s as the land base for Prudhoe Bay offshore oil drilling; exists as a base, providing hosing and services for about 5,000 transient workers associated with offshore drilling and the TAPS.	Wage employment, primarily in the oil industry or as indirect jobs providing goods and services to oil industry employees.	NA[c]
Prudhoe Bay	Developed in 1970s to support oil-drilling operations; origin of TAPS.	Wage employment associated with the oil industry.	558.1
	Yukon River Drainage		
Big Delta	Originally a road house established in 1903 at the junction of Delta and Tanana Rivers; later benefited from highway and TAPS construction and state-funded agricultural projects.	Mainly wage labor, although many businesses and individuals rely on Ft. Greely (slated to close); also agriculture, government employment, and tourism.	61.1
Coldfoot	Founded by gold prospectors in 1900, largely abandoned by 1912; survives mainly as location for services to travelers along Dalton Highway.	Wage employment in government and private sector (services to travelers).	37.0
Delta Junction	Founded in 1903 at a key intersection of trails in Interior Alaska, becoming the nearest civilian community to what would become Ft. Greeley in 1942; currently the main town in an important agricultural area of Alaska.	Wage employment primarily at the nearby military installation , in commercial agriculture, in state or local government, or in private industry (largely APSC).	17.3
Ester	Began as gold mining camp in early 1900s, which continued through mid-1900s.	Wage employment at University of Alaska and businesses in Fairbanks and its suburbs.	64.7
Fox	Began as gold mining camp in early 1900s.	Primarily wage employment in small local businesses and in nearby Fairbanks.	13.6
Harding-Birch Lakes	Founded primarily as summer recreation site for Fairbanks residents.	Some wage labor, although mostly seasonal associated with summer recreation.	233.6
Livengood	Began as gold mining camp in 1914.	Limited wage employment, mainly in providing roadside services along Dalton Highway.	267.9
Moose Creek	Suburb of Fairbanks that has grown primarily due to proximity of Eielson Air Force Base and North Pole.	Wage labor, primarily at Eielson Air Force Base and a range of businesses in Fairbanks and it suburbs.	1.7

TABLE 3.25-3 (Cont.)

Name[a]	Background	Basic Community Economy	Area (mi^2)[b]
North Pole	Homesteaded in 1944; has grown primarily due to proximity to Fairbanks and Eielson Air Force Base.	Primarily wage employment for a range of businesses and government agencies in Fairbanks and at Eielson Air Force Base.	4.2
Pleasant Valley	Largely has developed as suburb of Fairbanks.	Primarily wage employment for a range of Fairbanks businesses and government agencies.	30.3
Salcha	As late as the early 20th century, an Alaska Native village; evolved into a small non-Native community of occasional-use homes owned by residents of nearby Fairbanks.	Primarily wage labor for businesses in Fairbanks, in commercial fishing, and construction.	74.2
Two Rivers	Community has grown primarily with expansion of Fairbanks.	Range of wage employment both local and in Fairbanks.	28.5
Wiseman	Began as supply center for miners in the vicinity in 1911.	Subsistence plays central role; some wage labor providing roadside services and working for North Slope Borough; also commercial fishing.	78.1
	Copper River Basin		
Copperville	Developed during TAPS construction.	Primarily wage labor, mainly government and small businesses; subsistence, particularly by Alaska Native residents.	1.4
Glennallen	Founded as small community along Glenn Highway near its intersection with Richardson Highway.	Primarily wage employment for government agencies and small businesses serving commuters and tourists along Glenn and Richardson Highways (including visitors to Wrangell-St. Elias National Park and Preserve).	114.9
Kenny Lake	Originally homesteaded in 1960s for agricultural purposes; much property subsequently subdivided and sold for residential use.	Primarily wage labor in commercial agriculture and small businesses; some employment in tourism.	195.2
Paxson	Began as a road house in the early 20th century; subsequently grew as small area for services at intersection of Denali and Richardson Highways.	Primarily wage labor, servicing travelers along the two highways (most seasonal); also government employment; some subsistence.	318.3
Tonsina	Began as U.S. Army telegraph station in 1902; several lodges followed, but most growth has followed TAPS development.	Some wage labor at roadhouses, highway maintenance camp, and TAPS PS 12; subsistence supplements wage income.	148.0

TABLE 3.25-3 (Cont.)

Name[a]	Background	Basic Community Economy	Area (mi^2)[b]
	Prince William Sound and Lower Cook Inlet		
Cordova	Town founded in 1909, as terminus for Copper River and Northwestern Railroad (copper ore loaded at Cordova for shipping to smelters); evolved into fishing community beginning in the 1940s.	Primarily wage employment in commercial fishing, housing both a large fishing fleet and fish processing plants; also several sources of government employment.	75.7

a Excludes College, Fairbanks, and Valdez, all of which have populations in excess of 2,500, the cut-off used by the U.S. Bureau of the Census to define rural communities.

b Refers to total area of land and (when appropriate) water under jurisdiction of the community.

c NA = information not available.

Sources: ADCED (2001b); Scott (1998).

3.26 Cultural Resources

Cultural resources include archaeological sites and historic structures and features that are protected under the National Historic Preservation Act of 1966, as amended; the Archaeological Resources Act of 1979; and the Antiquities Act of 1906. Cultural resources also include traditional cultural properties (TCPs) that are important to a community's practices and beliefs and that maintain a community's cultural identity. Cultural resources that meet the eligibility criteria for listing on the *National Register of Historic Places* (NRHP) are considered "significant" resources and, when present, must be taken into consideration during the planning of federal projects. Federal agencies also are required to consider the effects of their actions on sites, areas, and other resources (e.g., plants) that are of religious significance to Native Americans and Alaska Natives, as established under the American Indian Religious Freedom Act. Native American and Alaska Native graves, burial grounds, and associated funerary objects are protected by the Native American Graves Protection and Repatriation Act.

The following discussion presents an overview of information on known cultural resources along the TAPS corridor. Because the pipeline traverses a broad range of environmental settings along its 800-mi route, this overview groups cultural resources into three main geographic regions on the basis of environmental characteristics and the broadly similar cultural remains found in each. These regions, from north to south, are the North Slope, Central Region, and Valdez/Prince William Sound (see Map 3.26-1). The North Slope area consists of the northernmost 145 mi of the pipeline, from Prudhoe Bay to about Galbraith Lake. The Central Region from MP 145 to 775 contains the Brooks Range, the Interior Forest Region, the Alaska Range, the Copper Plateau, and the Pacific Coastal Mountains. The final region, Valdez/Prince William Sound, consists of the final 25 mi of the pipeline extending to the Pacific Coast.

Cultural Resources

The term *cultural resources* refers to surviving physical links to our cultural past. Included are archaeological sites, historic structures and features, and other remnants of past societies and lifestyles. The term also encompasses properties that have played important roles in the cultural traditions of specific social or ethnic groups. These features, called traditional cultural properties, include such things as sacred locations and land features, burial sites, or other revered locations or features important in defining cultural and religious traditions.

Cultural resources are important for scientific reasons because they can help us understand how former societies functioned and how ancient people lived. They are also important for less tangible reasons, providing links to our histories and our cultural and social ancestors.

3.26.1 Archaeological Context

The archaeological context of Alaska provides a framework for understanding the types and ranges of sites that have been found within the project area. The prehistoric, ethnohistoric (cultures that existed at the time of first contact with Euro-Americans), and historic contexts for the project area are summarized in Tables 3.26-1 and 3.26-2. The presentation in the referenced tables focuses on current information for the TAPS ROW area.

3.26.2 Known Cultural Resources

A number of cultural resource surveys and investigations have been conducted within the TAPS corridor (Cook 1970, 1971, 1977; Haggarty et al. 1991; Hall and Gal 1988; Lobdell 1986; Workman 1970, 1972). These surveys, in

TABLE 3.26-1 Prehistoric Context for Areas along the TAPS ROW[a]

Zones and Periods	North Slope, MP 0–145	Central Region, MP 145–775	Valdez/Prince William Sound, MP 775–800
Ecozones	*Arctic Coastal Plain:* nearly level plain underlain by permafrost with tundra vegetation. Arctic Foothills: ridges, mesas, and plateaus underlain by thick permafrost.	*Brooks Range Mountains Interior Forest:* boreal forest with wide river channels. Alaska Range Mountains, Copper Plateau Mountains, Pacific Coastal Mountains.	*Western Hemlock-Sitka Spruce Forest:* steep footslopes, outwash plains, floodplains, river terraces, and river deltas.
Periods			
Ethnohistoric	*Taremiut and Nunamiut* (Post A.D. 1880) Dwellings: khelik (skin tent) and ivrulik (winter moss house).	*Gwich'in, Koyukon, Tanana, and Ahtna* (Post A.D. 1800) Dwellings: bark-covered huts and skin-covered dome lodges.	*Chugach, Alutiiq, Eyak, and Tlingit* (Post A.D. 1700) Dwellings: plank houses and semisubterranean houses.
Prehistoric	*Birnirk/Thule* (A.D. 900–1880) Key material culture elements: toggle harpoon heads, sealing darts, pottery, boats, and sleds. Dwellings: rectangular and semisubterranean houses with entrance tunnels.	*Athabascan Tradition* (A.D. 1–1800) Key material culture elements: stemmed points and nonlithic artifacts of bone, antler, birch bark, and copper. Dwellings: semisubterranean houses.	*Chugach Phase* (A.D. 1000–1700) Key material culture elements: splitting adzes and stone lamps. Dwellings: plank houses.
	Arctic Small Tool Tradition (2,000 B.C.–A.D. 1000) Key material culture elements: small stone-end blades, side blades, microblades, bifacial burins, and bifaces. Alt. Designation: Denbigh Flint Complex. Norton Tradition, Choris Tradition, and Ipiuktak Tradition. Dwellings: elliptical and rectilinear houses in latter half of tradition.	*Late Microblade Complex or Late Denali* (1,500 B.C.–A.D. 500) Key material culture elements: microblades and possibly side-notched points.	*Palugvik Tradition* (400 B.C.–A.D. 1100) Key material culture elements: slate blades, ulu-shaped scrapers, adzes.
	Northern Archaic Tradition (2,500 B.C.–A.D. 900) Key material culture elements: side-notched projectile points. Settlement: removed from coast.	*Northern Archaic Tradition* (4,000–2,000 B.C.) Key material culture elements: side-notched projectile points and microblade technology.	*Uqciuvit Tradition* (4,000 B.C.–A.D. 1) Key material culture elements: slate blades.
	Paleoarctic Tradition (8,500–5,000 B.C.) Key material culture elements: microblade technology.	*American Paleoarctic Tradition or Denali Complex* (10,000–5,000 B.C.) Key material culture elements: microblade technology.	*American Paleoarctic Tradition* (10,000–4,000 B.C.) Key material culture elements: microblade technology.
	Northern Paleoindian Tradition (10,000–6,800 B.C.) Key material culture elements: lanceolate points.	*Beringian Tradition* (13,000–11,000 B.C.) Key material culture elements: microblade technology and wedge-shaped microblade cores.	

[a] Compiled from information in Giddings (1967); Baudi (1969); Dumond (1987); Bockstole (1979); Davis et al. (1981); Anderson (1984); Naske and Slotnick (1987); Bowers et al. (1995); TAPS Owners (2001a); West (1996).

TABLE 3.26-2 Alaska Historic Time Line[a]

Dates	North Slope	Central Region	Valdez/Prince William Sound
1977	TAPS construction is completed from Prudhoe Bay to Valdez.		
1973	Congress passes the Trans-Alaska Pipeline Authorization Act.		
1968	Oil is discovered in Prudhoe Bay.		
1959	Alaska becomes 49th state.		
1950s	Military buildup occurs during Cold War.		
1939–1943	Military establishes several bases to protect Alaska during World War II.		
1912	Alaska is named a territory.		
1897–1900		Klondike Gold Rush	
1878			First fish canneries are established.
1872–1881	Commercial whaling.	Gold discoveries in southeastern Alaska.	
1868	United States places Alaska under military and Treasury Department control.		
1867	United States purchases Alaska from Russia.		
1853–1865		Mining begins in southern Alaska.	
1847		Fort Yukon is established by Hudson Bay Company.	
1826	First non-Natives sight Point Barrow.		
1824		Russians begin exploring the Interior. Later, missionaries and fur trappers follow the explorers' route.	
1797			First Russian exploration up Copper River occurs.
1795			First Russian Orthodox Church is established on Kodiak Island.[b]
1793			First Russian settlement is established on Prince William Sound.
1784			First Russian settlement is established on Kodiak Island.[b]
1741	Russian Vitus Bering is the first European to reach Alaska,[c] quickly followed by English and Spanish explorers.		

[a] Compiled from information presented in Hosley (1981); Van Stone (1984); Saleeby (2000); U.S. Army (1969); Gibson (1976); Grinev (1997); Fairbanks North Star Borough Public Library (2001).

[b] West of Valdez/Prince William Sound.

[c] East of Valez/Prince William Sound.

conjunction with other smaller efforts, identified 1,062 cultural properties within 1/2 mi of the TAPS (State Historic Preservation Office [SHPO] 2001). Three archaeological districts and three historic districts also occur within this area. Of the known sites, 3% are located within the pipeline ROW (Table 3.26-3). Twenty-eight percent of known sites are prehistoric or have a prehistoric component, and 71% are historic or fall into the later historic period and other categories (e.g., Cold War, multi-component). Prehistoric sites identified within 1/2 mi of the pipeline include raw material collection sites, hunting camps, campsites, villages, house pits, caches, a caribou drive fence, quarry sites, a pictograph, and a rock shelter (SHPO 2001; TAPS Owners 2001a). Historic sites include Alaska Native traditional land use sites, roadhouses, cabins, homesteads, telegraph line stations, trading posts, cemeteries and individual grave sites, a steamboat, military sites, historic trails, Gold Rush towns, mining sites, dredges, railroad features, aircraft wreckage, and other historical structures.

Details on several archaeological sites in the vicinity of TAPS have been obtained through excavations. The Gallagher Flint Station, located less than 1/2 mi from the TAPS in the North Slope, shows evidence of numerous occupations and has National Landmark Status (Dixon 1975; Bowers 1983; Ferguson 1997). Other important sites found on the North Slope include the Putu and Bedwell sites (Alexander 1974; Reanier 1995), the Hilltop site (Reanier 1995), the Mosquito Lake site (Cook 1977), and the Aniganigaruk site (Corbin 1971, 1975). Key sites in the Central Region include the Healy Lake site (Cook 1969, 1975; Holmes and Cook 1999), Broken Mammoth site (Yesner 1994), Swan Point site (Holmes et al. 1996), and the Chugwater site (Maitland 1986; Lively 1988). Two sites identified in the Prince William Sound/Valdez area are the Palugvik site and the Uqciuvit site (Yarborough and Yarborough undated). Information from these excavated sites has provided researchers with much of their understanding of prehistoric Alaska along the TAPS, as presented in Table 3.26-1.

Although a relatively large number of archaeological sites have been identified in the vicinity of the TAPS, several key issues remain unresolved. Many of these issues concern the early surveys for cultural resources, including those immediately preceding pipeline construction. The exact areas surveyed and the actual locations of the sites identified in many cases remain unclear (Cook 2001; Potter et al. 2001). In some cases, it appears that sites were

TABLE 3.26-3 Cultural Resources Located along the TAPS[a]

Proximity to Pipeline[b]	Total Number of Cultural Resources	Archaeological Sites	Historic Structures and Cemeteries	Eligible for NRHP Listing	Not Eligible for NRHP Listing	Eligibility Not Yet Determined
Within 52 ft of the TAPS	33	27	6	2	2	29
Within 600 ft of the TAPS	274	131	143	7	16	251
Within 1/2 mi of the TAPS	1,062	294	768	97	119	846

a Excluding traditional cultural properties.

b The three distances used here represent the width of the ROW (104 ft) on state lands, the maximum distance of a known site that extends under the ROW (600 ft), and the distance considered for sensitive items in Stipulation 2.3.1.1 of the Federal Grant (1/2 mi). Based on current data.

identified but never officially recorded (Breiby 2001; Dale 2001). Also, on the earliest surveys, which covered the bulk of the pipeline corridor, historic archaeological sites often were not recorded (TAPS Owners 2001a). Determination of significance for cultural resources also remains a problem. Thirteen archaeological sites within a 1-mi corridor have been determined eligible for listing on the NRHP, and three archaeological sites have been determined ineligible. However, the eligibility of the remaining 278 known archaeological sites in the corridor remains undetermined. This lack of eligibility determination is an important information gap in evaluating the effects of the proposed action on cultural resources.

Regulations are in place to protect and monitor cultural resources. Stipulation 1.9.1 of the Federal Grant requires surveillance and inspection of the TAPS for archaeological values. Stipulation 1.9.2 states that if any archaeological or historical sites are discovered, APSC must report the information to the Authorized Officer and an archaeologist. Section 106 of the NHPA requires consultation with the SHPO and any affected Tribes as appropriate to ensure the consideration of cultural resources during a federal undertaking (expansion of ROW, development of new material sites, etc.).

To apply the Section 106 requirements more effectively to the complex task of operating and maintaining the TAPS, the BLM, the Alaska SHPO, and the Advisory Council on Historic Preservation are in the process of developing a programmatic agreement for the TAPS. The 21 federally recognized Tribes and the public are being provided an opportunity to comment on the agreement prior to its enactment. This agreement clarifies the procedures for considering cultural resources along the TAPS and formalizes the relationships between the various agencies.

APSC has general procedures to ensure that cultural resources are taken into consideration. Before any activity is started, the APSC "permitted activity initiator" (generally the person in charge of a planned project or activity in the ROW) consults the *Environmental Atlas of the Trans-Alaska Pipeline System* (APSC 1993). The atlas includes information on known cultural resource site locations. APSC must obtain permits to conduct projects in areas that contain any known cultural resource material. Section 5.5 of APSC Environmental Protection Manual (EN-43-1) states that if any cultural material is discovered during activities relating to the operation or maintenance of the TAPS that work will stop immediately and a Field Environmental Generalist, the Environment Team, or the Land Section in the Fairbanks Business Unit Support Management Group will be contacted (APSC 1998). The Section 106 process is followed for areas inside and outside the ROW.

3.26.3 Traditional Cultural Properties

Information on TCPs, which often include localities that are sacred to a particular indigenous group, frequently is not made available to parties outside the group. Few TCPs are currently listed in the site files of the Alaska SHPO. However, scarcity of such sites in the database does not necessarily indicate that only a few TCPs actually exist. As discussed in Section 4.3.22, procedures will be followed and tribal consultations about areas that might be disturbed will be conducted on a case-by-case basis. Such action will ensure compliance with Section 106 of the NHPA, the American Indian Religious Freedom Act, and Executive Order 13007, which provides Alaska Natives with access to sacred sites on federally held lands.

3.26.4 Historic Structures

Historic structures along the TAPS include roadhouses, mining and related sites, cemeteries, and military buildings. Historic building surveys have been conducted at Fort Greely and Eielson Air Force Base (Denfield 1998; Tetra Tech, Inc. 1999). Ninety historic structures located within a half-mile of the TAPS have been determined eligible for listing on the NRHP. The majority of the eligible properties are military buildings, others include early 20th century roadhouses, cemeteries, and mining-related structures. Two historic districts also have been identified.

One historic structure worth noting is the TAPS itself. The construction of the TAPS occurred following the discovery of large oil deposits in Prudhoe Bay on Alaska's North Slope in 1968. A pipeline was judged as the best method for moving oil from the North Slope to tankers bound for the lower 48 states. Numerous legal controversies involving land rights, Alaska Native rights, and environmental issues delayed pipeline construction. The controversy over whether the pipeline would be constructed ended with passage of the Trans-Alaska Pipeline Authorization Act in November of 1973. Construction of the TAPS began in March 1975, and the pipeline began carrying oil in June 1977. The TAPS consists of 800 mi of pipeline (about 420 mi of which is elevated and the remainder is belowground), 11 pump stations, and the Valdez Marine Terminal, where the oil is transferred to tankers. Pipeline operation has continued uninterrupted since 1977, with only minor shutdowns for repairs.

An historical evaluation of the TAPS has not been conducted. However, because of its place in history as an example of remarkable engineering and construction over a short period of time, its central role in the economy of Alaska, and its contribution to the domestic oil industry, the TAPS infrastructure could be considered potentially eligible for listing on the NRHP.

3.27 Land Uses and Coastal Zone Management

This section discusses current land ownership and land use patterns along the TAPS ROW and coastal zone management activities in the North Slope Borough and Valdez coastal zones.

3.27.1 Land Ownership and Uses

TAPS and its associated facilities are located primarily on federal and state public lands. Land uses along the TAPS corridor include recreational, wildlife habitat and other natural resource conservation, commercial, municipal, residential, agricultural, Native corporations, subsistence activities, and military reservations.

3.27.1.1 Land Ownership

Most of the pipeline and its associated facilities are on public lands. As of November 1999, 47% of the TAPS ROW was on federal lands and 43% was on state lands. Some state lands have been conveyed to municipalities and boroughs with the TAPS ROW reserved (TAPS Owners 2001a). The remaining 10% of the ROW is on private lands owned by Alaska Native corporations (under ANCSA), individual Alaska Natives (under the Alaska Native Allotment Act), and other private landowners, including the TAPS Owners. Most privately owned parcels are in the Fairbanks, Delta Junction, Copper River Basin, and Valdez areas. In addition, the TAPS Owners have acquired property at PS 1, 8, 9, the Nordale Yard, the North Pole Metering Station, both sides of the Tanana River crossing, the Valdez Marine Terminal, the Fox area (including Engineer Creek), and five other small parcels. With the exception of one parcel currently under negotiation (see below), valid rights-of-way for construction and operation of TAPS exist on all parcels, public or private (TAPS Owners 2001a) (Map 1-2). In addition, the BLM retained administration of the TAPS ROW on all lands conveyed to Alaska Native corporations.

Major changes in land ownership have occurred since the TAPS owners acquired the ROW. Federal lands have been conveyed to ANCSA corporations and to the state, state lands to municipalities and boroughs, and municipal and borough lands to private individuals. All privately owned parcels are subject to perpetual right-of-way agreements acquired by the pipeline owners (TAPS Owners 2001a).

Federal lands have also been conveyed to Native regional corporations, subject to the TAPS ROW. In addition, six Alaska Native allotments within the TAPS ROW have been

Land Ownership and Use along the TAPS ROW

The right-of-way for the TAPS consists of federal (47%), state (43%), and private (10%) land. Private landowners include the TAPS Owners, Alaska Native corporations, individual Alaska Natives, and other private owners.

North of the Yukon River, the area through which the pipeline passes is largely undeveloped, and principal land uses include mining, recreation, wildlife habitat and other natural resource conservation, and subsistence activities. Limited commercial land use occurs at three locations along the Dalton Highway: Yukon River Crossing, Coldfoot, and Deadhorse.

Land use is more varied south of the Yukon River. Although most of the land is not developed, several communities are located along the southern portion of the TAPS. Included are Fairbanks, North Pole, Delta Junction, Glennallen/Copper Center, and Valdez. Three military reservations also occur near the ROW. Commercial enterprises and residential areas exist in the vicinity of these communities, and some agricultural activities occur near the TAPS, particularly near Delta Junction.

conveyed to individual owners pursuant to the Alaska Native Allotment Act. The pipeline owners have acquired easements for the TAPS ROW across all parcels except one, which is currently under negotiation (Hansen 2002).

3.27.1.2 Land Uses

The vast majority of land along the TAPS ROW from the Yukon River north to Prudhoe Bay is undeveloped. Mining, recreation, wildlife habitat and other natural resource conservation, and subsistence are the primary land uses. A number of conservation system units have been designated and are discussed in Section 3.27.1.3. Commercial facilities that provide food, lodging, fuel, and vehicle repair services are clustered at three development nodes along the Dalton Highway: Yukon River Crossing, Coldfoot, and Deadhorse (BLM 1991; Dalton Highway Advisory and Planning Board 1998).

Although most recreational activities are permissible on state and federal lands, restrictions exist along the Dalton Highway. AS 19.40.210 prohibits the use of off-road vehicles (ORVs) within 5 mi of the Dalton Highway right-of way (Dalton Highway Advisory and Planning Board 1998). AS 16.05.789 prohibits hunting with firearms within 5 mi of either side of the highway between the Yukon River and the Arctic Ocean (Alaska Legal Resource Center 2001).

South of the Yukon River, land use is more varied, although most land remains undeveloped and recreation remains a major land use. Several cities and communities with outlying residential development exist along the southern half of the pipeline: Fairbanks, North Pole, Delta Junction, Glennallen/Copper Center, and Valdez. Some agriculture occurs on private lands in the vicinity of the TAPS, particularly near Delta Junction. Scattered commercial logging and wood harvesting for personal use occur on BLM lands and state lands (Mushovic 2001; Mylius 2001). Lands owned by native corporations and allottees are used primarily for subsistence activities (Hansen 2001), although subsistence activities also occur on public lands.

Three military reservations exist along the ROW. Fort Wainwright and Eielson Air Force Base (AFB) are south and east of Fairbanks, respectively; and Fort Greely is southwest and southeast of Delta Junction (TAPS Owners 2001a). The pipeline crosses all three reservations (USACE 2002).

Although historical land use conflicts due to TAPS have been few and temporary along the vast majority of the pipeline's length, some access and use conflicts have occurred (and are continuing) on Native lands owned by the Ahtna and Chugach Corporations along the southern half of the pipeline. The Ahtna Corporation, which owns land south of Paxson, has experienced trespassing on their land that they believe is due to pipeline-related access near a heavily-used snowmachine and ORV use area (Hart 2002). The Chugach Corporation, which owns the land in the Valdez area, is concerned that the existence of TAPS on their land precludes other uses (Rogers 2002). APSC's access policy is discussed in Section 3.28.1.

State-leased airports are located near or within the TAPS corridor and adjacent to the Dalton Highway at Prospect Creek, Coldfoot, Dietrich Camp, Chandalar Camp, and Galbraith Lake. In addition, APSC owns an airport at 5-Mile Camp near the Yukon River. The public is allowed to use that field by permission. Other airstrips under state or private maintenance also exist along the ROW (BLM 1989a; TAPS Owners 2001a).

The federal TAPS ROW is generally 54 ft wide and the state ROW is about 100 ft wide. Both expand to incorporate TAPS-related facilities, including pump stations, river training structures, communication sites, and a fuel gas line. Other structures include an airstrip, construction camps, access roads, material sites, disposal sites, and other specific-use sites. Although the ROW is a nonexclusive use on public lands, other uses must be compatible (TAPS Owners 2001a).

A number of federal, state, and local land use plans are in effect along the 800-mi TAPS corridor. Federal land use plans include the Utility Corridor Proposed Resource Management

Plan, the Dalton Highway Recreation Area Management Plan, the Southcentral Planning Area Management Framework Plan, the Delta and Gulkana Wild and Scenic River Management Plans, and the Fort Greely Resource Management Plan. State land use plans include the Dalton Highway Master Plan and the Copper River Basin, Tanana Basin, and Prince William Sound Area Plans for state lands. Existing local land use plans are the North Slope Borough Comprehensive Plan, the North Star Borough Comprehensive Plan, and the Valdez Comprehensive Plan. In addition, coastal management program enforceable policies are in effect for the North Slope Borough and Valdez coastal zones (see Section 3.27.2).

3.27.1.3 Special Land Uses

Several conservation system units have been designated in the vicinity of the TAPS. They include national parks; national wildlife refuges; a federally designated wilderness area; BLM lands, including a national recreation area (NRA); and state lands, including recreation sites, areas, and parks. North of the Yukon River, BLM lands near the ROW include ACECs, which were established to identify and manage BLM lands requiring special management to protect historical, cultural, scenic, fish, and wildlife resources; other natural systems and processes; and human life and property from natural hazards. The conservation system units (including the ACECs) are depicted in Map 3.27-1 and listed in Table 3.27-1.

3.27.2 Coastal Zone Management

Activities in Alaskan coastal zones are regulated by federal and state legislation. The Federal Coastal Zone Management Act (CZMA) was enacted in 1972 and was last amended in 2001. The Alaska Coastal Management Act (ACMA) was enacted in 1977 and was last amended in 1994. It provides for coastal zone management in Alaska as envisioned in the national CZMA. Both statutes guide land use in coastal zones to provide a balance between development and protection of coastal resources (BLM and MMS 1998; State of Alaska 2001).

The Alaska Coastal Management Program (ACMP), approved in 1979, was developed to implement the ACMA. The ACMP encourages coastal districts to develop and adopt district coastal management programs (CMPs) that become part of the ACMP once they are fully approved. CMPs include enforceable policies, and all activities that occur within a coastal zone or that may affect coastal resources must be consistent with an approved CMP. Activities must also be consistent with applicable statewide ACMP standards. The Alaska Department of Governmental Coordination (DGC) and State of Alaska resource agencies conduct consistency reviews on proposed and existing projects within coastal zones (BLM and MMS 1998; State of Alaska 2001).

Coastal Zone Management and the TAPS

In coastal areas of Alaska, development activities are subject to both federal and state laws designed to maintain a balance between development and coastal resource protection. The ACMP also encourages coastal districts to establish coastal management programs. Both the northern and southern ends of the TAPS pass through coastal management zones.

At the northern end, about 110 mi of the pipeline and associated facilities are in the North Slope Borough Coastal Zone. At the southern end, about 25 mi of the pipeline and associated facilities, including the Valdez Marine Terminal, are in the Valdez Coastal Zone. The pipeline and associated activities are subject to provisions established for those zones, as well as applicable statewide ACMP standards.

The TAPS begins in the North Slope Borough Coastal Zone, which includes about 110 mi of the pipeline and related structures, including PS 1 (Map 3.27-2). The pipeline ends in the Valdez Coastal Zone, which encompasses about 25 mi of the pipeline and the Valdez Marine Terminal (Map 3.27-3). Both coastal zones have fully approved CMPs that include enforceable policies. The North Slope Borough CMP requires that development activities not substantially interfere with subsistence activities

or jeopardize subsistence resources in the borough. Most development activities in the North Slope Borough are related to hydrocarbon exploration, development, and transportation. Subsistence activities include hunting and fishing, and subsistence resources include both terrestrial wildlife and fisheries. The Valdez CMP allows for a variety of development activities but prioritizes approval of activities that are water-related and/or water-dependent. Existing activities include utility corridors, industrial and commercial facilities, and public recreation and tourism. The operation and maintenance of the TAPS and related facilities have been found to be consistent with the North Slope Borough and Valdez CMPs (Laughlin 2002; North Slope Borough 1988; Valdez 1987).

TABLE 3.27-1 Conservation System Units in the Vicinity of TAPS

Pipeline Milepost	Name of Unit[a,b]	Approximate Distance[c] and Direction from TAPS
122-140	Toolik Lake ACEC/Research Natural Area	Crossed by pipeline
136-145	Galbraith Lake ACEC	About 1 mi east
139-162	Arctic National Wildlife Refuge	¼ mi east
139-266	Gates of the Arctic National Park	2-3 mi west
156-163	West Fork Atigun ACEC	3 mi west
190-200	Snowden Mountain ACEC	1 mi east
207-211	Sukakpak Mountain ACEC	½ mi east
216-221	Nugget Creek ACEC	1 mi west
238-355	Yukon Flats National Wildlife Refuge	2 mi east
257-274	Jim River ACEC	2-3 mi east
302-309	Kanuti National Wildlife Refuge	8 mi west
429-515	Tanana Valley State Forest	About 2 mi east
420-429	White Mountains National Recreation Area	1-3 mi east
438	Lower Chatanika State Recreation Area	3 mi east
465-470	Chena River State Recreation Site	2 ½ - 3 mi east
495-496	Harding Lake State Recreation Area	8 mi west
491	Salcha River State Recreation Site	8 mi west
525-531	Quartz Lake State Recreation Area	1 mi east
531	Big Delta State Historic Park	½ mi west
540	Delta State Recreation Site	2 mi west
569	Donnelly Creek State Recreation Site	½ mi west
577-602	Delta Wild and Scenic River	1 mile west
602-613	Fielding Lake State Recreation Site	1 ½ mi south
682	Dry Creek State Recreation Site	1 mi east
630-654	Gulkana Wild and Scenic River	Crossed by pipeline
674-710	Wrangell St. Elias National Park and Preserve	2-5 mi east
719	Squirrel Creek State Recreation Site	1 mi east
771-773	Worthington Glacier State Recreation Site	Crossed by pipeline
775	Blueberry Lake State Recreation Site	2 mi southeast
NA	Sawmill Bay State Marine Park	18 mi southwest
NA	Shoup Bay State Marine Park	8 mi southwest
NA	Jack Bay State Marine Park	15 mi southeast
VMT	Chugach National Forest	¼ mi southwest

[a] Units are listed geographically from north to south.

[b] Notation: ACEC = Area of Critical Environmental Concern; VMT = Valdez Marine Terminal.

[c] Distance from the closest boundary of the unit to the TAPS.

Sources: APSC (1993); ADNR (2001).

3.28 Recreation, Wilderness, and Aesthetics

Recreation, wilderness, and aesthetics are important resources near the TAPS ROW corridor. Recreational activities are abundant and popular on the public lands in the vicinity of the TAPS. The third largest federally designated Wilderness Area in the United States is within a few miles of the pipeline and offers unique opportunities for solitude. The aesthetics along the majority of the pipeline are outstanding.

3.28.1 Recreation

A variety of recreational opportunities exist on the public lands in the vicinity of the 800-mi ROW corridor. Some common activities include hiking, sightseeing, car-camping, backpacking, bow hunting, trapping, sport fishing, river floating, kayaking, canoeing, wildlife viewing, berry picking, dog mushing, snowmachining, skiing, and mountain biking. Recreational areas near the pipeline include national parks; national wildlife refuges; national Wild and Scenic Rivers; a federally designated Wilderness Area; BLM lands, including a national recreation area; and state lands, including a state forest and state recreation sites, areas, and parks. These conservation system units are depicted in Map 3.27-1 and listed in Table 3.27-1 (in Section 3.27.1 – Land Use). Access is via roads, overland travel by foot or animal, waterways, and air (TAPS Owners 2001a; BLM 1989a).

Recreational areas north of Fairbanks in the vicinity of the TAPS include Gates of the Arctic National Park and Preserve (NPP), which encompasses a 7.2-million-acre Wilderness Area – the only federally designated wilderness within a few miles of the pipeline (Ulvi 2001). Three national wildlife refuges (NWRs) are also located within several miles of the northern half of the TAPS – the Arctic NWR (over 19 million acres), Yukon Flats NWR (13.2 million acres), and Kanuti NWR (1.6 million acres) (Patterson 2001). BLM lands are adjacent to, or within a few miles of, the ROW and are largely undeveloped. The BLM-managed White Mountains National Recreation Area (NRA) is a one-million-acre semiprimitive area within 1 mi of the TAPS accessible via the Elliott and Steese Highways (Goodwin 2002). State lands within a few miles of the pipeline also have minimal recreational development.

Primary road access to recreational areas in the northern vicinity of the pipeline is via the 416-mi all-weather graveled Dalton Highway. The Dalton Highway, formerly called the Haul Road, was constructed in 1974 to support construction of the TAPS. Initially, the highway was closed to the public; however, the state gradually allowed increased access to the north. In 1995, the highway was opened to Deadhorse (TAPS Owners 2001a).

Recreational Opportunities along the TAPS

Numerous recreational opportunities exist on the state and federal public lands near the TAPS. Common activities include hiking, sightseeing, car-camping, backpacking, bow hunting, sport fishing, river floating, kayaking, canoeing, wildlife viewing, dog mushing, snowmachining, skiing, and mountain biking. Federal lands include National Parks, National Wildlife Refuges, a federally designated Wilderness Area, two National Wild and Scenic Rivers, and BLM lands. State recreation sites, areas, and parks are also plentiful near the southern half of the TAPS.

BLM visitor data show that increased public access to the Dalton Highway has resulted in increased recreational use of areas along the highway near the ROW. Most use occurs between May and September. Sightseeing and car-camping are the primary activities along the highway. Visitation is by privately owned vehicles and tour buses. In 2001, 67% of visitors arrived by privately owned vehicles (BLM 1989a, 2001c).

The BLM compiles visitation statistics for three development nodes along the Dalton Highway: Coldfoot Visitor Center, Marion Creek Campground, and Yukon Crossing Contact Station. Statistics compiled at these points from 1991 to 2001 show that visitation along the Dalton Highway has increased steadily during the past decade. At Coldfoot Visitor Center, the

number of visitors has increased from 3,107 in 1991 to 4,629 in 2001. At Marion Creek Campground, 480 user nights were counted in 1994 (the first year for which data were compiled); by 2001, the number of user nights rose to 826. At the Yukon Crossing Contact Station, visitor statistics have been compiled since 1992. In that year, the number of visitors was 2,246; in 2001, 8,767 persons visited this point (BLM 2001c).

Although increased recreation has occurred along the Dalton Highway, the BLM estimates that the majority of visitors never leave the highway right-of-way. Very few secondary roads are available off the Dalton Highway for recreationists who desire remote access. Some abandoned mining roads do exist, such as one that leads close to the southeastern boundary of Gates of the Arctic NPP. However, no roads lead directly to the park – or the Wilderness Area within it – and no roads lead to any of the national wildlife refuges near the ROW. Consequently, recreationists who desire access to these remote recreation areas commonly park their vehicles along the Dalton Highway and then travel by foot, dogsled, snowmachine, horse, or all-terrain vehicle (ATV). Entrance by floating, boating, or kayaking on waterways is also common. However, small aircraft are most often used for remote access, and the construction of several small airports along the TAPS ROW has enhanced this method of access (see Section 3.27.1) (BLM 1989a; Delaney 2001a; TAPS Owners 2001a).

Because of the remoteness of the area and the extremely limited road access available, recreational use in areas north of the Yukon River along the Dalton Highway is widely dispersed. Qualitative assessments by federal and state public land managers indicate that recreational areas in the northern vicinity of the TAPS are minimally used and have experienced very little increase in recreational use in the last 25 years. However, quantitative recreational data are very limited. Such data are not available for Gates of the Arctic NPP, including the wilderness area within it, or for any of the NWRs. Very limited use estimates are available for some state lands. Limited data are available from the BLM (and presented herein) (Delaney 2001a; Edgerton 2001; Huer 2001; Mylius 2001; Panarese 2002; Schultz 2001; Ulvi 2001).

Recreational areas south of Fairbanks in the vicinity of the TAPS that are accessed via the Richardson Highway include Wrangell-St. Elias NPP. The park boundary ranges from 2 to 5 mi from the TAPS at its closest points; however, the majority of the park is substantially farther from the pipeline. No documented increase in recreational use has occurred since the construction of the TAPS (Snitzler 2001).

Recreation Opportunity Spectrum (ROS) Classes

To optimize the management of recreational resources on the public lands it administers, the BLM has developed recreational opportunity spectrum (ROS) classes with accompanying management zones and objectives. Recreation resources on BLM lands along the Dalton Highway are categorized into the following ROS classes, which have not changed in the last 25 years (BLM 1989a, 1991):

- *Roaded natural:* Resource modification harmonizes with the natural environment; opportunities for motorized and nonmotorized recreation; equal opportunities for interaction with others and for isolation from the sights and sounds of man; low to moderate concentration of users; rustic visitor facilities.
- *Roaded modified:* Significant modification of the landscape; both motorized and nonmotorized recreation possible; little opportunity for isolation; visitor facilities may or may not be available.
- *Rural:* Substantially modified natural environment; little opportunity for isolation with human sights and sounds readily evident; moderate to high concentrations of users; readily available facilities, sites, and trails.

Another recreation area near the southern half of the pipeline is within the Chugach National Forest (NF). A small (several hundred acre) area of the NF juts north to within about 2 mi of the Valdez Marine Terminal. The vast majority of the Chugach NF is several miles from the Valdez Marine Terminal and the pipeline, and no change in recreational use levels or opportunities have been noted by the U.S. Forest Service (USFS) in the last 25 years (Behrends 2002). No other national forests are in the vicinity of the pipeline.

The remaining recreation areas near the TAPS and south of Fairbanks are administered by the BLM or the ADNR. The BLM lands are largely undeveloped and include two Wild and Scenic Rivers (WSRs) and a few campgrounds and boat launching sites, all of which have experienced an increase in use since the construction of the pipeline (see below). Lands administered by the ADNR are discussed in more detail below and include a number of campgrounds. Quantitative data on use levels are estimates only and are limited for these state lands; however, a general increase in recreational use has been noted in the past 25 years (Panarese 2002).

The BLM uses ROS classes to manage recreation areas along the southern half of the pipeline, just as it does along the northern half of the TAPS. Three ROS classes have been in effect along the Richardson Highway since the mid-1970s (Overbaugh 2001):

- *Roaded natural:* see text box on previous page.
- *Semi-primitive motorized:* Essentially unmodified environment; some opportunity for isolation from human sights and sounds; low concentrations of users; limited facilities.
- *Semi-primitive nonmotorized:* Essentially unmodified environment; some opportunity for isolation from the sights and sounds of man; low user concentrations; limited facilities; motorized use is limited to airplanes.

In 1980, segments of the Delta and Gulkana Rivers within or adjacent to the TAPS corridor were designated as components of the National Wild and Scenic Rivers System pursuant to the Wild and Scenic Rivers Act of 1968 (BLM 1983a,b). Section 1281 of the Act mandates that each component of the "… system… be administered… to protect and enhance the values which caused it to be included" in the system (16 USC §1281(a)). The Act also mandates that WSRs be managed by the federal agency administering the land the river flows through – in this case, the BLM.

Three levels of designation are possible under the Act – wild, scenic, and recreational – and river segments must be managed according to their classification. Wild rivers must remain free of impoundments and generally accessible only by trail, with primitive watersheds or shorelines and unpolluted waters. Scenic rivers must also remain free of impoundments with largely primitive watersheds and undeveloped shorelines; however, some road access may exist. Recreational rivers may have had some impoundments or diversions in the past, are readily accessible by road or railroad, and may have some development along shorelines.

The Wild and Scenic Rivers Act of 1968

"It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations…"

The Delta National WSR has all three levels of classification (Map 3.28-1) and was designated to protect its outstanding scenery and natural and cultural values. Twenty miles of the river are classified as wild, 18 mi as recreational and 24 mi as scenic. The Delta National WSR corridor is also protected. It contains about 37,000 acres and excludes most of the TAPS ROW corridor. However, a portion of the WSR corridor boundary overlies the ROW between MP 577 and 596. The Delta is

designated as recreational within this segment, and the pipeline is mostly below ground. At MP 596, the TAPS veers east and exits the boundary of the Delta River WSR corridor (BLM 1983a; TAPS Owners 2001a).

Recreational opportunities on and along the Delta River include rafting, kayaking, canoeing, powerboating, fishing, hunting, wildlife viewing, and nature photography (BLM 1983a; TAPS Owners 2001a). Recreational use of the Delta River has increased steadily since 1970, with river floating especially popular. The BLM counted 300 user days of river floating on the Delta in 1970 and 1,555 in 1998 (BLM 1983a, 1998b). In addition to the recreation occurring on the river, the BLM estimates that thousands of people use the area around the Delta River for other recreational activities, such as berry picking, plant collecting, scenic viewing, nature study, and ORV use (BLM 1983a, 1998b).

About 181 mi of three forks of the Gulkana National Wild River were designated as a wild river because of its "primitive character, abundant fish and wildlife, and geologic, cultural and recreational values" (Map 3.28-2) (BLM 1983b). The protected river corridor contains about 91,000 acres (BLM 1993). The corridor boundary overlies the ROW between MP 653 and 655 (TAPS Owners 2001a).

The Gulkana River provides excellent opportunities for white-water rafting (floating) and kayaking, wildlife viewing, fishing, and solitude (BLM 1983b). Two popular put-in and take-out points for river floating are within 0.5 to 2 mi of the ROW — Paxson Lake Campground at MP 629 and Sourdough Campground at MP 654 (APSC 1993; BLM 1983b). Sourdough Campground is also a popular put-in point for powerboat users. The TAPS crosses the Gulkana River on an overhead bridge upstream of Sourdough Campground (BLM 1983b).

Recreational use of the Gulkana National Wild River and adjacent areas has been increasing. About 5,480 people floated or powerboated on the Gulkana in 1999, compared with 3,600 in 1981 (BLM 1983b; Whittaker et al. 2000). In addition, the number of visitors to Paxson Lake Campground increased from 7,667 in 1975 to 14, 526 in 1993. Visitation to Sourdough Campground also increased, from 12,998 in 1975 to 20,000 in 1993 (BLM 1993).

Recreational opportunities on state land along the pipeline are plentiful and similar to the types of opportunities available on federal land. The ADNR maintains numerous state recreational areas and sites along the pipeline from just north of Fairbanks south to the City of Valdez, where several state marine parks are located. A variety of recreational opportunities are also available at Tanana Valley State Forest, which extends in noncontiguous segments from about Fairbanks to Delta Junction, primarily east of the TAPS (ADNR 2002).

Recreational opportunities in and around Valdez included viewing marine and terrestrial wildlife, ocean cruises, sea kayaking, nature photography, hunting, sport fishing, camping, backpacking, glacier viewing, boating, and back-country skiing. In addition to recreational opportunities available on state land, a number of commercial recreational guides and tour companies operate in the Valdez area (ADNR 2001; TAPS Owners 2001a).

The primary access for recreation areas south of Fairbanks is via the paved Richardson Highway. Secondary roads are also uncommon along the Richardson Highway near the southern half of the pipeline, just as they are north of Fairbanks. However, some recreational areas, such as Wrangell-St. Elias NPP, are accessible by unimproved road. The methods used for remote access in the north are also common in the south (BLM 1991; TAPS Owners 2001a).

Prior to September 11, 2001, recreation along the entire 800-mi length of the pipeline included visits to TAPS facilities, which have been a major tourist attraction in Alaska since their construction. In 1996, about 200,000 persons visited established APSC visitor sites, such as visitor centers, pump stations, and the Valdez Marine Terminal. Nine viewing stations that provide information on the history and engineering of the pipeline have been readily accessible from the Alaska highway system (TAPS Owners 2001a). In addition, recreational use of the ROW was allowed for such activities as hiking, jogging, mountain biking, and snowmachining. These activities were considered generally compatible with safe

pipeline operations and were accommodated under APSC's pre-September 11 access policy, summarized below (TAPS Owners 2001a):

- The rights of the landowners, both public and private, owning the property under the TAPS ROW must be respected.
- Perpendicular pipeline crossings with vehicles under 1,500 lb gross vehicle weight or with nonvehicular, low-impact modes of transportation may proceed without APSC permission.
- Linear use of small portions (generally under 1 mi) of the pipeline workpad or of the numerous TAPS access roads can proceed via any mode of transportation after obtaining a letter of nonobjection from APSC and permission from the pertinent landowner.
- Depending on TAPS work activities and seasonal conditions, the workpad is closed at times to all traffic, including APSC and its contractors. Blocking the APSC access road is not allowed under any circumstances.
- Hunting, trapping, or shooting across, from, or on the pipeline right-of-way is not allowed.

Since the events of September 11, 2001, APSC has heightened security measures and changed their access policy. Non-business-related public tours have been discontinued indefinitely at PS 9, the Valdez Marine Terminal, and the SERVS. In addition, the viewing station across from PS 12 will be closed during 2002 and all signs will be removed (Stearns 2002).

Access to the ROW has also been restricted since October 1, 2001, when the JPO directed APSC to lock all access road gates. This closure is in effect at least until November 2002, although it could be extended beyond that date. Recreational use of the ROW has been discontinued since September 11, 2001, and will remain discontinued indefinitely (Stearns 2002).

3.28.2 Wilderness

No federal or state designated or proposed Wilderness Areas exist within or adjacent to the ROW corridor (ADNR 2001; APSC 1993; Delaney 2001b). The only federally designated Wilderness Area within a few miles of the TAPS is within Gates of the Arctic NPP. The eastern boundary of the Wilderness Area is within 2 to 3 mi of the TAPS at its closest point (Ulvi 2001).

Although the Wilderness Act of 1964 prohibits the use of motorized vehicles in federally designated Wilderness Areas, the ANILCA of 1980 exempts wilderness in Alaska from that prohibition. Specifically, ANILCA states that snowmachines, motorboats, and airplanes are permitted for traditional activities and travel to and from homes and villages.

Most of Gates of the Arctic NPP is wilderness — about 7.2 million acres — making it the third largest Wilderness Area in the United States. Recreational opportunities are similar to other areas in the vicinity of the TAPS, with increased opportunities for solitude. Only a minor increase in the amount of recreational use in the eastern portion of the Wilderness Area (near the TAPS) has occurred in the past 25 years (Ulvi 2001).

The Wilderness Act of 1964

Federal wilderness, as defined by the Wilderness Act of 1964, is "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. …an area of underdeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed…to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value" (16 USC §1131(c)).

3.28.3 Aesthetics (Visual Resources)

Visual resources are defined as the land, water, vegetation, animals, and structures that are visible on the land. The ROW passes through areas that contain outstanding visual resources, many of which are listed in Table 3.28-1. These areas include the vast treeless tundra of the Arctic Coastal Plain, the mountains of the Brooks and Alaska Ranges, the Delta and Gulkana Wild and Scenic Rivers, and the coastal region of Prince William Sound. Other visual features along the ROW include the pipeline and its associated facilities; the cities of Fairbanks, North Pole, Delta Junction, and Valdez; and the communities of Glennallen and Copper Center (TAPS Owners 2001a).

With the exception of the TAPS and parallel roads, most of the area is pristine and natural, particularly north of the Yukon River. South of the Yukon, man's impacts are localized, with the pipeline, highways, and population centers near or adjacent to each other. Along the entire pipeline corridor, most background views are untouched by human activity (BLM and USACE 1988).

Scenic views are an important resource in Alaska. According to Alaska's Outdoor Recreation Plan, sightseeing is a very popular activity among residents and is the most popular recreation activity of visitors to Alaska (BLM and MMS 1998). The BLM rates sightseeing as a primary activity along the Dalton Highway (BLM 1989a).

All portions of the ROW corridor that pass through BLM-administered land are managed in accordance with Class IV visual resource management objectives, except for small portions of the Wild and Scenic River corridors (see below). Consequently, major modifications to the existing landscape are allowed for activities related to energy transportation. However, every effort is made to minimize visual impacts (BLM 1989a; Overbaugh 2001). Stipulations in the Federal Grant also minimize visual impacts (see below).

Special attention is given to protect visual resources on BLM land designated as ACECs (Section 3.27). The Galbraith Lake, Sukakpak Mountain, and Jim River ACECS all contain outstanding scenery (Table 3.27-1) (BLM 1989a). In addition, the Delta National WSR corridor is a VRM Class I, as is the Gulkana National Wild River corridor. Both corridors include a small portion of the ROW corridor (Maps 3.28-1 and 3.28-2). The management objective within these corridors is to preserve the existing character of the landscape (BLM 1989a; Liska 2001).

Viewing TAPS facilities is also a major tourist attraction. In 1996, about 200,000 persons visited established APSC visitor sites, such as visitor centers, pump stations, and the Valdez Marine Terminal. Nine viewing stations that provide information on the history and engineering of the pipeline are readily accessible from the Alaska highway system. The highest visitor counts occur at the Steese Highway site near Fox and PS 12 at milepost 64 of the Richardson Highway (TAPS Owners 2001a).

Visual Resource Management (VRM) Classes

The BLM uses a visual resource management (VRM) system to classify visual resources according to scenic quality, visual sensitivity, and distance zones. The VRM classification determines the management objectives for the area. Four VRM management class objectives exist (BLM 2001d):

- *Class I Objective:* Preserve the existing character of the landscape by allowing only a very low level of change that must not attract attention.
- *Class II Objective:* Retain the existing character of the landscape and allow a low level of change.
- *Class III Objective:* Partially retain the existing character of the landscape with a moderate level of change.
- *Class IV Objective:* Provide for management activities that require major modification of the existing character of the landscape by allowing a high level of change.

TABLE 3.28-1 Visual Resources, Viewpoints, and Overlooks along the TAPS ROW Corridor[a]

Milepost	Description
5	Former Dalton Highway checkpoint to Prudhoe Bay: Prudhoe facilities visible on the horizon
15-36	Franklin Bluffs
64	Overlook of the Coastal Plain
73	Overlook of Sagwon Bluffs
106	View of highway, gas line, and PS 3 to the north
112	View of highway, gas line, and PS 3 to the north
118	Overlook of Slope Mountain
125	Special big game crossing of the pipeline
129	Potential BLM overlook of Toolik Lake
136-144	Views of Atigun River, Galbraith Lake, PS 4, and pipeline
139-175	Galbraith Lake, overlooks of Atigun and Chandalar valleys
176	Potential BLM overlook of the Chandalar Shelf
197	Potential BLM overlook of A/Loon ponds
207-211	Sukapak Mountain
245	Atigun Pass (Brooks Range)
246	Panoramic view of the Middle Fork Koyukuk River Valley
247	BLM Cathedral Lake overlook
253	Overlook of Chapman Lake
262	Grayling Lake
278	Gobblers Knob; view of Prospect Creek/Jim River drainage, and PS 5
306	Potential BLM Olson's Lake overlook
311	Wayside and overlook facility
312	Finger Rock
319	Viewpoint of pipeline
323	Potential BLM overlook of Yukon Flats
339	Overlook of Ray River and Ray Mountains
347	Overlook of Dalton Highway, pipeline, Yukon, and PS 6
353-354	View of the pipeline crossing of Yukon River
388	Overlook of Erickson Creek and pipeline
417	Globe Creek and Grapefruit Rocks viewpoint
420	Pipeline viewpoint
448	Pipeline viewpoint
531	Viewpoint of pipeline crossing Tanana River
550	Viewpoint of PS 9
562	Viewpoint of pipeline and the Alaska Range
577-602	Delta Wild and Scenic River
578	View of Black Rapids Glacier and Delta River
584	Viewpoint of PS 10
588	Viewpoint of special designs for fault crossings
599	Photo point of pipeline
607	View of Gulkana Glacier and summit of Isabel Pass
614	Viewpoint of Summit Lake and pipeline
625	Overlook of Paxson Lake
630-654	Gulkana Wild and Scenic River
642-645	Overlooks from highway on Hogan Hill west and south

TABLE 3.28-1 (Cont.)

Milepost	Description
687	Overlook of Copper River and Wrangell Mountains
711	Overlook of pipeline, APSC interpretation signs
770	Photo site for Worthington Glacier National Natural Landmark
774-776	Thompson Pass
780-785	Keystone Canyon, historic railroad tunnel, Bridal Veil Falls, and Horsetail Falls

[a] Representative list only.

Source: TAPS Owners (2001a).

About half the 800-mi length of the TAPS is above ground and clearly visible from the air. The majority of the aboveground components also are visible from adjacent public roads, including where the pipeline is suspended above the Tanana and Gulkana Rivers.

Temporary visual impacts have occasionally occurred during tank-vent flaring at PS 1 (TAPS Owners 2001a). The incomplete combustion of fuel results in the release of carbon particles to the atmosphere, causing opacity (a cloud that blurs or partially obscures the landscape, including scenic views).

The potential visual impacts of the TAPS were considered in the design, and stipulations were included in both the federal and state ROW agreements. Stipulation 2.10.1 in the Federal Grant mandates that "permittees…consider aesthetic values in planning, construction and operation of the Pipeline System. Where the Right-of-Way crosses a State highway in forested terrain, the straight length of the Pipeline Right-of-Way visible from the highway shall not exceed six hundred (600) feet in length, unless otherwise approved in writing by the Authorized Officer. The Authorized Officer may impose such other requirements as he deems necessary to protect aesthetic values."

3.29 Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (59 FR 7629). This Executive Order, along with its accompanying cover memo, calls on federal agencies to incorporate environmental justice considerations as part of their missions. It directs them to address, as appropriate, the disproportionately high and adverse human health or environmental effects of their actions, programs, or policies on minority and low-income populations. The cover memo specifically mentions the NEPA twice, providing opportunities to incorporate environmental justice as part of the NEPA process. In addition, Section 4-4 of Executive Order 12898 identifies subsistence issues as a particular concern for environmental justice populations, since these populations frequently rely on food that they grow, hunt, collect, or otherwise obtain through noncommercial means.

In response to Executive Order 12898, both the Council on Environmental Quality (CEQ) and the EPA developed general guidelines for the evaluation of environmental justice under NEPA (CEQ 1997; EPA 1998). The CEQ guidelines provide an overview of Executive Order 12898 with respect to NEPA; in particular, they discuss environmental justice in terms of specific phases of the NEPA process. The EPA guidelines provide information similar to the CEQ guidelines but in greater detail, in an effort to establish guidance for EPA staff to use both in preparing environmental impact assessments and in evaluating such assessments prepared by other agencies. The EPA guidelines also discuss effects in particular impact areas, including ecological, human health, and socioeconomic analyses. The evaluation of environmental justice in this EIS is consistent with these two sets of guidelines, both in terms of integrating environmental justice within the NEPA process and complying with the spirit or intention of the executive order.

Both the CEQ and EPA guidelines discuss the use of spatial representation and analysis of data pertinent to environmental justice and focus specifically on geographic information system technology (CEQ 1997; EPA 1998). However, different analytical settings demand guidelines designed to address the specific issues encountered in each – particularly in terms of defining affected areas and pertinent geographic units of analysis. The referenced guidelines lack the type of specific direction necessary for this or any other EIS. In lieu of clearer CEQ and EPA guidance, the following analysis has defined minority and low-income populations for two different spatial units: (1) individual *census block groups* across the entire state of Alaska and (2) 45 *communities* that may experience impacts as the result of continued operation of the TAPS. The latter are defined in part by using the BLM

Environmental Justice

Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies (EPA 1998).

Environmental justice was officially identified by Executive Order 12898 in 1994 as an issue that all federal agencies must consider.

The attention to environmental justice is intended to ensure that all communities and persons in the United States can live in safe, healthful environments.

The approach used in environmental impact analysis is to examine impacts to the general population as well as to minority and low-income populations, both to identify high and adverse impacts and to determine whether the two subgroups experience negative impacts differently than does the population as a whole.

approach to identifying directly affected communities (BLM 2001a), and in part on their geographic proximity to the TAPS (see Map 3.24-1).

A block group is the second smallest geographic unit used by the U.S. Bureau of the Census for data presentation (U.S. Bureau of the Census 1991, 2001a). Consisting of clusters of census blocks containing 250 to 550 housing units (the ideal being about 400 units), block groups tend to provide a level of geographic detail useful for identifying environmental justice populations. Moreover, because the analysis of human health impacts also considers population distributed by block groups (see Section 3.17.2), using these geographic units provides consistency among areas of particular concern for environmental justice issues within this FEIS.

Ultimately, the evaluation of environmental justice in environmental impact analyses relies on consequences in other issue areas, each of which may affect a different geographic area. To guarantee coordination with several other disciplines considered in this document, the geographic area examined for environmental justice concerns at the block group level comprises the entire State of Alaska. Examining such a large area enables coordination with the evaluation of economic impacts, which in many cases affect the entire state. The examination of selected census block groups enables a more geographically focused analysis close to the TAPS and geographically commensurate with analyses of other issue areas.

Considering environmental justice issues at the level of individual communities supports an evaluation that focuses on directly affected places. Many of these communities are largely inhabited by Alaska Natives, and as is discussed in Section 3.25, were selected because of the likelihood that they would experience impacts from the continued operation of the TAPS. Moreover, the examination of impacts on sociocultural systems and subsistence largely focuses on the 45 directly affected communities, thus bringing the evaluation of environmental justice impacts in line with analyses in these two other closely related impact areas.

3.29.1 Minority Populations

This FEIS used data from the 2000 census to evaluate the environmental justice implications of both the proposed action and the no-action alternative. The CEQ guidelines recommend that “minority” be defined as members of American Indian or Alaska Native, Asian or Pacific Islander, Black non-Hispanic, and Hispanic populations (CEQ 1997). The earliest release of detailed 2000 census data that included information necessary to identify minority populations enumerated individuals both according to race and Hispanic origin (U.S. Bureau of the Census 2001a). It also reported individuals claiming multiple racial identities, up to six races. For consistency with the CEQ guidelines, in this document the term “minority populations” includes persons who identified themselves as partially or totally Black (including Black or Negro, African American, Afro-American, Black Puerto Rican, Jamaican, Nigerian, West Indian, or Haitian), American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, or “Other Race.” All individuals claiming more than one race similarly were considered minority. The minority category also includes “White” individuals who are Hispanic in origin, the latter technically an ethnic category. To avoid double-counting, tabulations included only White Hispanics; the above racial groups already account for non-White Hispanics. In sum, then, the minority population considered under environmental justice consists of all non-White persons (including those of multiple racial affiliations) plus White persons of Hispanic origin.

Minority Populations

Minority populations are identified on the basis of U.S. Bureau of the Census racial and (selected) ethnic categories:

- Racial: Black, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, “Other Race,” or multiple races.
- Ethnic: White Hispanic (non-White Hispanics covered under racial categories).

To identify *disproportionately high* minority populations, this FEIS uses the percentage of minorities for the state of Alaska as a reference point. Block groups or communities with minority populations in excess of the percentage for the state as a whole thus are identified as disproportionately high with respect to their minority composition. Using the entire state to identify disproportionality acknowledges both the unique minority situation in Alaska compared with other states (with a comparatively high population of indigenous people), as well as the geographic extent of the TAPS, which crosses the entire state north to south. In 2000, 32.4% of the state population was minority, on the basis of the criteria outlined above (U.S. Bureau of the Census 2001b). Of the 533 block groups defined for Alaska in 2000, 218 had minority populations in excess of 32.4% – a total of 133,772 minority persons in all (Map 3.29-1). Of the 29 block groups intersected by or adjacent to the TAPS, 7 contained populations in excess of 32.4% minority, a total of 2,702 minority persons. Nineteen of the 45 communities likely to experience effects from continued operation of the TAPS contained minority populations in excess of 32.4% of their total inhabitants (Table 3.29-1).

3.29.2 Low-Income Populations

As recommended by the CEQ guidelines, this environmental justice analysis identifies low-income populations as those falling below the statistical poverty level identified annually by the U.S. Bureau of the Census in its Series P-60 on income and poverty. The Census Bureau defines poverty levels on the basis of a statistical threshold that considers for each family both overall family size and the number of related children less than 18 years old. For example, the poverty threshold annual income for a family of three with one related child under 18 was $13,410, while the poverty threshold for a family of five with one related child under 18 years was $21,024 in 1999 (U.S. Bureau of the Census 2000). The 2000 census used 1999 thresholds because 1999 was the most recent year for which annual income data were available when the census was conducted. If a family fell below the poverty line for its particular composition, the census considered all individuals in that family to be below the poverty line.

Low-Income Populations

Low-income populations are defined on the basis of U.S. Bureau of the Census income criteria, as discussed in Series P-60 publications. The poverty line is defined on the basis of a combination of income, family size, and number of family members younger than 18 years – the income threshold thus varying by family composition. Each census relies on income data from the previous year, so the 1990 census relied on income data from 1989.

To identify census block groups with *disproportionately high* presence of low-income populations, this FEIS used the percentage of low-income persons living in the state of Alaska as a reference point. The rationale for using state-level statistics to define disproportionality low-income populations was that the TAPS crosses the entire state and, as a result, requires reference to an equally broad range of economic settings. In 1999, 9.4% of the state population was low-income, as defined on the basis of the criteria outlined above (U.S. Bureau of the Census 1992). Of the 533 block groups defined for Alaska in 2000, 286 had low-income populations in excess of 9.4% – a total of 37,134 low-income persons in all (Map 3.29-2). Of the 29 block groups defined in the 2000 census that are intersected by the TAPS, 11 contained populations in excess of 9.4% low-income, a total of 1,057 low-income persons.

Low-income statistics for the 45 directly affected communities considered in this document are also summarized in Table 3.29-1. Twenty-five of the 45 contained low-income populations in excess of 9.4% (low-income data were unavailable for two of the communities).

TABLE 3.29-1 Minority and Low-Income Percentages for the State of Alaska, 29 Block Groups Intersecting the TAPS, and 45 Communities Likely To Be Affected Directly by Continued TAPS Operation, 2000

Area	Total Population	Percentage Minority	Percentage Native[a]	Percentage Low Income[b]
State of Alaska	626,932	32.4	15.6	9.4
Alatna	35	97.1	94.3	9.1
Allakaket	97	95.9	95.9	12.9
Anaktuvuk Pass	282	90.4	88.3	4.4
Big Delta	749	4.5	1.5	30.0
Chenega	86	77.9	73.3	15.6
Chitina	123	48.8	33.3	12.7
Coldfoot	13	–[c]	–	–
College	11,402	22.2	8.9	8.2
Copper Center	362	51.9	46.7	18.8
Copperville	179	22.9	14.0	7.1
Cordova	2,454	28.9	10.4	7.5
Deadhorse	–	–	–	NA[d]
Delta Junction	840	8.6	4.0	19.4
Ester	1,680	12.6	4.6	8.1
Evansville	28	53.6	50.0	4.3
Eyak	168	10.7	1.2	NA[d]
Fairbanks	30,224	33.3	9.9	10.5
Fox	300	12.3	8.0	8.7
Gakona	215	24.7	12.1	10.8
Glennallen	554	14.8	5.1	8.0
Gulkana	88	73.9	71.6	40.7
Harding-Birch Lakes	216	6.5	–	–
Hughes	78	89.7	78.2	28.0
Kenny Lake	410	17.3	10.2	25.9
Livengood	29	17.2	6.9	15.4
Manley Hot Springs	72	26.4	23.6	9.7
Minto	258	92.3	91.9	26.4
Moose Creek	542	11.6	2.2	9.4
Nanwalek	177	93.2	89.3	17.5
North Pole	1,570	19.0	3.6	8.7
Nuiqsut	433	89.8	88.2	2.4
Paxson	43	–	–	–
Pleasant Valley	623	12.0	4.8	7.0
Port Graham	171	88.9	84.8	18.8
Prudhoe Bay	5	80.0	20.0	–
Rampart	45	93.3	88.9	17.9

TABLE 3.29-1 (Cont.)

Area	Total Population	Percentage Minority	Percentage Native (2000)[a]	Percentage Low Income (1990)[b]
Salcha	854	12.2	3.9	3.9
Stevens Village	87	96.6	95.4	61.2
Tanana	308	82.1	79.9	23.0
Tatitlek	107	86.0	84.2	24.2
Tazlina	149	30.9	24.8	8.1
Tonsina	92	15.2	9.8	6.7
Two Rivers	482	11.4	2.7	–
Valdez	4,036	16.4	7.2	6.2
Wiseman	21	19.0	19.0	10.5

a "Native" includes Alaska Natives and Native Americans, the former presumed to contribute most, if not all, to the total Native population in each geographic unit reported in the table. Percentages do not include individuals identifying themselves as mixed-heritage Native (who would appear under "Percentage Minority".)

b Although low-income data come from the 2000 census, low-income data are for 1999.

c A dash indicates 0.0 or a percentage that rounds to 0.0.

d NA = data not available.

Sources: Table compiled from U.S. Bureau of the Census (2001c-d, 2002) data.

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