

Glossary



Tiger Swallowtail butterfly
Gene Stires ©

Glossary

accessibility: the state or quality of being easily approached or entered, particularly as it relates to complying with the Americans With Disabilities Act.

accessible facilities: structures accessible for most people with disabilities without assistance; facilities that meet UFAS standards; ADA-accessible (e.g, parking lots, trails, pathways, ramps, picnic and camping areas, restrooms, boating facilities (docks, piers, gangways), fishing facilities, playgrounds, amphitheaters, exhibits, audiovisual programs, and wayside sites.)

aggregate: many parts considered together as a whole.

agricultural land: nonforested land (now or recently orchards, pastures, or crops).

alternative: a reasonable way to fix an identified problem or satisfy a stated need [40 CFR 1500.2 (cf. “management alternative”)] .

amphidromous fish: fish that can migrate from fresh water to the sea or the reverse, not only for breeding, but also regularly at other times during their life cycle.

appropriate use: a proposed or existing use on a refuge that meets at least one of the following three conditions: (1) the use is a wildlife-dependent one; (2) the use contributes to fulfilling the refuge purpose(s), the System mission, or goals or objectives described in a refuge management plan approved after October 9, 1997, the date the National Wildlife Refuge System Improvement Act was signed into law; or (3) the use has been determined appropriate as specified in section 1.11 of that act.

approved acquisition boundary: a project boundary that the Director of the U.S. Fish and Wildlife Service approves upon completion of the planning and environmental compliance process. An approved acquisition boundary only designates those lands which the Service has authority to acquire or manage through various agreements. The approval of an acquisition boundary does not grant the Service jurisdiction or control over lands within the boundary, and it does not make lands within the refuge boundary part of the National Wildlife Refuge System. Lands do not become part of the System until the Service buys them or they are placed under an agreement that provides for their management as part of the System.

anadromous fish: from the Greek, literally “up-running”; fish that spend a large portion of their life cycle in the ocean and return to freshwater to breed.

aquatic: growing in, living in, or dependent upon water.

aquatic barrier: any obstruction to fish passage.

aquifer: a formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

area of biological significance: cf. “special focus area”.

area sensitive species: species that require large areas of contiguous habitat.

assemblage: in conservation biology, a predictable and particular collection of species within a biogeographic unit (e.g., ecoregion or habitat).

barrens: a colloquial name given to habitats with sparse vegetation or low agricultural productivity.

barrier : cf. “aquatic barrier”.

basin: the land surrounding and draining into a water body (cf. “watershed”).

benthic: living at, in, or associated with structures on the bottom of a body of water.

- best management practices:** land management practices that produce desired results. [N.b. Usually describing forestry or agricultural practices effective in reducing non point source pollution, like reseeded skidder trails or not storing manure in a flood plain. In their broader sense, practices that benefit target species.]
- biological diversity or biodiversity:** the variety of life and its processes and includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.
- biological integrity:** biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions, including the natural biological processes that shape genomes, organisms and communities.
- bog:** a poorly drained area rich in plant residues, usually surrounded by an area of open water, and having characteristic flora.
- breeding habitat:** habitat used by migratory birds or other animals during the breeding season.
- buffer zones:** land bordering and protecting critical habitats or water bodies by reducing runoff and nonpoint source pollution loading; areas created or sustained to lessen the negative effects of land development on animals, plants, and their habitats.
- candidate species:** species for which we have sufficient information on file about their biological vulnerability and threats to propose listing them.
- catadromous fish:** fish that spend most of their lives in fresh water, but migrate to sea to reproduce.
- categorical exclusion [CE, CX, CATEX, CATX]:** pursuant to the National Environmental Policy Act (NEPA) , a category of Federal agency actions that do not individually or cumulatively have a significant effect on the human environment [40 CFR 1508.4].
- CFR:** the Code of Federal Regulations.
- Challenge Grant Cost Share Program:** a Service-administered grant program that provides matching funds for projects supporting natural resource education, management, restoration, or protection on Service lands, other public lands, and private lands.
- citizen monitoring projects:** projects coordinated locally to conduct environmental inventories; their data expand what agencies know, and are available to anyone interested.
- community:** the locality in which a group of people resides and shares the same government.
- community type:** a particular assemblage of plants and animals, named for its dominant characteristic.
- compatible use:** “The term ‘compatible use’ means a wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge.” National Wildlife Refuge System Improvement Act of 1997 [Public Law 105-57; 111 Stat. 1253].
- compatibility determination:** a required determination for wildlife-dependent recreational uses or any other public uses of a refuge.
- Comprehensive Conservation Plan:** mandated by the Improvement Act, a document that provides a description of the desired future conditions and long-range guidance for the project leader to accomplish purposes of the refuge system and the refuge. CCPs establish management direction to achieve refuge purposes [P.L. 105-57; FWS Manual 602 FW 1.4].
- concern:** cf. “issue”.

conifer: a tree or shrub in the phylum Gymnospermae whose seeds are borne in woody cones. There are 500B600 species of living conifers (Norse 1990).

conservation: managing natural resources to prevent loss or waste. [N.b. Management actions may include preservation, restoration, and enhancement.]

conservation agreements: written agreements among two or more parties for the purpose of ensuring the survival and welfare of unlisted species of fish and wildlife or their habitats or to achieve other specified conservation goals. Participants voluntarily commit to specific actions that will remove or reduce threats to those species.

conservation easement: a legal agreement between a landowner and a land trust (e.g., a private, nonprofit conservation organization) or government agency that permanently limits the uses of a property to protect its conservation values. A non-possessory interest in real property owned by another imposing limitations or affirmative obligations with the purpose of returning or protecting the property's conservation values.

cool-season grass: introduced grass for crop and pastureland that grows in spring and fall and is dormant during hot summer months.

cooperative agreement: a usually long-term habitat protection action, which can be modified by either party, in which no property rights are acquired. Lands under a cooperative agreement do not necessarily become part of the National Wildlife Refuge System.

critical habitat: according to U.S. Federal law, the ecosystems upon which endangered and threatened species depend.

cultural resource inventory: a professional study to locate and evaluate evidence of cultural resources within a defined geographic area. [N.b. Various levels of inventories may include background literature searches, comprehensive field examinations to identify all exposed physical manifestations of cultural resources, or sample inventories for projecting site distribution and density over a larger area. Evaluating identified cultural resources to determine their eligibility for the National Register follows the criteria in 36 CFR 60.4 (cf. FWS Manual 614 FW 1.7).]

cultural resource overview: a comprehensive document prepared for a field office that discusses, among other things, project prehistory and cultural history, the nature and extent of known cultural resources, previous research, management objectives, resource management conflicts or issues, and a general statement of how program objectives should be met and conflicts resolved. [An overview should reference or incorporate information from a field office's background or literature search described in section VIII of the Cultural Resource Management Handbook (FWS Manual 614 FW 1.7).]

database: a collection of data arranged for ease and speed of analysis and retrieval, usually computerized.

dedicated open space: land to be held as open space forever.

degradation: the loss of native species and processes due to human activities such that only certain components of the original biodiversity persist, often including significantly altered natural communities.

designated wilderness area: an area designated by Congress as part of the National Wilderness Preservation System [FWS Manual 610 FW 1.5 (draft)].

diadromous: fish that migrate from freshwater to saltwater or the reverse; a generic term that includes anadromous, catadromous, and amphidromous fish.

digitizing: the process of converting maps into geographically referenced electronic files for a geographic information system (GIS).

- disturbance:** any relatively discrete event in time that disrupts ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment.
- donation:** a citizen or group may wish to give land or interests in land to the Service for the benefit of wildlife. Aside from the cost factor, these acquisitions are no different than any other means of land acquisition. Gifts and donations have the same planning requirements as purchases.
- drumlin:** a ridge or oval hill with a smooth summit composed of material deposited by a glacier.
- easement:** an agreement by which landowners give up or sell one of the rights on their property [e.g. landowners may donate rights-of-way across their properties to allow community members access to a river (cf. “conservation easement”)]. A non-possessory interest in real property owned by another imposing limitations or affirmative obligations with the purpose of returning or protecting the property’s conservation values.
- ecological processes:** a complex mix of interactions among animals, plants, and their environment that ensures maintenance of an ecosystem's full range of biodiversity. Examples include population and predator-prey dynamics, pollination and seed dispersal, nutrient cycling, migration, and dispersal.
- ecoregion:** a territory defined by a combination of biological, social, and geographic criteria, rather than geopolitical considerations; generally, a system of related, interconnected ecosystems.
- ecosystem:** a natural community of organisms interacting with its physical environment, regarded as a unit.
- ecosystem service:** a benefit or service provided free by an ecosystem or by the environment, such as clean water, flood mitigation, or groundwater recharge.
- ecotourism:** visits to an area that maintains and preserves natural resources as a basis for promoting its economic growth and development.
- ecosystem approach:** a way of looking at socio economic and environmental information based on the boundaries of ecosystems like watersheds, rather than on geopolitical boundaries.
- ecosystem based management:** an approach to making decisions based on the characteristics of the ecosystem in which a person or thing belongs. [N.b. This concept considers interactions among the plants, animals, and physical characteristics of the environment in making decisions about land use or living resource issues.]
- emergent wetland:** wetlands dominated by erect, rooted, herbaceous plants.
- endangered species:** a Federal- or State-listed protected species in danger of extinction throughout all or a significant portion of its range.
- endemic:** a species or race native to a particular place and found only there.
- environmental education:** curriculum-based education aimed at producing a citizenry that is knowledgeable about the biophysical environment and its associated problems, aware of how to help solve those problems, and motivated to work toward solving them.
- environmental health:** the composition, structure, and functioning of soil, water, air, and other abiotic features comparable with historic conditions, including the natural abiotic processes that shape the environment.
- Environmental Assessment:** (EA) a public document that discusses the purpose and need for an action, its alternatives, and provides sufficient evidence and analysis of its impacts to determine whether to prepare an environmental impact statement or a finding of no significant impact (q.v.) [cf. 40 CFR 1508.9].

- Environmental Impact Statement:** (EIS) a detailed, written analysis of the environmental impacts of a proposed action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitment of resources [cf. 40 CFR 1508.11].
- estuaries:** deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from land.
- estuarine wetlands:** “The Estuarine system consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land” Cowardin et al. 1979.
- exemplary community type:** an outstanding example of a particular community type.
- extinction:** the termination of any lineage of organisms, from subspecies to species and higher taxonomic categories from genera to phyla. Extinction can be local, in which one or more populations of a species or other unit vanish but others survive elsewhere, or total (global), in which all the populations vanish (Wilson 1992).
- extirpated:** status of a species or population that has completely vanished from a given area but that continues to exist in some other location.
- exotic species:** a species that is not native to an area and has been introduced intentionally or unintentionally by humans; not all exotics become successfully established.
- Federal land:** public land owned by the Federal Government, including national forests, national parks, and national wildlife refuges.
- Federal-listed species:** a species listed either as endangered, threatened, or a species at risk (formerly, a “candidate species”) under the Endangered Species Act of 1973, as amended.
- fee-title acquisition:** the acquisition of most or all of the rights to a tract of land; a total transfer of property rights with the formal conveyance of a title. While a fee-title acquisition involves most rights to a property, certain rights may be reserved or not purchased, including water rights, mineral rights, or use reservation (e.g., the ability to continue using the land for a specified time period, such as the remainder of the owner's life).
- Finding of No Significant Impact:** (FONSI) supported by an environmental assessment, a document that briefly presents why a Federal action will have no significant effect on the human environment, and for which an environmental impact statement, therefore, will not be prepared [40 CFR 1508.13].
- fire regime:** the characteristic frequency, intensity, and spatial distribution of natural fires within a given ecoregion or habitat.
- fish passage project:** providing a safe passage for fish around a barrier in the upstream or downstream direction.
- floodplain:** flat or nearly flat land that may be submerged by floodwaters; a plain built up or in the process of being built up by stream deposition.
- focus areas:** cf. “special focus areas”.
- forbs:** flowering plants (excluding grasses, sedges, and rushes) that do not have a woody stem and die back to the ground at the end of the growing season.

- forest association:** the community described by a group of dominant plant (tree) species occurring together, such as spruce-fir or northern hardwoods.
- forested land:** land dominated by trees. [For impacts analysis in CCP's, we assume all forested land has the potential for occasional harvesting; we assume forested land owned by timber companies is harvested on a more intensive, regular schedule.]
- forested wetlands:** wetlands dominated by trees.
- fragmentation:** the disruption of extensive habitats into isolated and small patches. Fragmentation has two negative components for biota: the loss of total habitat area; and, the creation of smaller, more isolated patches of habitat remaining.
- GAP analysis:** the use of various remote sensing data sets to build overlaid sets of maps of various parameters (e.g., vegetation, soils, protected areas, species distributions) to identify spatial gaps in species protection and management programs.
- geographic information system:** (GIS) a computerized system to compile, store, analyze and display geographically referenced information [e.g, GIS can overlay multiple sets of information on the distribution of a variety of biological and physical features.]
- glade:** an open space surrounded by forest.
- grant agreement:** the legal instrument used when the principal purpose of the transaction is the transfer of money, property, services, or anything of value to a recipient in order to accomplish a public purpose of support or stimulation authorized by Federal statute and substantial involvement between the Service and the recipient is *not* anticipated (cf. "cooperative agreement").
- grassland:** a habitat type with landscapes dominated by grasses and with bio-diversity characterized by species with wide distributions, communities being relatively resilient to short-term disturbances but not to prolonged, intensive burning or grazing. In such systems, larger vertebrates, birds, and invertebrates display extensive movement to track seasonal or patchy resources.
- grassroots conservation organization:** any group of concerned citizens who act together to address a conservation need.
- groundwater:** water in the ground that is in the zone of saturation, from which wells and springs and groundwater runoff are supplied.
- guild:** a group of organisms, not necessarily taxonomically related, that are ecologically similar in characteristics such as diet, behavior, or microhabitat preference, or with respect to their ecological role in general.
- habitat block:** a landscape-level variable that assesses the number and extent of blocks of contiguous habitat, taking into account size requirements for populations and ecosystems to function naturally. It is measured here by a habitat-dependent and ecoregion size-dependent system.
- habitat fragmentation:** the breaking up of a specific habitat into smaller, unconnected areas. [N.b. A habitat area that is too small may not provide enough space to maintain a breeding population of the species in question.]
- habitat conservation:** protecting an animal or plant habitat to ensure that the use of that habitat by the animal or plant is not altered or reduced.
- habitat:** the place where a particular type of plant or animal lives. [N.b. An organism's habitat must provide all of the basic requirements for life, and should be free of harmful contaminants.]

historic conditions: the composition, structure and functioning of ecosystems resulting from natural processes that we believe, based on sound professional judgement, were present prior to substantial human-related changes to the landscape.

hydrologic or flow regime: characteristic fluctuations in river flows.

hydrology: the science of waters of the earth: their occurrences, distributions, and circulations; their physical and chemical properties; and their reactions with the environment, including living beings.

important fish areas: the aquatic areas identified by private organizations, local, state, and federal agencies that meet the purposes of the Conte Act.

impoundment: a body of water, such as a pond, confined by a dam, dike, floodgate, or other barrier, which is used to collect and store water for future use.

indicator species: a species used as a gauge for the condition of a particular habitat, community, or ecosystem. A characteristic or surrogate species for a community or ecosystem.

indigenous: native to an area.

indigenous species: a species that, other than a result as an introduction, historically occurred or currently occurs in a particular ecosystem.

informed consent: the grudging willingness of opponents to go along with a course of action that they actually oppose.

interjurisdictional fish: populations of fish that are managed by two or more States or national or tribal governments because of the scope of their geographic distributions or migrations.

interpretive facilities: structures that provide information about an event, place, or thing by a variety of means, including printed, audiovisual, or multimedia materials. [e.g, kiosks that offer printed materials and audiovisuals, signs, and trail heads.]

interpretive materials: any tool used to provide or clarify information, explain events or things, or increase awareness and understanding of the events or things [e.g, printed materials like brochures, maps or curriculum materials; audio/visual materials like video and audio tapes, films, or slides; and, interactive multimedia materials, CD ROM or other computer technology.]

interpretive materials projects: any cooperative venture that combines financial and staff resources to design, develop, and use tools for increasing the awareness and understanding of events or things related to a refuge.

introduced invasive species: non native species that have been introduced into an area and, because of their aggressive growth and lack of natural predators, displace native species.

invasive species: an alien species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

invertebrate: any animal lacking a backbone or bony segment that encloses the central nerve cord.

issue: any unsettled matter that requires a management decision. [e.g, a Service initiative, an opportunity, a management problem, a threat to the resources of the unit, a conflict in uses, a public concern, or the presence of an undesirable resource condition] [N.b. A CCP should document, describe, and analyze issues even if they cannot be resolved during the planning process (FWS Manual 602 FW 1.4).]

kettle hole: a generally circular hollow or depression in an *outwash plain* or *moraine*, believed to have formed where a large block of subsurface ice has melted.

- keystone species:** species that are critically important for maintaining ecological processes or the diversity of their ecosystems.
- lacustrine wetlands:** “The Lacustrine system includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total area exceeds eight ha (20 acres).” Cowardin et al. 1979.
- Land Protection Plan (LPP):** a document that identifies and prioritizes lands for potential Service acquisition from a willing seller, and also describes other methods of providing protection. Landowners within project boundaries will find this document, which is released with environmental assessments, most useful.
- land trusts:** organizations dedicated to conserving land by purchase, donation, or conservation easement from landowners.
- landform:** the physical shape of the land reflecting geologic structure and processes of geomorphology that have sculpted the structure.
- landscape:** an aggregate of landforms, together with its biological communities.
- late-successional:** species, assemblages, structures, and processes associated with mature natural communities that have not experienced significant disturbance for a long time.
- limiting factor:** an environmental limitation that prevents further population growth.
- limits of acceptable change:** a planning and management framework for establishing and maintaining acceptable and appropriate environmental and social conditions in recreation settings.
- local land:** public land owned by local governments, including community or county parks or municipal watersheds.
- local agencies:** generally, municipal governments, regional planning commissions, or conservation groups.
- long term protection:** mechanisms like fee title acquisition, conservation easements, or binding agreements with landowners that ensure land use and land management practices will remain compatible with maintaining species populations over the long term.
- macroinvertebrates:** invertebrates large enough to be seen with the naked eye (e.g., most aquatic insects, snails, and amphipods).
- management alternative:** a set of objectives and the strategies needed to accomplish each objective [FWS Manual 602 FW 1.4].
- management concern:** cf. “issue” and “migratory nongame birds of management concern”.
- management opportunity:** cf. “issue”.
- management plan:** a plan that guides future land management practices on a tract. [N.b. In the context of an environmental impact statement, management plans may be designed to produce additional wildlife habitat along with primary products like timber or agricultural crops (cf. “cooperative agreement”).]
- management strategy:** a general approach to meeting unit objectives. [N.b. A strategy may be broad, or it may be detailed enough to guide implementation through specific actions, tasks, and projects (FWS Manual 602 FW 1.4).]
- mesic soil:** sandy-to-clay loams containing moisture-retentive organic matter, well drained (no standing matter).

migratory nongame birds of management concern: species of nongame birds that (a) are believed to have undergone significant population declines; (b) have small or restricted populations; or (c) are dependent upon restricted or vulnerable habitats.

mission statement: a succinct statement of the purpose for which the unit was established; its reason for being.

mitigation: actions to compensate for the negative effects of a particular project. [e.g, wetland mitigation usually restores or enhances a previously damaged wetland or creates a new wetland.]

moraine: a mass or ridge of earth scraped up by ice and deposited at the edge or end of a glacier.

National Environmental Policy Act of 1969: (NEPA) requires all Federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in planning and implementing environmental actions.[Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documents to facilitate better environmental decision-making (cf. 40 CFR 1500).]

National Wildlife Refuge Complex: (Complex) an internal Service administrative linking of refuge units closely related by their purposes, goals, ecosystem, or geopolitical boundaries.

National Wildlife Refuge System: (System) all lands and waters and interests therein administered by the Service as wildlife refuges, wildlife ranges, wildlife management areas, waterfowl production areas, and other areas for the protection and conservation of fish and wildlife, including those that are threatened with extinction.

native: a species that, other than as a result of an introduction, historically occurred or currently occurs in a particular ecosystem.

native plant: a plant that has grown in the region since the last glaciation, and occurred before European settlement.

natural disturbance event: any natural event that significantly alters the structure, composition, or dynamics of a natural community: e.g., floods, fires, and storms.

natural range of variation: a characteristic range of levels, intensities, and periodicities associated with disturbances, population levels, or frequency in undisturbed habitats or communities.

Neotropical migrant: birds, bats, or invertebrates that seasonally migrate between the Nearctic and Neotropics.

non consumptive, wildlife-oriented recreation: wildlife observation and photography and environmental education and interpretation (cf. “wildlife-oriented recreation”).

non-native species: See “exotic species”.

non point source pollution: a diffuse form of water quality degradation in which wastes are not released at one specific, identifiable point but from a number of points that are spread out and difficult to identify and control (Eckhardt 1998).

nonforested wetlands: wetlands dominated by shrubs or emergent vegetation.

nonpoint source: a diffuse form of water quality degradation produced by erosion of land that causes sedimentation of streams, eutrophication from nutrients and pesticides used in agricultural and silvicultural practices, and acid rain resulting from burning fuels that contain sulfur (Lotspeich and Platts 1982).

Notice of Intent: (NOI) an announcement we publish in the Federal Register that we will prepare and review an environmental impact statement [40 CFR 1508.22].

objective: cf. “unit objective”.

obligate species: a species that must have access to a particular habitat type to persist.

occurrence site: a discrete area where a population of a rare species lives or a rare plant community type grows.

old fields: areas formerly cultivated or grazed, where woody vegetation has begun to invade. [N.b. If left undisturbed, old fields will eventually succeed into forest. Many occur at sites marginally suitable for crops or pasture. They vary markedly in the Northeast, depending on soil and land use and management history.]

outdoor education project: any cooperative venture that combines financial and staff resources to develop outdoor education activities like labs, field trips, surveys, monitoring, or sampling.

outdoor education: educational activities that take place in an outdoor setting.

outwash plain: the plain formed by deposits from a stream or river originating from the melting of glacial ice that are distributed over a considerable area; generally coarser, heavier material is deposited nearer the ice and finer material carried further away.

palustrine wetlands: “The Palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0%.” Cowardin et al. 1979.

Partners for Wildlife Program: a voluntary, cooperative habitat restoration program among the Service, other government agencies, public and private organizations, and private landowners to improve and protect fish and wildlife habitat on private land while leaving it in private ownership.

partnership: a contract or agreement among two or more individuals, groups of individuals, organizations, or agencies, in which each agrees to furnish a part of the capital or some service in kind (e.g., labor) for a mutually beneficial enterprise.

payment in lieu of taxes: cf. Revenue Sharing Act of 1935, Chapter One, Legal Context.

pelagic: living in the water column, well above the bottom and some distance from land, as do oceanic fish or birds (contrast *demersal* and *benthic*).

phytoplankton: the ensemble of tiny plants that float or drift in marine waters. These tiny plants can produce such dense blooms in the Gulf of Maine that they turn our waters green. Phytoplankton are the base of the food chain on which ultimately most shellfish, fish, birds, and marine mammals depend (the exceptions being those that feed mostly on detritus from benthic plants). See also *Zooplankton*.

point source: a source of pollution that involves discharge of waste from an identifiable point, such as a smokestack or sewage-treatment plant (Eckhardt 1998).

population monitoring: assessing the characteristics of populations to ascertain their status and establish trends on their abundance, condition, distribution, or other characteristics.

prescribed fire: the application of fire to wildland fuels, either by natural or intentional ignition, to achieve identified land use objectives [FWS Manual 621 FW 1.7].

priority general public use: a compatible wildlife-dependent recreational use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation.

private land: land owned by a private individual or group or non-government organization.

private landowner: cf. “private land”.

private organization: any non-government organization.

proposed wilderness: an area of the Refuge System that the Secretary of the Interior has recommended to the President for inclusion in the National Wilderness Preservation System.

protection: mechanisms like fee title acquisition, conservation easements, or binding agreements with landowners that ensure land use and land management practices will remain compatible with maintaining species populations at a site (cf. “long-term”).

public: individuals, organizations, and non-government groups; officials of Federal, State, and local government agencies; Native American tribes, and foreign nations includes anyone outside the core planning team, those who may or may not have indicated an interest in the issues, and those who do or do not realize that our decisions may affect them.

public involvement: offering an opportunity to interested individuals and organizations whom our actions or policies may affect to become informed; soliciting their opinions. We thoroughly study public input, and give it thoughtful consideration in shaping decisions about managing refuges.

public involvement plan: long-term guidance for involving the public in the comprehensive planning process.

public land: land owned by the local, State, or Federal Government.

rare species: species identified for special management emphasis because of their uncommon occurrence within a watershed.

rare community types: plant community types classified as rare by any State program; includes exemplary community types.

recharge: refers to water entering an underground aquifer through faults, fractures, or direct absorption.

recommended wilderness: areas studied and found suitable for wilderness designation by both the Director (FWS) and Secretary (DOI), and recommended by the President to Congress for inclusion in the National Wilderness System [FWS Manual 610 FW 1.5 (draft)].

Record of Decision: (ROD) a concise public record of a decision by a Federal agency pursuant to NEPA. [N.b. A ROD includes (1) the decision; (2) all the alternatives considered; (3) the environmentally preferable alternative; (4) a summary of monitoring and enforcement, where applicable, for any mitigation; and (5) whether all practical means have been adopted to avoid or minimize environmental harm from the alternative selected (or if not, why not).]

refuge goals: “descriptive, open-ended, and often broad statements of desired future conditions that convey a purpose but do not define measurable units,” Writing Refuge Management Goals and Objectives: A Handbook.

refuge purposes: “The terms ‘purposes of the refuge’ and ‘purposes of each refuge’ mean the purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge subunit” National Wildlife Refuge System Improvement Act of 1997.

refuge lands: lands in which the Service holds full interest in fee title or partial interest like an easement.

relatively intact: the conservation status category indicating the least possible disruption of ecosystem processes. Natural communities are largely intact, with species and ecosystem processes occurring within their natural ranges of variation.

- relatively stable:** the conservation status category between *vulnerable* and *relatively intact* in which extensive areas of intact habitat remain, but local species declines and disruptions of ecological processes have occurred.
- restoration:** management of a disturbed or degraded habitat that results in the recovery of its original state. [e.g. restoration may involve planting native grasses and forbs, removing shrubs, prescribed burning, or reestablishing habitat for native plants and animals on degraded grassland.]
- restoration ecology:** the process of using ecological principles and experience to return a degraded ecological system to its former or original state.
- riparian:** referring to the interface between freshwater habitats and the terrestrial landscape.
- riparian agricultural land:** agricultural land along a stream or river. [N.b. We normally base our CCP analysis of impacts on an estimated 50' of land on both banks, unless otherwise stated.]
- riparian forested land:** forested land along a stream or river.
- riparian habitat:** habitat along the banks of a stream or river [cf. note above].
- riverine:** within the active channel of a river or stream.
- riverine wetlands:** generally, all the wetlands and deepwater habitats occurring within a freshwater river channel not dominated by trees, shrubs, or persistent emergents.
- runoff:** water from rain, melted snow, or agricultural or landscape irrigation that flows over a land surface into a water body (cf. "urban runoff").
- sandplain grassland:** dry grassland that has resisted succession due to fire, wind, grazing, mowing, or salt spray. [N.b. Characterized by thin, acidic, nutrient-poor soils over deep sand deposits, sandplains primarily occur on the coast and off-coast islands, or inland, where glaciers or rivers have deposited sands.]
- scale:** the magnitude of a region or process. Refers to both spatial size, for example, a (relatively small-scale) patch or a (relatively large-scale) landscape; and a temporal rate, for example, (relatively rapid) ecological succession or (relatively slow) evolutionary speciation.
- Service presence:** Service programs and facilities that it directs or shares with other organizations; public awareness of the Service as a sole or cooperative provider of programs and facilities.
- shrublands:** habitats dominated by various species of shrubs, often with many grasses and forbs.
- site improvement:** any activity that changes the condition of an existing site to better interpret events, places, or things related to a refuge. [e.g. improving safety and access, replacing non-native with native plants, refurbishing footbridges and trailways, and renovating or expanding exhibits.]
- source population:** a population in a high-quality habitat where the birth rate greatly exceeds the death rate, and the excess individuals emigrate.
- special focus area:** an area of high biological value. [N.b. We normally direct most of our resources to SFA's that were delineated because of (1) the presence of Federal listed endangered and threatened species, species at risk (formerly, "candidate species"), rare species, concentrations of migrating or wintering waterfowl, or shorebird stopover habitat; (2) their importance as migrant landbird stopover or breeding habitat; (3) the presence of unique or rare communities; or (4) the presence of important fish habitat.]
- special habitats:** wetlands, vernal pools, riparian habitat, and unfragmented rivers, forests and grasslands. [N.b. Many rare species depend on specialized habitats that, in many cases, are being lost within a watershed.]

- special riparian project:** restoring, protecting, or enhancing an aquatic environment in a discrete riparian corridor within a special focus area.
- species assemblage:** the combination of particular species that occur together in a specific location and have a reasonable opportunity to interact with one another.
- species at risk:** a species being considered for Federal listing as threatened or endangered (formerly, a “candidate species”).
- species of concern:** species not Federal-listed as threatened or endangered, but about which we or our partners are concerned.
- species diversity:** usually synonymous with “species richness,” but may also include the proportional distribution of species.
- species richness:** a simple measure of species diversity calculated as the total number of species in a habitat or community (Fiedler and Jain 1992).
- State agencies:** natural resource agencies of State governments.
- State land:** State-owned public land.
- State-listed species:** cf. “Federal-listed species”.
- step-down management plan:** a plan for dealing with specific refuge management subjects, strategies, and schedules, e.g., cropland, wilderness, and fire [FWS Manual 602 FW 1.4].
- stopover habitat:** habitat where birds rest and feed during migration.
- strategy:** a specific action, tool, technique, or combination of actions, tools, and techniques for meeting unit objectives.
- succession:** the natural, sequential change of species composition of a community in a given area.
- surface water:** all waters whose surface is naturally exposed to the atmosphere, or wells or other collectors directly influenced by surface water.
- sustainable development:** the attempts to meet economic objectives in ways that do not degrade the underlying environmental support system. Note that there is considerable debate over the meaning of this term and we define it as “human activities conducted in a manner that respects the intrinsic value of the natural world, the role of the natural world in human well-being, and the need for humans to live on the income from nature’s capital rather than the capital itself.”
- telecommunications:** communicating via electronic technology.
- telecommunications project:** any cooperative venture that combines financial and staff resources to develop and use computer based applications for exchanging information about a watershed with others.
- terrestrial:** living on land.
- threatened species:** a Federal-listed, protected species that is likely to become an endangered species in all or a significant portion of its range.
- tiering:** incorporating by reference the general discussions of broad topics in environmental impact statements into narrower statements of environmental analysis by focusing on specific issues [40 CFR 1508.28].
- tributary:** a stream or river that flows into a larger stream, river, or lake, feeding it water.

- trust resource:** a resource that the Government holds in trust for the people through law or administrative act. [N.b. A Federal trust resource is one for which responsibility is given wholly or in part to the Federal Government by law or administrative act. Generally, Federal trust resources are nationally or internationally important no matter where they occur, like endangered species or migratory birds and fish that regularly move across state lines. They also include cultural resources protected by Federal historic preservation laws, and nationally important or threatened habitats, notably wetlands, navigable waters, and public lands like state parks and national wildlife refuges.]
- turbidity:** refers to the extent to which light penetrates a body of water. Turbid waters are those that do not generally support net growth of photo-synthetic organisms.
- unfragmented habitat:** large, unbroken blocks of a particular type of habitat.
- unit objective:** desired conditions that must be accomplished to achieve a desired outcome. [N.b. Objectives are the basis for determining management strategies, monitoring refuge accomplishments, and measuring their success. Objectives should be attainable, time-specific, and stated quantitatively or qualitatively (FWS Manual 602 FW 1.4).]
- upland:** dry ground (i.e., other than wetlands).
- upland meadow or pasture:** upland pastures are areas maintained in grass for livestock grazing; upland meadows are hay production areas. [N.b. Meadows may occur naturally in tidal marshes and inland flooded river valleys or, more frequently, at upland sites where vegetation has been cleared and grasses planted. Eventually, meadows will revert to old fields and forest if they are not mowed, grazed, or burned. Grasses in both managed meadows and pastures usually are similar, but pasture herbs often differ because of selective grazing.]
- upwelling:** a process whereby nutrient-rich waters from the ocean depths rise to the surface; it commonly occurs along continental coastlines.
- urban runoff:** water from rain, melted snow, or landscape irrigation flowing from city streets and domestic or commercial properties that may carry pollutants into a sewer system or water body.
- vernal pool:** depressions holding water for a temporary period in the spring, and in which various amphibians lay eggs.
- vision statement:** a concise statement of what the unit could achieve in the next 10 to 15 years.
- warm-season grass:** native prairie grass that grows the most during summer, when cool-season grasses are dormant.
- watchable wildlife:** all wildlife is watchable. [N.b. A watchable wildlife program is one that helps maintain viable populations of all native fish and wildlife species by building an active, well informed constituency for conservation. Watchable wildlife programs are tools for meeting wildlife conservation goals while at the same time fulfilling public demand for wildlife-dependent recreational activities (other than sport hunting, sport fishing, or trapping).]
- watershed:** the geographic area within which water drains into a particular river, stream, or body of water. A watershed includes both the land and the body of water into which the land drains.
- watershedwide education networks:** systems for sharing educational information, like curriculum development projects, student activities, and ongoing data gathering; a combination of telecommunications and real-life exchanges of information.
- well-protected:** in CCP analysis, a rare species or community type is considered well protected if 75 percent or more of its occurrence sites are on dedicated open space.

wet meadows: meadows located in moist, low-lying areas, often dominated by large colonies of reeds or grasses. [N.b. Often they are created by collapsed beaver dams and exposed pond bottoms. Saltmarsh meadows are subject to daily coastal tides.]

wetlands: lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. These areas are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted to life in saturated soil conditions.

“Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water” Cowardin et al 1979.

wilderness study areas: lands and waters identified by inventory as meeting the definition of wilderness and being evaluated for a recommendation they be included in the Wilderness System (cf. “recommended wilderness”). [N.b. A wilderness study area must meet these criteria: (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 5,000 contiguous, roadless acres, or sufficient size to make practicable its preservation and use in an unimpaired condition (FWS Manual 610 FW 1.5 (draft)).]

wilderness: cf. “designated wilderness”.

wildfire: a free-burning fire requiring a suppression response; all fire other than prescribed fire that occurs on wildlands [FWS Manual 621 FW 1.7].

wildland fire: every wildland fire is either a wildfire or a prescribed fire [FWS Manual 621 FW 1.3].

wildlife-dependent recreational use: a use of a national wildlife refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation (National Wildlife Refuge System Administration Act of 1966).

wildlife management: manipulating wildlife populations, either directly by regulating the numbers, ages, and sex ratios harvested, or indirectly by providing favorable habitat conditions and alleviating limiting factors.

wildlife-oriented recreation: recreational activities in which wildlife is the focus of the experience [“The terms ‘wildlife-dependent recreation’ and ‘wildlife-dependent recreational use’ mean a use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation.” National Wildlife Refuge System Improvement Act of 1997].

working landscape: the rural landscape created and used by traditional laborers. [N.b. Agriculture, forestry, and fishing all contribute to the working landscape of a watershed (e.g., keeping fields open by mowing or by grazing livestock).]