XV. GLOSSARY

acute toxicity – the ability of a substance to cause harmful effects soon after a single, short-term exposure or dose.

adaptive management – a systematic process for continually improving practices and policies by learning from the results of existing activities and programs.

ailanthone – allelopathic chemical (see below) produced by plants in the genus *Ailanthus* (*e.g.*, tree-of-heaven [*A. altissimma*]).

allelopathic chemical – chemical produced by a living organism that kills other species, most often employed by species that cannot move to reduce or prevent competition from other species living adjacent to it (*e.g.*, juglone by black walnut [*Juglans nigra*], ailanthone by tree-of-heaven).

anoxia – the condition of no oxygen (adjective = **anoxic**). When occurring in surface waters, oxygen concentrations are less than 1 ppm. Compare with **hypoxia**.

aquatic – of, living in, or referring to, water.

autotrophic – refers to organisms that make complex organic nutritive compounds such as sugars from simple inorganic sources such as carbon dioxide by photosynthesis or other chemical processes. Examples of **autotrophs** include most plants, algae, and some bacteria. Compare with **heterotrophic**.

avian – of, or referring to, birds.

basin wetland – estuarine landform with restricted tidal flows.

benthic – living on or in bottom sediments in freshwater and marine ecosystems.

benthos – all of the organisms living near, on, in, or attached to the bottom substrate(s) of any marine or freshwater ecosystem. Clams, snails, polychaete "bristle" worms, and algae are common representatives of the benthos in the Meadowlands.

bioaccumulation – increase in concentration of a substance, especially contaminants, in living organisms as they take in contaminated air, water, or food because the substance is very slowly metabolized (broken down) or excreted.

bioavailability – the degree to which chemicals, including contaminants, can be taken up by organisms.

biodiversity – the variety of living organisms in some place, which may encompass diversity at several different levels of organization (*e.g.*, individuals that have different genes, populations that have genetically different individuals, species that have genetically distinct populations).

biological community – an association of different species living together within a defined area. A few examples of biological communities within the Meadowlands include the intertidal marsh, grassland, and palustrine forest communities.

bioremediation – the use of biological organisms such as plants or microbes to aid in removing hazardous substances from an area.

buffer – a vegetated upland area that adjoins a wetland or waterbody. Buffers reduce human impacts on, provide, or enhance a number of important aquatic resource functions including stormwater moderation and erosion control, nutrient and metal cycling and removal, and maintenance of diverse habitats for fish and wildlife.

carcinogen – any substance or agent that causes cancer. Examples of known human carcinogens include asbestos and benzene.

carnivore – a consumer of animals. Examples of carnivores in the Meadowlands include raptors (*e.g.*, barn owl [*Tyto alba*]) and certain mammals (*e.g.*, mink [*Mustela vison*]).

channelization – the manipulation of a waterbody to increase the rate of water flow through the waterbody. Manipulation may include deepening, widening, straightening, armoring, or other activities that change the stream cross-section or other aspects of stream channel geometry to increase the rate of water flow through the waterbody. Despite the modifications to increase the rate of water flow, a channelized waterbody remains a water of the United States pursuant to the Clean Water Act. Channelization has many effects, such as increasing scour and erosion, which may have adverse impacts on fish and wildlife.

chronic toxicity – the capacity of a substance to cause long- term adverse health effects in humans, animals, fish, and other organisms after repeated or regular exposure to low doses.

congener – in chemistry, one of the variants or configurations of a chemical's structure. Congeners usually differ in varying degrees in certain chemical and physical properties.

conservation – the careful preservation and protection of something, generally used in this document in reference to biodiversity. Conservation generally requires planned management and related efforts to prevent exploitation, neglect, and/or degradation.

consumer – an organism that ingests other organisms, their parts, and/or their products for energy. Synonym of **heterotroph**. Compare with **producer** and decomposer.

contaminant of potential concern (COPC) – a contaminant identified by a Screening Level Ecological Risk Assessment (SLERA) for a particular site.

corridor – a strip of land that differs from the adjacent lands on either side; corridors usually serve to connect the "like" landscape components at each end of the corridor.

DDT/DDE – dichloro-diphenyl-trichloroethane and its breakdown product, dichloro-diphenyl-dichloroethylene. DDT was among the first organochlorine insecticides to be developed in the 1940s; most uses of DDT were banned in the early 1970s, when it was shown to have substantial adverse effects on non-target species. DDT was manufactured at several plants located in the Hackensack and Passaic River watersheds, and contaminates portions of both watersheds.

decomposer – an organism that breaks down organic matter into inorganic forms to obtain materials and energy. Examples of decomposers include bacteria and fungi.

dibenzofurans – synonym of **furans**.

dioxin – any form of a group of 75 aromatic heterocyclic compounds, consisting of two benzene rings linked together by two oxygen atoms and containing at least one chlorine atom. Dioxins are byproducts of many chemical and combustion processes, especially those involving combustion of man-made materials. Although there are no known natural sources of dioxins, they are ubiquitous in the environment in minute quantities. Ingestion is the most common exposure of fish, wildlife, and humans to dioxin. Dioxin toxicity varies with the number and location of chlorine atoms; its effects include edema, weight loss, reproductive impairment, immune suppression, and hormonal alterations. Dioxins and related compounds are carcinogens.

direct value – the economic value of goods from natural resources, including fish and wildlife species, that are consumed locally or sold in commercial markets.

DNA adduct formation – an alteration in a gene, usually due to its binding with some chemical agent (*e.g.*, pesticide molecule), which often results in growth of a cancerous tumor.

drainage basin – an area draining into, and including, a waterbody; synonym of **watershed**.

ecosystem – the interacting system of biological communities with their physical environment. The Hackensack Meadowlands ecosystem is comprised of the Hackensack Meadowlands and its biological community.

ecosystem integrity – the capability of supporting and maintaining a balanced, integrated, adaptive, community of organisms having species composition, diversity, and functional organization comparable to that of natural systems.

ecosystem sustainability – maintenance of ecosystem processes and functions conditions indefinitely without progressive diminution of valued qualities inside or outside the ecosystem.

ectothermy – the use of environmental or ambient heat to control body temperature. Body temperature of ectothermic animals usually varies widely but may be moderated by the animal's behavior. For example, snakes and lizards may maintain a relatively constant temperature by basking in the sun or seeking underground refugia. Compare with endothemy.

edge effect – an effect of the interface between different cover types, including interfaces between vegetative cover types or other site conditions. Certain species (*e.g.*, cardinal) occur at

such interfaces because of the juxtaposition of different resources (*e.g.*, refuge in shrubs and trees, food in open areas); however, other species (*e.g.*, bobolinks) avoid those areas because of the different physical environment or high incidence of predation that may occur there.

effects range-median (ERM) – represents the median contaminant concentration in sediments at which adverse biological effects on benthic invertebrates have been observed. The ERM is not a regulatory guideline, and indicates a correlation and not a causal relationship. Developed by NOAA, the ERM has proven useful in assessing potential adverse impacts on fish and wildlife. The ERM for dioxin differs only a little from the contaminant level in EPA guidance, which identifies the concentration at which there is a risk to mammals consuming dioxin-contaminated food.

endangered species (federally listed) – a plant or animal species that is in danger of extinction throughout all or a significant portion of its range. Endangered species are listed pursuant to the Endangered Species Act of 1973.

endocrine disruptor – any exogenous chemical substance or mixture that alters the structure or function of the endocrine system and causes adverse effects at the level of the organism, its progeny, populations, or subpopulations, based on scientific principles, data, weight of evidence, and the precautionary principle. Known endocrine disruptors include some PCBs, dioxins, and furans; bisphenol A; the pesticides DDT, DDE, and methoxychlor; and octyl- and nonyl-phenols.

endogenous – produced inside the body. A few examples of endogenous substances include muscle proteins, digestive enzymes, and hormones. Antonym of exogenous.

endothermy – the ability to generate and regulate internal body temperature. Erroneously considered synonymous with warm-blooded. Examples of endotherms include birds, most mammals, and a few fishes (*e.g.*, tunas, billfishes). Compare with ectothermy.

enhancement – a manipulation of the physical, chemical, or biological characteristics of a site for a specific purpose (*e.g.*, invasive species control) or to improve a specific function (*e.g.*, marsh production, flood water retention).

environmental risk assessment – evaluation of scientific information on the hazardous properties of environmental agents (hazard characterization), the dose-response relationship (dose-response assessment), and the extent of the exposure to those agents (exposure assessment). The product of the risk assessment is a statement regarding the probability that populations or individuals so exposed will be harmed and to what degree (risk characterization).

estuary – the mixing zone of freshwater and seawater, which usually occurs in a semi-enclosed coastal area (*e.g.*, embayment or wide mouth of a river). As a result of the mixing, estuaries contain brackish water, which have salinities intermediate between freshwater (0 parts per thousand [ppt] salinity) and seawater (approximately 35 ppt salinity).

eustatic sea level – sea level which changes in response to the volume of water in the ocean.

eutrophication – the process whereby water bodies, such as estuaries, receive excess nutrients that stimulate excessive plant growth leading to low oxygen concentrations (**hypoxia** or **anoxia**), which cause mortality of aquatic organisms.

exogenous – produced outside the body. Examples of exogenous compounds include contaminants and endocrine disruptors. Antonym of **endogenous**.

exotic species – a plant or animal species that is not native to a geographic area or ecosystem. Because they may have no or few biotic controls (*e.g.*, competitors) in the new location, many exotic species have the potential to reproduce prolifically and to replace native species.

fishery – the harvesting of a certain fish species in specific waters.

fishway – any facility, structure, device, measure, or project operation, or any combination thereof, necessary for safe, timely, and effective movement of fish, regardless of life stage, whether upstream or downstream, through, over, or around a manmade obstruction, such as a dam. An example of a fishway is a fish ladder.

floodplain – the relatively flat surfaces adjacent to active stream or river channels, formed by deposition of sediments during floods.

food chain – movement of energy and nutrients from one feeding group of organisms to another within an ecosystem. For example, algae are eaten by krill, which are consumed by whales. Compare with **food web**.

food web – a complex intermeshing of feeding relationships within an ecosystem. Conceptually, a food web may be considered as many interacting food chains. Also, different stages in the life of a species may have different feeding relationships with other species. For example, a larval fish may eat certain algae, the juvenile fish eats copepods, and the adult eats other fishes. Thus, in a food web, each species eats and is eaten by many other species. Compare with **food chain**.

fragmentation – a disruption in the continuity of an ecosystem. An example is the splitting of a large land parcel into smaller parcels by roads. Fragmentation exacerbates the problems of habitat loss, and contributes to additional loss of **biodiversity**.

fringe wetland – an estuarine landform with unrestricted tidal flows.

furans – refers to polychlorinated dibenzofurans, a group of 135 different aromatic heterocyclic compounds, consisting of two benzene rings linked together by one oxygen atom and containing at least one chlorine atom. Like dioxins and PCBs, which are related classes of aromatic heterocyclic compounds and share similar properties, furans form as byproducts of many chemical manufacturing processes.

geology – the science of the origin, history, and structure of the earth, and including the dynamic processes changing the structure.

glochidia – a specialized larval form of some freshwater mollusks that attaches to the gills of specific freshwater fishes. The larva does not derive any nutrition from the gills of the fish, but simply uses the fish as a means of dispersal to another habitat. Example: larva of the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*).

granivore – a grain-eater. Examples include some birds (American goldfinch [*Carduelis tristis*], Northern cardinal [*Cardinalis cardinalis*]) and mammals (*e.g.*, most rodents).

guild – a group of species that exploit an environmental resource similarly. For example, herrings (*Alosa* spp.), bay anchovy (*Anchoa mitchilli*), and silversides (*Menidia* spp.) in the Meadowlands may be considered a guild of planktivorous (plankton-eating) fishes.

guyed – steadied or supported by cables or other attachments. For example, guyed radio towers are supported by a circular array of guy wires attached to the ground. Unguyed (also known as freestanding) radio towers lack guy wires.

habitat – the combination of environmental factors that provides food, water, cover, and space that a living organism needs to survive and reproduce.

haplotype – a set of closely linked genes that tends to be inherited together as a unit, usually due to their linkage (their proximity on a single chromosome). For example, haplotype M of common reed (*Phragmites australis*) gives rise to an invasive phenotype (form).

hazard quotient – the ratio of a single substance exposure level over a specified time period to a reference dose for that substance derived from a similar exposure period.

hazardous substance – a substance which, upon release into the atmosphere, water, sediments, or soil, or which, in direct contact with the skin or other organs, or which is consumed with or without food, cause health risks to humans or animals through absorption, inhalation, or ingestion.

headwater streams – the smallest streams in a watershed, usually including low-order (*i.e.*, first-, second-, and third-order) streams. First-order streams are the smallest distinct streams in a watershed. Second-order streams are formed when two first-order channels combine, third-order streams are formed by the combination of two second-order streams, and so on.

hermaphroditism – the functioning of both sexes during the lifetime of an individual animal. Hermaphroditism occurs in two forms, **simultaneous**, when an individual functions as both sexes at the same time, as in many invertebrates (*e.g.*, earthworms [*Lumbricus* spp.]), or **sequential**, when the genders occur in a sequence (one sex, then the other) as in some fishes (*e.g.*, black sea bass [*Centropristis striata*]).

herbivore – a consumer of plants. Examples in the Meadowlands include many insects (*e.g.*, *Galerucella* beetles, which consume purple loosestrife) and certain mammals (*e.g.*, white-tailed deer [*Odocoileus virginianus*]).

heterogeneous – consisting of different elements or parts. Antonym of homogeneous.

heterotrophic – refers to organisms which acquire and convert forms of organic carbon to obtain energy. Heterotrophic organisms include all animals, fungi, some algae, parasitic plants, and most bacteria. See **consumer**. Compare with **autotrophic**.

homogeneous – consisting of similar elements or parts. Antonym of heterogeneous.

hydric – characterized by, relating to, or requiring an abundance of water

hydrology – the science of the distribution, properties, and circulation of water above, on, and below the earth's surface.

hydrophilic – "water-loving," usually referring to a substance, molecule, or portion of a molecule that has a strong affinity for and readily mixes with water. Hydrophilic substances are polar; examples of hydrophilic substances include sugars, salts, ammonia, and alcohols.

hydrophobic – "water fearing," usually referring to a substance, molecule, or a portion of a molecule that will not mix with or repels water. Most hydrophobic substances are non-polar. Examples of hydrophobic substances include oils and waxes.

hydroxylation – the addition of a hydroxyl group (-OH) to a compound; this addition most often involves the replacement of a hydrogen atom. Hydroxylation represents an oxidation of the molecule and often makes an atom more polar (charge imbalanced) and thus more soluble in water. Hydroxylation in living organisms is usually accomplished by an enzyme known as a hydroxylase. For example, hydroxylation of PCBs makes them more soluble in water and may increase their uptake and excretion.

hypoxia – a low oxygen condition (adjective = hypoxic). When occurring in surface waters, oxygen concentrations are usually between 1 and 2 ppm. Slightly higher oxygen concentrations (up to 3.2 ppm) may be considered hypoxic for invertebrates and other sensitive aquatic organisms. Most aquatic organisms are stressed by hypoxic conditions.

impairment – a diminished capacity of a habitat or ecosystem to support fish and wildlife that results from an environmental alteration. An impaired water body is one in which some chemical or physical component of water quality does not meet some specified federal or State criterion. Water quality in the Hackensack River is impaired, as a result of exceeding numerous water quality criteria (*e.g.*, oxygen concentration).

indirect value – economic values resulting from fish and wildlife resources that are not harvested or damaged during their use. Examples include ecosystem services (stormwater storage, production, and biogeochemical) and recreation.

interjurisdictional fishery – a freshwater, coastal, or marine fish population managed by two or more states, nations, or tribal governments because of the population's geographic distribution or migratory patterns.

invasive species – animal or plant species that colonize and spread, often displacing other species and altering communities. Invasive species are usually, though not always, exotic (non-native) species; two common examples of invasive species in the Meadowlands include common reed (*Phragmites australis*) and Japanese knotweed (*Polygonum cuspidatum*).

isolation effect – in ecology, an effect of distance from something, which usually contributes to a difference in the entity (*e.g.*, wetland, biological population) that is isolated.

keystone species – a species that affects the survival and abundance of many other species in the community in which it lives. Its removal or addition results in a significant shift in the composition and sometimes even the physical structure of the community.

lacustrine – pertaining to a lake or lakes. A synonym of lentic.

landform – the physical form or shape of a wetland. In general, six landform types are recognized: basin, flat, slope, floodplain, island, and fringe.

landscape position – descriptor of the relationship between a wetland and an adjacent waterbody. Four general types are recognized: estuarine (along marine and brackish waters), lotic (along freshwater rivers and streams), lentic (along lakes and reservoirs), and terrene (isolated, surrounded by upland).

lentic- refers to wetlands located along any permanent waterbody with standing water (*e.g.*, lake, pond, reservoir). A synonym of lacustrine.

lipophilic – "fat-loving," usually referring to a substance, molecule, or portion of a molecule that has a strong affinity for and readily mixes with fats. Many lipophilic substances are non-polar. Examples of lipophilic substances include steroid hormones, dioxins, and PCBs.

lotic – refers to wetlands located along any permanent waterbody with running water (*e.g.*, river or stream).

low-order stream – the smallest tributary of a river in a watershed; a headwater stream with no tributaries.

marine protected area (MPA) –- any marine area that is protected by legislation (*e.g.*, National Marine Sanctuaries Act); within an MPA, activities are regulated to protect natural resources, biodiversity, or human livelihoods. The level of protection between MPAs varies with the protecting legislation.

marine transient species – species such as certain fishes (*e.g.*, summer flounder [*Paralichthys dentatus*]) that use various estuarine habitats during their early life history stages and marine and estuarine habitats as adults.

mesohaline – refers to aquatic ecosystems with a salinity between 5 and 18 ppt. Extensive portions of the Meadowlands now experience mesohaline conditions.

mitigation – the steps taken to avoid or minimize adverse impacts on environmental resources or environmental processes. For consistency with federal laws, mitigation is a sequential process that (1) avoids an impact altogether by not taking certain actions or parts of an action; (2) minimizes impacts by limiting the degree or magnitude of the action and its implementation; repairing, rehabilitating, or restoring the affected environment; or reduces the impact over time by preservation and maintenance operations during the life of the action; and finally, (3) compensates for the action's impact by replacing or providing substitute resources or lands.

monitoring – the process of continually checking, observing, recording or testing of some phenomenon, activity, or feature.

monophagous – a pest species with only one species of host plant. One well- known example of a monophagous insect is the boll weevil (*Anthonomus grandis*); all stages in the life history of this beetle feeds only on the bolls of cotton.

mutagen – a substance or agent (*e.g.*, radiation) that causes a mutation, which is a change in the base sequence of a cell's DNA. Mutations can lead to birth defects, miscarriages, or cancer. Benzo-[a]-pyrene, a polycyclic aromatic hydrocarbon (see PAH below), is a potent mutagen.

natural – indicating an ecosystem in which diverse conditions (*e.g.*, nutrient concentrations, water quality) and functions (*e.g.*, biogeochemistry, biodiversity) do not reflect extensive human activities or disturbance.

nekton – community of free-swimming animals. The nekton includes fishes, whales, sea turtles, squid, portunid (swimming) crabs, and other swimming animals.

nest parasitism – an association where one animal (parasite) lays eggs in the nest of another animal (host or foster parent) of the same (conspecific) or different (interspecific) species. Obligate nest parasites have lost the ability to build nests and incubate eggs, and do not rear their own young. Examples of conspecific parasites include bank swallows (*Riparia riparia*) and redhead (*Aythya americana*); obligate nest parasites include brown-headed cowbird (*Molothrus ater*) and yellow-billed cuckoo (*Coccyzus americanus*).

Northern Triassic Lowlands – one formation of the Piedmont Lowlands, which occurs in northern New Jersey and eastern Pennsylvania and is underlain by sedimentary rocks that are 240- 205 million years old.

oligohaline – refers to aquatic ecosystems with a salinity between 0.5 and 5 ppt. Upper portions of the Meadowlands now experience oligohaline conditions throughout much of the year.

omnivore – an animal that consumes plants and animals as food. Examples of omnivores in the Meadowlands include certain birds (*e.g.*, American crow [*Corvus brachyrhynchos*], song

sparrow [*Melospiza melodia*], northern mockingbird [*Mimus polyglottos*]) and mammals (***e.g.***, raccoon [*Procyon lotor*], gray fox [*Urocyon cinereoargenteus*]).

option value – the potential economic value of a species for future use. For example, many plants, fungi, and bacteria produce chemicals that may have value for treating diseases. Pacific yew (*Taxus brevifolia*) was considered a "trash" tree species until it was recognized that yew bark contained a potent anticancer agent known as taxol. Recognition of the mode of action of this chemical led to an entirely new class of anticancer medicines.

palustrine – nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and all such tidal wetlands where ocean-derived salinities are below 0.5 ppt. This category also includes wetlands lacking such vegetation but with all of the following characteristics: (1) area less than 8 ha; (2) lacking an active wave-formed or bedrock boundary; (3) water depth in the deepest part of the basin less than 2 m (6.6 ft) at low water; and (4) ocean-derived salinities less than 0.5 ppt.

PCDD/PCDF – polychlorinated dibenzodioxin (**dioxin**) / polychlorinated dibenzofuran (**furan**).

pH – the potential of hydrogen, the negative logarithm (to the base 10) of the hydronium ion (H^+) concentration, in moles per liter. It is a numerical measure of acidity (when pH <7) or alkalinity (when pH > 7) on a scale of 1 to 14, with the value of 7.0 being neutral and approximately equal to the hydronium ion concentration of distilled water.

phylum (-a) – the primary taxonomic division within the animal kingdom**.** An example of an animal phylum is the Arthropoda, which consists of all animals having jointed appendages and an exoskeleton (***e.g.***, crabs, spiders, insects).

Piedmont Lowlands – together with the Piedmont Uplands, one of two sections of the Piedmont Physiographic Province. The Hackensack Meadowlands lies entirely within the Piedmont Lowlands.

piscivore – a fish-eating species (adjective = **piscivorous**). Examples in the Meadowlands include certain fishes (***e.g.***, striped bass [*Morone saxatilis*]), birds (***e.g.***, osprey [*Pandion haliaetus*]), and mammals (***e.g.***, harbor seal [*Phoca vitulina*]).

planktivorous – plankton-eating. A common **planktivore** in the Meadowlands is the Atlantic silverside (*Menidia menidia*).

plankton – community of small drifting, floating, or weakly swimming organisms that inhabit the water column. Most species in the plankton have a small body size; examples include copepods, jellyfishes, and the larvae of fishes, crabs, and clams.

Pleistocene Epoch – time period between about 1,650,000 and 10,000 years before present. In general, this is the time period during which humans largely evolved and the Northern Hemisphere was covered extensively by glaciers.

polychlorinated biphenyl (PCB) – any of 209 chlorinated compounds consisting of two benzene rings connected by a single carbon to carbon bond. PCBs were manufactured by Monsanto (U.S. production = 1.25 billion pounds) and used in mixtures as lubricants, heat exchangers, dielectric fluids, and plasticizers due to their relative chemical inertness, low solubility in water, resistance to acids and alkalis, and thermal stability. PCBs are persistent, widely distributed throughout the environment, carcinogenic in animals; nearly all adversely affect the immune, reproductive, nervous, and endocrine systems of fish and wildlife.

polycyclic aromatic hydrocarbons (PAH) – any of a group of approximately 100 aromatic hydrocarbon compounds consisting of two or more fused carbon rings, which are produced by incomplete combustion of organic molecules and also are a component of crude oil. PAHs interfere (1) with cell division and photosynthesis of plants and thus cause various sublethal and lethal effects, and (2) with cellular membrane enzymes and membrane functions in animals, and thus cause mutations, developmental malformation, tumors, and cancers.

polyhaline – refers to aquatic ecosystems with a salinity between 18 and 30 ppt.

primary production – the amount of organic material (biomass) synthesized by living organisms from inorganic material in a given area in a given period, usually expressed as grams of carbon per square meter per year; most primary production results from photosynthesis in plants and algae, though it may result from other processes in bacteria.

producer – an organism that converts inorganic molecules into energy-rich organic molecules that can be used as food. Examples of producers include algae and nearly all plants. Synonym of autotroph. Compare with **consumer** and **decomposer**.

production – the amount of organic material (biomass) produced by living organisms, most often expressed per unit area (or volume) per unit time; usually divided into primary (of producers) and secondary (of consumers) components. Estuaries are recognized widely for having high rates of primary and secondary production.

remediation – activities performed to clean up or treat hazardous waste sites, sometimes including activities to relieve their adverse effects.

restoration – the repair of ecological damage to an ecosystem so that: (1) it is close to the natural condition prior to a disturbance or degradation, and (2) it can function as a normal self-regulating system. Restoration may be accomplished through processes such as re-vegetation and/or the reintroduction of native species.

riparian – of, relating to, or located on or along the banks of a waterbody, usually referring to streams, rivers, lakes.

riverine – wetland and deepwater habitats contained within a channel except those wetlands: (1) dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) which have salinities greater than 0.5 ppt.

salinity – the concentration of salt in a solution, such as seawater, commonly and simply measured as the relative weight in parts per hundred (pph or percent [%]) or parts per thousand (ppt). The salinity of seawater is 3.5% or 35 ppt.

sandstone – a sedimentary rock composed largely of coarse, weathered quartz grains (sand) held in a matrix of silt or clay.

scale effect – an effect that changes as a correlate of the size or level of some factor. For example, fragmentation effects change with the size of the area that is fragmented.

Screening Level Ecological Risk Assessment (SLERA) – an initial assessment of a potential hazardous site, as recommended by the EPA. This includes an assessment of: (1) the site and its known or suspected contaminants, (2) potential contaminant fates and transport mechanisms, (3) contaminant ecotoxicity and potentially affected taxa, (4) potential exposure pathways, and (5) selection of endpoints to screen for risk. The Service recommends a SLERA for potential restoration sites in the Hackensack Meadowlands.

sea level rise (SLR) – an increase in apparent height of water in an ocean in relation to some point on land; sea level rise may result from an increase in an ocean's mass (more water in an ocean basin [eustatic sea level rise]), an increase in an ocean's volume (thermal expansion with increasing temperature due to global climate change [steric sea level rise]), or geology (movements, changes in the earth's crust [local sea level rise]).

secondary production – the amount of organic material (biomass) produced in a given area in a given period by consumers, usually expressed as grams of carbon per square meter per year; organic material produced by processing other organic material.

secondary treatment – the second step in most sewage treatment systems in which bacteria consume most (85 to 90 percent) of the organic components of the waste, primarily dissolved substances and suspended solids. Disinfection is the final stage of secondary treatment.

sediment – mineral and organic particles that have been transported by air, water, or ice and deposited on the bottom of an aquatic environment

sentinel species – a species that is a sensitive indicator of chemical, physical, or biological disturbance in the environment. Because they occur in aquatic and terrestrial environments and may absorb materials through gills, lungs, and skin, amphibians are considered sentinel species.

shale – a sedimentary rock composed largely of fine particles of clays, silts, and detritus.

sink habitat – a habitat in which reproduction is insufficient to balance mortality. Populations are unable to persist long-term in sink habitats without immigration of individuals from other productive habitats. See **source habitat.**

soil – the unconsolidated mineral and organic materials on the immediate surface of the earth that serves as a natural medium for the growth of land plants. In contrast to the underlying

source material, soil has been altered by the interactions of climate, topographic relief, and living organisms over time.

source habitat – a habitat in which reproduction exceeds mortality. Populations generally persist long-term in source habitats; individuals in source habitats may also migrate into less-productive habitats nearby. See **sink habitat**.

stakeholder – an individual or organization that has an interest or investment.

steric sea level rise- increase in the sea level due to the thermal expansion of water with increasing temperature, *i.e.*, an increase in the volume but not the mass of the ocean.

Superfund site – any federal priority listed site in the United States that has been contaminated by hazardous waste and identified by the EPA as a candidate for cleanup because it poses a risk to human health or the environment.

surface elevation table – a mechanical leveling device for precisely measuring the relative elevation of wetland sediments or water surface. Surface elevation tables can be used to determine both the influence of a single meteorological event on sediment surface elevation and long-term trends in elevation change. When used with marker horizons (*i.e.*, a layer of feldspar, glitter, or other material sprinkled over the surface), information on both above- and below-ground processes affecting elevation can be obtained. Surface elevation tables can provide information to determine rates of sedimentation, erosion, sea level rise.

sustain – support, maintain, or keep alive continually

sustainable – the maintenance of a condition (such as biodiversity or resource productivity) over time indefinitely.

taxon (taxa) – any group of evolutionarily related organisms. Examples of taxa include species (humans, *Homo sapiens*), genus (all species of *Homo*), family (Hominids, including humans and great apes), class (primates, including hominids and other monkeys), and mammals (primates and other groups such as rodents, carnivores, whales).

teratogen – an agent or substance that may cause a non-heritable mutation or malformation in the developing embryo or fetus when a pregnant female is exposed to that substance. Cadmium and chromium are teratogens in certain wildlife.

terrene – of, or pertaining to, a land area.

terrestrial – in, on, or referring to land (as opposed to water).

threatened species (federally listed) – those species likely to become endangered within the foreseeable future throughout all or a significant portion of their range. Threatened species are listed pursuant to the Endangered Species Act of 1973.

tidal prism – the volume of water that moves in and out of an estuary with each tide.

topography – the detailed arrangement of a portion of the earth's surface and the relations among its man-made and natural features.

traprock – various dark-colored, heavy igneous (volcanic) rocks (*e.g.*, basalt, dolerite, amygdaloid, diorite, and feldspathic-augitic rocks).

trophic dynamics – the biological processes (*e.g.*, predation) whereby energy and matter are passed up through successive levels of food webs.

trust resource (federal) – a resource (*e.g.*, federally listed species, migratory birds) for which the Service (or NOAA) is responsible as defined by legislation, treaty, or other legal authorities.

turbidity maximum zone – a localized area in an estuary where acidic to neutral freshwater mixes with more alkaline seawater and dissolved materials adhere to suspended particulate matter or otherwise settle or "flocculate" out of solution. The turbidity maximum zone moves within the estuary on tidal and seasonal periods. The area bounded by the zone accumulates materials, including contaminants; in some estuaries, it may be a zone of high production.

varved – layered. Many sedimentary deposits of clays, shales and slates are varved.

vegetative cover type – A plant community or group of plant communities having the same primary dominant species and similar physiognomy; an aggregation of plant community types. An example of a vegetative cover type is the low-marsh cover type, comprised mostly of smooth cordgrass (*Spartina alterniflora*) with patches of other plants (mostly grasses, *e.g.*, dwarf spike rush [*Eleocharis parvula*], salt marsh hay [*Spartina patens*], and spikegrass [*Distichlis spicata*]).

watershed – the area of land draining into, and including, the receiving waterbody; synonym of **drainage basin**.

wetlands – transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands have one or more of the following attributes: (1) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year; (2) the substrate is predominantly undrained hydric soil; and (3) at least periodically, the land supports aquatic plants. Some examples of wetlands include freshwater swamps, saltwater marshes, vernal pools, intertidal mudflats, and portions of lakes, ponds, rivers, and streams.

Wisconsin glaciation – the last of the great glacial periods that occurred from about 11,000 to about 25,000 years ago.