

Glossary

Words common to many comprehensive conservation plans

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: <ol style="list-style-type: none">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; or3. the use has been determined to be appropriate as specified in section 1.11
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 reseeding 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 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 500–600 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
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 offices 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”).]
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	<p>an approach to making decisions based on the characteristics of the ecosystem in which a person or thing belongs</p> <p>[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.]</p>
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 <i>not</i> 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.”—Bleiker
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

	<p>multimedia materials [E.g., kiosks that offer printed materials and audiovisuals, signs, and trail heads.]</p>
interpretive materials	<p>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.]</p>
interpretive materials projects	<p>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</p>
introduced invasive species	<p>non-native species that have been introduced into an area and, because of their aggressive growth and lack of natural predators, displace native species</p>
invasive species	<p>an alien species whose introduction causes or is likely to cause economic or environmental harm or harm to human health</p>
invertebrate	<p>any animal lacking a backbone or bony segment that encloses the central nerve cord</p>
issue	<p>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).]</p>
kettle hole	<p>a generally circular hollow or depression in an <i>outwash plain</i> or <i>moraine</i>, believed to have formed where a large block of subsurface ice has melted</p>
keystone species	<p>species that are critically important for maintaining ecological processes or the diversity of their ecosystems</p>
lacustrine wetlands	<p>"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</p>
Land Protection Plan (LPP)	<p>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.</p>
land trusts	<p>organizations dedicated to conserving land by purchase, donation, or conservation easement from landowners</p>
landform	<p>the physical shape of the land reflecting geologic structure and</p>

	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 <i>demersal</i> and <i>benthic</i>)
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 <i>Zooplankton</i> .)
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. The term 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: <ul style="list-style-type: none"> • the decision; • all the alternatives considered; • the environmentally preferable alternative; • a summary of monitoring and enforcement, where applicable, for any mitigation; and, • 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 <i>vulnerable</i> and <i>relatively intact</i> 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 or facilities that it directs or shares with other organizations, giving rise to 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	<p>an area of high biological value</p> <p>[N.b. We normally direct most of our resources to SFA's that were delineated because of:</p> <ol style="list-style-type: none"> 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	<p>wetlands, vernal pools, riparian habitat, and unfragmented rivers, forests and grasslands</p> <p>[N.b. Many rare species depend on specialized habitats that, in many cases, are being lost within a watershed.]</p>
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	a plan for dealing with specific refuge management subjects,

plan	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...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 photosynthetic 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).]

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Bibliography

- Allen, A. W. 1982. Habitat suitability index models: Fox Squirrel. FWS/OBS-82/10.18. U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C. 11 p.
- Baker, L. B. and Langdon, O. G. 1990. *Pinus taeda* L. Loblolly Pine. In *Silvics of North America* Vol. 2, Agricultural Handbook 654. U.S. Department of Agriculture, Forest Service, Washington, D.C.
http://willow.ncfes.umn.edu/silvics_manual/Volume_1/pinus/taeda.htm 877 p.
- Bendel, P. R. and G. D. Therres. 1994. Movements, site fidelity, and survival of Delmarva Fox Squirrels following translocation. *American Midland Naturalist* 132:227–233. (*in: The Effects of Hazard Reduction Burns in Mid-Atlantic Coastal Plain Forests: Draft Proposal*).
- Blossey and McCauley 2000
- Boddicker, M.L. 1981. Profiles of American trappers and trapping. *Worldwide Furbearer Conference Proceedings* 3:1919–1949.
- Bogges, E.K., G.R. Batcheller, R.G. Linscombe, J.W. Greer, M. Novak, S.B. Linhart, D.W. Erickson, A.W. Todd, D.C. Juve, and D.A. Wade. 1990. Traps, trapping, and furbearer management. *Wildlife Society Technical Review* 90–1, The Wildlife Society, Bethesda, Maryland.
- Bratkovich, S., Burban, L., Katovich, S., Locey, C., Pokorny, J. and Wiest, R. 1993. Flooding and its Effects on Trees. Information Packet. USDA Forest Service, Northeast Area State and Private Forestry, St. Paul, MN. <http://willow.ncfes.umn.edu/flood/cover.htm>.
- Brown, T.L., D.J. Decker, and J.W. Enck. 1995. Preliminary insights about the sociocultural importance of hunting and trapping. Human Dimension Research Unit Series Number 95-2, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York.
- Carey, Jennifer H. 1992. *Quercus phellos*. In: Fischer, William C., compiler. *The Fire Effects Information System* [Database]. Missoula, MT: USDA Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present.
<http://www.fs.fed.us/database/feis/plants/tree/quephe/>
- Chapman, J. A. and G. A. Feldhamer, eds. 1982. *Wild Mammals of North America*. Baltimore, MD: The Johns Hopkins University Press. 1147 pp. (*in: The Effects of Hazard Reduction Burns in Mid-Atlantic Coastal Plain Forests: Draft Proposal*).
- Coladoanto, Milo. 1991. *in: Fischer, William C., compiler. The Fire Effects Information System*

Bibliography

- [Database]. Missoula, MT: US DA Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present. <http://www.fs.fed.us/database/feis/plants/tree/ileopa/>
- Daigle, J.J., R.M. Muth, R.R. Zwick, and R.J. Glass. 1998. Sociocultural dimensions of trapping: a factor analytical study of trappers in six northeastern states. *Wildlife Society Bulletin* 26:614–625.
- Dickinson, N.R. 1983. An example of the effect of under harvesting on a deer population. *N.Y. Fish and Game Journal* 30 (1983):231–232.
- Dueser, R. D., Dooley, J. L., Jr. and Taylor, G. J. 1988. Habitat structure, forest composition and landscape dimensions as components of habitat suitability for the Delmarva fox squirrel. *In: Management of amphibians, reptiles, and small mammals in North America: Proceedings of the symposium; 1998 July 19–21; Flagstaff, AZ. Gen. Tech. Rep. RM-166. Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and range Experiment Station: 414–421. [21086].*
- Eldridge, J. 1992. Management of habitat for breeding and migrating shorebirds in the midwest. *Waterfowl Management Handbook, Leaflet 13.2.14, Washington, D.C.*
- Eldridge, J. 1990. Aquatic invertebrate importance for waterfowl production. *USFWS, Waterfowl Management Handbook, Leaflet 13.3.3, Washington, D.C.*
- Fales, J. H. 1984. Status of Maryland's less common butterflies. Pages 273–280 *in* A.W. Norden, D. C. Forester, and G. H. Fenwick (eds.). *Threatened and endangered plants and animals of Maryland. Maryland Heritage Program, Special Publ. 84-I, Department of Natural Resources, Annapolis, MD. 475 pp.*
- Ford, M. A., D. R. Cahoon, and J. C. Lynch. 1999. Restoring marsh elevation in a rapidly subsiding salt marsh by thin-layer deposition of dredged material. *Ecol. Engineering* 12:189–205.
- Frederickson, L.H. and F.A. Reid. 1988. Invertebrate response to wetland management. *USFWS, Waterfowl Management Handbook, Leaflet 13.3.1, Washington, D.C.*
- Frederickson, L.H. and T.S. Taylor. 1982. Management of seasonally flooded impoundments for wildlife; *USDI Fish and Wildlife Service Resource Publication 148, Washington, D.C. 1982.*
- Frederickson, L.H. and F.A. Reid. 1988. Waterfowl use of wetland complexes. *USFWS, Waterfowl Management Handbook, Leaflet 13.2.1, Washington, D.C.*
- Frederickson, L.H. and F.A. Reid. 1988. Considerations of community characteristics for sampling vegetation. *Fish and Wildlife Leaflet 13.4.1. Waterfowl Management Handbook. Washington, D.C.*

- Frederickson, L.H. and F.A. Reid. 1988. Nutritional values of waterfowl foods. USFWS, Waterfowl Management Handbook, Leaflet 13.1.1, Washington, D.C.
- Frederickson, L.H. and F.A. Reid. 1987. Waterfowl management handbook. USFWS, Washington, D.C.
- Fredrickson, L.H. 1991. Strategies for water level manipulations in moist soil systems. USFWS, Waterfowl Management Handbook, Leaflet 14.4.6, Washington, D.C.
- Givens, L.S., M.C. Nelson, and V. Ekedahl. 1964. Farming for waterfowl. *Waterfowl Tomorrow*. pp. 599–610.
- Givens, L.S. and T.Z. Atkeson. 1959. Farming for waterfowl in the southeastern United States. USFWS Publication.
- Glass, R.J., T.A. More, and J.J. DiStefano. 1991. Vermont trappers: characteristics, motivations, and attitudes. *Transactions of the Northeast Section of The Wildlife Society* 48:134–143.
- Glass, R.J., T.A. More, and R.R. Zwick. 1994. Human relationships with wildlife in Vermont. *Proceedings of the Northeast Recreation Research Symposium*, Saratoga, New York.
- Glass, R.J., T.A. More, R.R. Zwick. 1995. Public acceptance for hunting, fishing, and trapping in Vermont. *Northeast Wildlife* 52:77–92.
- Gottschalk, K.W. 1990. Gypsy moth impacts on mast production. Pages 42–50 in C. E. McGee (ed.). *Proceedings of the Workshop: Southern Appalachian Mast Management*, 14–16 Aug 1989, University of Tennessee, Knoxville.
- Green, W.E., L.G. MacNamara, and F.M. Uhler. 1964. Water on and off. *Waterfowl Tomorrow*, USFWS, Washington, D.C. 770 pp.
- Helms, J.A. 1998. *The Dictionary of Forestry*. The Society of American Foresters. www.safnet.org. 210 p.
- Hindman, L. 2000. Feral mute swans: Population status, impacts on native wildlife and people, and management needs in Maryland. Draft rept, 15 Dec 2000. MD Dept. Natural Resources, Wye Mills.
- International Association of Fish and Wildlife Agencies. 1998. Best management practices for trapping furbearers in the United States. International Association of Fish and Wildlife Agencies, Washington, D.C.
- Jastrzemski, P. 2000. FIDs. Maryland Forestry Association. <http://www.mdforests.org/mfa/fids.htm>. 1p.
- Jastrzemski, P. 2000. *Silvics and Silviculture, the Science of Forestry*. Maryland Forestry

Bibliography

- Association. <http://www.mdforests.org/mfa/silvics.htm>. 4p.
- Jastrzembski, P. 2000. Thinning—A Silvicultural Tool. Maryland Forestry Association. <http://www.mdforests.org/mfa/thinning.htm>. 1p.
- Jastrzembski, P. 2000. Benefits of Cutting Trees to Forest Health . Maryland Forestry Association. <http://www.mdforests.org/mfa/ee3.htm>. 1p.
- Johnson, P. S. 1994. How to Manage Oak Forests for Acorn Production. Technical Brief, from the Silviculture and Ecology Upland Central Hardwood Forest Research Unit. TB-NC-1. USDA Forest Service, North Central Forest Experiment Station. 5p.
- Jones, W. L. 1995. The herbicide glyphosate for Phragmites, purple loosestrife, and cattail control. Pages K56–K70 in W.R. Whitman, T. Strange, L. Widjeskog, R. Whittemore, P. Kehoe and L. Roberts (eds.). *Waterfowl Habitat Restoration, Enhancement and Management in the Atlantic Flyway*. Atlantic Flyway Council and DE Div. Fish and Wildlife, Dover, DE. 1114 pp.
- Kearney, M. S., R. E. Grace., and J. C. Stevenson. 1988. Marsh loss in Nanticoke estuary, the Chesapeake Bay. *Geographical Review* 78:205–220.
- Kearney, M. S., and J. C. Stevenson. 1991. Island land loss and marsh vertical accretion rate evidence for historical sea-level changes in the Chesapeake Bay. *J. Coastal Research* 7:403–415.
- Kearny, M. 2000. Personal communication: *in* electronic mail to John Morton on June 13, 2000.
- Keller, C. M. E., Robbins, C. S. and Hatfield, J. S. 1993. Avian Communities in Riparian Forests of Different Widths in Maryland and Delaware. *Wetlands*. Vol. 13. No. 2. Special Issue. June 1993, pp. 137–144.
- Kellert, S.R. 1980. Trappers and trapping in American Society. *Proceedings of the Worldwide Furbearer Conference* 3:1971–2003.
- Kerlinger, P., and D. S. Wiedner. 1990. Habitat use and vocal behavior of black rails in South Jersey. Unpublished draft report. NJ Department of Environmental Protection, Endangered and Nongame Species Program. 18 pp.
- Klein, M.L. 1989. Effects of high levels of human visitation on foraging water birds at J.N. “Ding” Darling National Wildlife Refuge. Final Research Report. Florida Coop. Fish and Wildlife Research Unit. Work Order No. 42. 103 pp.
- Klein, M.L. 1989. Effects of high levels of human visitation on foraging water birds at J.N. “Ding” Darling National Wildlife Refuge Blackwater NWR. Final Research Report. Florida Coop. Fish and Wildlife Research Unit. Work Order No. 42. 103 pp.

- Lamson, N. I., Smith H. C., Perkey, A. W. and Wilkins, B. L. How To Release Crop Trees In Precommercial Hardwood Stands. USDA Forest Service Northeastern Forest Experiment Station. NE-INF-90-88, State and Private Forestry, Morgantown, WV. 7 p.
<http://www.fs.fed.us/na/morgantown/frm/perkey/howto/tree.htm>
- Laughland, Andrew, and Caudill, James. 1997. Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation. Division of Economics, USFWS, Washington, D.C. 118 pp.
- Laughland, Andrew, and Caudill, James. 1997. Banking on Nature: The Economic Benefits to Local Communities of Blackwater National Wildlife Refuge Visitation. Division of Economics, USFWS, Washington, D.C. 118 pp.
- Leatherman, S. P., Chalfont, R., Pendleton, E. C., McCandless, T. L. and Funderburk, S. 1995. Vanishing Lands, "Sea Level, Society and the Chesapeake Bay." USFWS. 47 p.
- Marcus, J.F., W.E. Palmer, and P.T. Bromley. 2000. The effects of farm field borders on overwintering sparrow densities. *The Wilson Bulletin*. 112(4). pp. 517–523.
- Maryland DNR April 1989 to April 1995. Maryland DNR Wetlands. Information for this element varies for each 3.75' quadrangle.
- Maryland DNR 1999. Forest Health Report, Gypsy Moth.
<http://www.dnr.state.md.us/forests/healthreport/moth.html>. 2 p.
- Maryland Department of Natural Resources. Furbearer management in Maryland, management tools and their application. 2000. Special Report, Maryland Department of Natural Resources. Annapolis, Maryland.
- McCormick, J., and H. A. Somes, Jr. 1982. The coastal wetlands of Maryland. Prepared for MD Dept. Nat. Resources, Coastal Zone Management Program. Prepared by Jack McCormick and Associates, Inc., Chevy Chase, MD. 243 pp.
- McFarland, L.Z., and H. George. 1966. Preference of selected grains by geese. *J. Wildl. Manage.* 30:9–13.
- McManus, M., Schneeberger, N., Reardon, R. and Mason, G. 2000. Gypsy Moth, Forest Insect and Disease Leaflet 162. USDA Forest Service. <http://willow.ncfes.umn.edu/fidl-gypsy/gypsy.htm>. 11 p.
- McManus 1999
- Meanley, B. 1978. Blackwater. Tidewater Publ., Cambridge, MD. 148 pp.
- Metzgar 1973.

Bibliography

- Miller, K.E. 1998. Maryland Forest facts. <http://www.mdforests.org/mfa/ffacts.htm>. 2 p.
- Miller, J.C. 1990. Field assessment of the effects of a microbial pest control agent on non-target Lepidoptera. *American Entomologist* 36:135–139.
- Moncrief, N. D., I. W. Ailes, W. Giese, J. Jacobs, K. M. Reynolds, K. Terwillinger, G. D. Therres, and M. A. Steele. 1993. Delmarva Fox Squirrel (*Sciurus niger cinereus*) Recovery Plan, Second Revision. USFWS, Hadley, MA. 104 p.
- Muth, R. M., R.R. Zwick, J.J. Daigle, R.J. Glass, and S.A. Jonker. 1996. The sociocultural and economic value of furbearer resources: a study of trapping in six northeastern states. Final Technical Report. Division of Federal Aid, Northeast Region. USFWS, Hadley, MA.
- Muth, R. M., J.J. Daigle, R.R. Zwick, R.J. and Glass. 1996. Trappers and trapping in advanced industrial society: economic and sociocultural values of furbearer utilization in the northeastern United States. *Sociological Spectrum* 16:421–436.
- National Wildlife Federation. 1979. Trapping and conservation. National Wildlife Federation. Washington, D.C.
- NOAA in partnership with NASA, NC State Univ., Univ. of MD and USFWS. ?. Ecosystem Health and Land Loss in the Chesapeake Bay.
- Organ, J.F., T.A. Decker, J. DiStefano, K. Elowe, P. Rego, and P.G. Mirick. 1996. Trapping and furbearer management, perspectives from the Northeast. Northeast Furbearer Resources Technical Committee, Northeast Section of The Wildlife Society, Division of Federal Aid, Northeast Region USFWS, Hadley, MA.
- Organ, J. F., R.F. Gotie, T.A. Decker, and G. R. Batcheller. 1998. A case study in the sustained use of wildlife: the management of beaver in the northeastern United States. Pages 125–139 *in* van der Linde, H.A. , and M.H. Danskin, editors. Enhancing sustainability – resources for our future, International Union for the Conservation of Nature and Natural Resources, Gland, Switzerland.
- Payne, N.F. 1980. Furbearer management and trapping. *Wildlife Society Bulletin* 8:345–348.
- Pendleton and Stevenson 1983.
- Reese, J. G. 1996. Mute swan. Pages 70–71 *in* Atlas of the breeding birds of Maryland and the District of Columbia. C. Robbins and Erik Blohm, eds., Pittsburgh Press.
- Reinecke, K.J., R.M. Kaminski, D.J. Moorhead, J.D. Hodges, and J.R. Nassar. 1989. Mississippi alluvial valley. Pages 203–247 *in* L. M. Smith, R.L. Pederson, and R.M. Kaminski, eds. Habitat management for migrating and wintering waterfowl in North America. Texas Tech University Press. Lubbock, Texas

- Ringelman, J.K. 1990. Managing agricultural foods for waterfowl. Fish and Wildlife Leaflet 13.4.3. Waterfowl Management Handbook. Washington, D.C.
- Ringelman, J.K. 1990. Habitat management for molting waterfowl. Fish and Wildlife Leaflet 13.4.4. Waterfowl Management Handbook. Washington, D.C.
- Ringelman, J.K., W.R. Eddleman, and H.W. Miller. 1989. High plains reservoirs and sloughs. Pages 311–340 in L. M. Smith, R.L. Pederson, and R.M. Kaminski, eds. Habitat management for migrating and wintering waterfowl in North America. Texas Tech University Press. Lubbock.
- Rizzo 1995.
- Robbins, C. S., Dawson, D. K. and Dowell, B. A. 1989. Habitat Area Requirements of Breeding Forest Birds of the Mid Atlantic States. Wildlife Monographs, 103, 1–34.
- Robbins, C. H. 1984. Threatened and breeding birds of Maryland. Pages 363–389 in A. W. Norden, D. C. Forester, and G. H. Fenwick (eds.). Threatened and endangered plants and animals of Maryland. Maryland Heritage Program, Special Publ. 84–I, MD Dept. Natural Resources, Annapolis. 475 pp.
- Rochelle, J. A. 1998. Forest Fragmentation, Wildlife and Management Implications. Conference Summary. November 18–19. Portland OR. 17 p.
- Rogers, Robert. 1990. Quercus Alba, white oak. in Silvics of North America Vol.1, Hardwoods. Agricultural Handbook 654. USDA Forest Service, Washington, D.C.
http://willow.ncfes.umn.edu/silvics_manual/Volume_1/pinus/taeda.htm
- Sample, B. E., L. Butler, C. Zivkovich, R. C. Whitmore, and R. C. Reardon. 1996. Effects of *Bacillus thuringiensis* Berliner var. *Kurstaki* and defoliation by gypsy moth [*Lymantria dispar* (L.) (*Lepidoptera:Lymnatriidae*)] on native arthropods in West Virginia. Canadian Entomologist 128:573–592.
- Semel, B., P. W. Sherman, and S. M. Byers. 1990. Nest boxes and brood parasitism in wood ducks: a management dilemma. Pages 163–170 in L. H. Fredrickson, et al. eds. Proc. 1988 North Am. Wood Duck Symp., St. Louis, MO.
- Semel, B., and P. W. Sherman. 1995. Alternative placement strategies for wood duck nest boxes. Wildlife Society Bulletin 23:463–471.
- Siemer, W.F., and D.J. Decker. 1991. Human tolerance of wildlife damage: synthesis of research and management implications. Human Dimensions Research Unit Publication 91–7, Department of Natural Resources, New York State College of Agriculture and Life Science, Cornell University, Ithaca, New York.
- Snyder, S. A. 1994. Southern mixed forest. in: Fischer, William C., compiler. The Fire Effects

Bibliography

- Information System [Database]. Missoula, MT: USDA Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present.
<http://www.fs.fed.us/database/feis/kuchlers/k112/>
- Snyder, S. A. 1992. *Quercus michauxii*. *in*: Fischer, William C., compiler. The Fire Effects Information System [Database]. Missoula, MT: USDA Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present.
<http://www.fs.fed.us/database/feis/plants/tree/quemic/>
- Society of American Foresters. 2000. The Role of “Salvage” and “Sanitation” Harvesting in the Restoration and Maintenance of Healthy Forests.
<http://www.safnet.org/policy/psst/sansal.html>
- Society of American Foresters. 1996. Forest Fragmentation in the Chesapeake Bay Watershed. Ecological, Economic, Policy and Law Impacts. A Processional Roundtable Series. Jan. 12–16, 1993. Bethesda Maryland.
- Society of American Foresters. 1994. Silviculture terminology. Silviculture Working Group. eds. D.L. Adams, D.L. Loftis, R.S. Seymour. Bethesda, MD.
- Southwick Associates. 1999. Bears in the backyard, deer in the driveway: The importance of hunting and trapping in helping wildlife professional manage our treasured wildlife resources. International Association of Fish and Wildlife Agencies, Washington, D.C.
- Stevenson, C., J. Rooth, M. Kearney, and K. Sundberg. 2000 The health and long-term stability of natural and restored marshes in the Chesapeake Bay. Pages 709–735 *in* M.P. Weinstein and D. Kreeger (eds.). Concepts and controversies in tidal marsh ecology. Kluwer Academics, The Netherlands.
- Stevenson, J., M. S. Kearney, and E. C. Pendleton. 1985. Sedimentation and erosion of a the Chesapeake Bay brackish marsh system. *Mar. Geol.* 67:213–235.
- Sullivan, Janet. 1995. Oak-hickory forest. *in*: Simmerman, D. G., compiler. The Fire Effects Information System [Database]. Missoula, MT: USDA Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present.
<http://www.fs.fed.us/database/feis/kuchlers/k100/>
- Tesky, Julie L. 1993. *Sciurus niger*. *in*: Fischer, Williams C., compiler. The Fire Effects Information System [Database]. Missoula, MT: USDA Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present.
<http://www.fs.fed.us/database/feis/animals/mammal/scni>

- Thatcher, R.C. and Barry, P.J. 2000. Southern Pine Beetle, Forest Insect and Disease Leaflet 49. USDA Forest Service. http://willow.ncfes.umn.edu/fidl-spb/so_pine.htm 11 p.
- Tirmenstein, D. A. 1991. *Acer rubrum*. in: Fischer, William C., compiler. The Fire Effects Information System [Database]. Missoula, MT: USDA Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Magnetic tape reels; 9 track; 1600 bpi, ASCII with Common LISP present. <http://www.fs.fed.us/database/feis/plants/tree/acerub/>
- Todd, A.W., and E.K. Bogess. 1987. Characteristics, activities, lifestyles, and attitudes of trappers in North America. Pages 59–76 in J. Novak, A. Baker, M.E. Obbard, and B. Malloch, editors, Wild furbearer management and conservation in North America. Ontario Ministry of Natural Resources, Ottawa, Canada, and Toronto and Ontario Trappers Associations, North Bay Ontario, Canada.
- Trusso, S. 1999. Best management practices for trapping furbearers in the United States. International Association of Fish and Wildlife Agencies, Columbia, Missouri.
- USDA Forest Service, Northeast Area. 1996. Conserving the Forests of the Chesapeake: The Status, Trends, and Importance of Forests for the Bay's Sustainable Future. NA-TP-03-96.
- USDA, NRCS. 1998. Soil Survey of Dorchester County Maryland.
- USFWS 1984. Blackwater National Wildlife Refuge Forest Management Plan.
- Van Lear, D.H. and J.M. Watt. 1992. The role of fire in oak regeneration. Pages 66–78. in Loftis, D.L. and C.E. McGee (eds.). Proceedings Oak Regeneration: Serious Problems, Practical Recommendations; 1992 September 8–10; Knoxville, TN. Gen. Tech. Rep. SE-84.
- Wade, D. D. and J. D. Lunsford. 1989. A guide for prescribed burning in southern forests. USDA Forest Service Southern Region. Technical Publication R8-TP 11. 56 p.
- Wargo, P. M., Houston, D. R. and LaMadeleine, L.A. Oak Decline. Forest Insect and Disease Leaflet 165 USDA Forest Service. <http://willow.ncfs.umn.edu/fidl-oakdecline.htm>. 7 p.
- Weber, T. and Wolf, J. ?. Maryland's Green Infrastructure—Using Landscape Assessment Tools to Identify a Regional Conservation Strategy. Maryland Department of Natural Resources. Watershed Management and Analysis Division, Annapolis MD.
- Weigl, P. D., M. A. Steele, L. J. Sherman, and J. C. Ha. 1989. The ecology of the fox squirrel (*Sciurus niger*) in North Carolina: Implications for the survival in the southeast. Bulletin No. 24. Tallahassee, FL: Tall Timbers Research Station. 93 p.
- Wenger, K.E. 1984. Forestry Handbook, Second Edition. John Wiley & Sons. 1335 p.

Bibliography

- Whiteman, R. L. and Onken, B. P. 1994. Protecting Delmarva Fox Squirrel Habitat from Gypsy Moth and Southern Pine Beetle, Blackwater National Wildlife Refuge. USDA Forest Service, Forest Health Protection. Morgantown, WV. 46p.
- Whitman, W.R., T.Strange, L. Widjeskog, R.Whittemore, P. Kehoe, and L. Roberts. 1995. Waterfowl habitat restoration, enhancement and management in the Atlantic Flyway. Third ed. Environmental Management Committee, Atlantic Flyway Council, Technical Section, and Delaware Division of Fish and Wildlife, Dover, DE. 1114 pp.
- Wiegert, R. G., and B. J. Freeman. 1990. Tidal salt marshes of the southeast Atlantic coast: A community profile. Biol. Rep. 85(7.29). USFWS, Washington, D.C. 70 pp.
- Yahner, R. H. 1998. Changes in Wildlife Communities Near Edges. *Conservation Biology* 2:333–339.

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