

11.0 Glossary



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Glossary

ABIOTIC: The non-living material components of the environment such as air, rocks, soil particles, and inorganic compounds.

ADAPTIVE MANAGEMENT: An approach to monitoring impacts and managing resources that involves three steps: (1) monitoring, (2) using the information gathered from monitoring to better understand the resources, and (3) modifying management practices based on the information gathered.

AQUATIC: Of or related to water.

AVOIDANCE: Mitigation actions that rely on elimination of all or part of a project, or changes to project timing, location, or structural modifications to completely avoid adverse impacts to biological resources. Avoidance is the first step in the mitigation hierarchy.

BANK CREDIT: Increased habitat value derived from habitat improvements on a mitigation banking site. Habitat improvements identified as mitigation banking credits are typically implemented before project impacts take place. Pre-existing habitat value does not count as credit.

BANK DEBIT: Decreased habitat value on project sites that result from project impacts to biological resources. Bank debits are offset by bank credits.

BASE or 100-YR FLOOD: That flood which has a one percent chance of occurrence in any given year [10 CFR 1022.4(3)(b)]. The resultant floodplain is the base or 100-yr floodplain.

BIOLOGICAL DIVERSITY (BIODIVERSITY): The variety of life and its processes, including the variety in genes, species, ecosystems, and the ecological processes that connect everything in ecosystems. As used in the BRMaP, this definition specifically

excludes artificial diversity (i.e., those biotic elements added through direct manipulation by humans).

BIOLOGICAL RESOURCE: A biological species, population, species assemblage, habitat, community, or ecosystem.

BIOPHYSICAL: The combination of biological and physical components in an ecosystem.

BIOTIC: Pertaining to any aspect of living components.

CANDIDATE SPECIES (FEDERAL): A species for which there is sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list it as endangered or threatened but issuance of the proposed rule is precluded (i.e., by other listing activity or lack of funding) (previously defined as candidate category 1). (STATE): Wildlife species that are under review by the Washington Department of Fish and Wildlife for possible listing as endangered, threatened, or sensitive.

CATEGORICAL EXCLUSION: A category of actions as defined in DOE's NEPA implementing procedures (10 CFR 1021) for which neither an environmental assessment nor an environmental impact statement is normally required.

CENTRAL CORE: The Hanford Site excluding the Fitzner / Eberhardt Arid Lands Ecology Reserve and the North Slope.

COMPENSATORY MITIGATION: Amelioration of project impacts by replacing lost habitat value away from a project site. Can be accomplished by either habitat improvement or by acquisition and protection of substitute, high-quality resources. Compensation is the last step in the mitigation hierarchy.

CORRECTIVE ACTION (MITIGATION): Actions taken following the unsuccessful implementation of mitigation measures that ensure that project-specific mitigation objectives are met.

ECOLOGICAL COMPLIANCE REVIEW: An assessment of the potential for a proposed project to adversely impact biological resources.

ECOLOGICAL PROCESSES: Actions or events that link organisms and their environment, such as predation, mutualism, succession, disturbance, nutrient cycling, primary productivity, and decay.

ECOREGION: A continuous geographic area in which the environmental complex, produced by climate, topography, and soil, is sufficiently uniform to develop characteristic potential major vegetative communities.

ECOSYSTEM: A complete interacting system of organisms and their environment or naturally occurring, self-maintaining system of biotic and abiotic interacting parts that are self-organized into biophysical and social components and are linked to each other by exchanges of energy, matter, and information.

ECOSYSTEM MANAGEMENT: A process that integrates scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term.

ELEMENT: The basic unit of Washington's biologic and geologic environment identified as a needed component of a system of natural areas and defined in the (Washington Department of Natural Resources) Natural Heritage Plan. Elements can be plant communities, special species, wetlands, aquatic systems or geologic features. (The equivalent term "cells" is used by the federal Research Natural Area Program.)

ELEMENT OCCURRENCE: The actual on-the-ground example of an element. (Information about each occurrence is stored in the information system of the Natural Heritage Program.)

ENDANGERED SPECIES: Any species that is in danger of extinction throughout all or a significant portion of its range.

ENDEMIC: A species whose origin and distribution is restricted to a specific geographic locale.

ENHANCEMENT: An improvement in the value of an existing habitat. Under U.S. Fish and Wildlife Service policy enhancement specifically refers to habitat improvements that are independent of mitigation commitments or waste site restoration actions.

EVALUATION SPECIES: A species selected for analysis in habitat suitability index or habitat association models.

EXTIRPATED: A species that was once present in an area but is now locally extinct. For the purposes of BRMaP, a species is potentially extirpated if it has not been observed on site for over 20 years even though it has been searched for in appropriate habitat.

FLOODPLAIN: The nearly level alluvial plain that borders a stream or river and is subject to inundation under flood-stage conditions unless protected artificially. It is usually a constructional landform built of sediment deposited during overflow and lateral migration of streams and rivers. As defined in Executive Order 11988, Floodplain Management, the floodplain of concern is the 100-yr floodplain.

FORMER CANDIDATE (FEDERAL): A species previously identified as appropriate to list (whether or not a proposed rule to list was ever published in the *Federal Register*) or a species for which information at one time indicated that proposing to list it as endangered or threatened was possibly appropriate, but for which sufficient information on biological vulnerability and threat(s) were not available to support a proposed rule to list.

GOAL: Desired condition to be achieved at some unspecified time in the future.

HABITAT: The combination of biotic and abiotic components that provides the ecological support system for plant or animal populations.

HABITAT AMENDMENT: Increasing habitat value by supplementing an area that already contains some of the desired habitat components with missing habitat components.

HABITAT CREATION: The establishment of a functioning habitat in essentially abiotic areas with little or no existing habitat value. The created habitat may or may not resemble the original habitat of the site.

HABITAT EVALUATION PROCEDURE: A method used to document the quality and quantity of available habitat for selected wildlife species.

HABITAT IMPROVEMENT: An increase in habitat value through amendment, reclamation, or creation.

HABITAT SUITABILITY INDEX: An estimate, ranging from 0 to 1 of the utility of the habitat in a specific area to support an evaluation species. A value of 1 indicates optimal habitat, a value of 0 indicates that the area is unusable by the evaluation species.

HABITAT UNIT: The unit of currency in habitat evaluation procedures, which takes into account both the quality and quantity of habitat. Habitat Units = Quality (HSI value) x Quantity (area).

HABITAT VALUE: The suitability of an area to support selected animal and/or plant evaluation species.

HOME RANGE: The land area required for an animal species to survive and/or successfully reproduce.

HYDRIC SOIL: A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

HYDROPHYTIC VEGETATION: Plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

IN-KIND MITIGATION: Replacement of lost habitat value with substitute resources that closely approximate that lost, so that populations of species associated with that habitat may remain relatively stable in the area over time.

INVENTORY: The process of collecting initial information concerning the occurrence and status of particular biological resources.

LANDSCAPE: A heterogeneous land area composed of a cluster of interacting ecosystems that are repeated in similar form throughout. Landscapes

are the spatial matrix in which organisms, populations, communities, habitats, ecosystems, and the like are set.¹

LANDSCAPE ECOLOGY: The study of the principles concerning structure, function, and change of landscapes. Landscape ecology investigates the consequences of spatial structure.

LANDSCAPE PROCESSES: Ecological processes that operate at the scale of the landscape, such as fire, habitat fragmentation, and biological invasion.

LANDSCAPE SCALE: A scale of ecological evaluation that includes multiple habitats, ecosystems, and land uses.

LATE-SUCCESSIONAL SHRUB-STEPPE: Habitat characterized by a relatively constant plant species composition and by large shrubs (usually big sagebrush) whose canopy cover is relatively stable in the absence of a disturbance.

LEVELS OF CONCERN: A management approach used in BRMaP that classifies Hanford's biological resources into four different levels of management concern. Each level (I-IV) corresponds to a different set of management actions that are required to be taken in regard to the biological resources included for consideration at that level. At higher levels of concern (e.g., Level IV), the associated biological resources are considered of higher "value"; thus, the number of applicable management actions are greater and more restrictive.²

MINIMIZATION: Mitigation actions that rely on changes to project timing, location, or structural modifications that minimize adverse impacts to biological resources. There may still be some residual adverse impacts to mitigable resources following minimization. Minimization is the second step in the mitigation hierarchy.

MITIGATION: A series of prioritized actions that when achieved in full ensures project impacts will result in no net loss of habitat value or wildlife populations. The sequence of mitigation actions proceeds from the highest to lowest priority as

¹ Neither ecosystems nor landscapes have an inherent size. Thus, they are distinguished not on their size, but rather on the basis of their primary focus. For ecosystems, the primary focus is interactions among and between the biotic and abiotic components; for landscapes, the focus is on spatial structure

² Separate from the levels already described, BRMaP addresses two other management levels: Level A and Level B. These are biological resources that are either artificial habitats (e.g. abandoned old fields) or are common and therefore do not qualify for focused management attention (Level A) or are undesirable biological resources (e.g., noxious weeds) for which management is directed at their control and not their conservation.

follows: (1) avoid the impact altogether, (2) minimize the impact, (3) rectify the impact by restoring the affected environment, and (4) compensate for the impact by replacing or providing substitute resources or environments. Mitigation actions are applicable for potential impacts to biological resources of concern as a result of proposed Hanford Site activities. The degree to which mitigation actions are conducted is commensurate with the value of the resource and the amount of impact to that resource.

MITIGATION ACTION PLAN (MAP): Document associated with a record of decision for an environmental impact statement or a finding of no significant impact for an environmental assessment for proposed actions that require mitigation that explains how mitigation commitments will be planned and implemented [see DOE's NEPA implementing procedures (10 CFR 1021.104 and 10 CFR 1021.331)].

MITIGATION AREA: Any area on site (mitigation via rectification) or offsite (mitigation via compensation) within which habitat improvements occur as part of a mitigation commitment. The offsite mitigation area must include locations where the habitat improvements occur and adjacent native habitat areas. The latter provides the relevant ecological context that enables the habitat improvements to effectively replace lost habitat value. An offsite mitigation area may include lands that are dedicated to a mitigation bank and post-impact compensation areas.

MITIGATION BANKING: Habitat improvement actions taken for the specific purpose of compensating for unavoidable losses before the impacts occur. Allows for a mitigation credit/debit system, and allows for compensatory actions for multiple projects to be coordinated.

MITIGATION (REPLACEMENT) RATIO: The ratio of the area over which mitigation measures are applied to the area receiving adverse impacts. The calculation of an appropriate ratio (and any adjustments made to the ratio because of time delays in accomplishing mitigation, etc.) ensures that the lost habitat value, and not simply the lost acreage, is replaced.

MITIGATION THRESHOLD LEVEL: The amount of habitat value reduction or potential species population impact that will trigger the requirements for rectification and/or compensatory mitigation.

MONITORING: The process of collecting information to evaluate if objective and anticipated or assumed results of a management plan are being realized or if implementation is proceeding as planned. Specifically for mitigation: the collection of specific types of data to determine if the goals and objectives of project-specific mitigation or the mitigation bank are met.

MONITOR SPECIES (STATE): Definitions differ between plants (Washington Department of Natural Resources) and animals (Washington Department of Fish and Wildlife). Included taxa are of potential concern; however, the monitor designation is a non-listed category.

NATIVE: A species, plant community type, or habitat whose presence in an area is due to natural processes and not as a result of direct human manipulation. Native biotic elements and natural processes contribute to biological diversity.

NON-NATIVE: A species, plant community type, or habitat that has been introduced or modified as a result of human actions. Non-native biotic elements or human-dependent processes contribute to artificial diversity. Non-native species also may be referred to as introduced or exotic species.

NORTH SLOPE: That portion of the Hanford Site that lies to the north and east of the Columbia River and is managed by the USFWS as the Saddle Mountain Unit and Wahluke Unit of the Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge.

OBLIGATE SPECIES: A species such as sage grouse that is able to survive only in a specific habitat or one that has a narrow niche for habitat preference

OBJECTIVE: Measurable result to be achieved within a specified time period.

OFFSITE: Away from the project site and, unless otherwise specified, still within the Hanford Site boundary.

ONSITE: The location where project impacts to biological resources occur on the Hanford Site.

OUT-OF-KIND MITIGATION: Replacement of lost habitat value with substitute resources that are physically or biologically different from those lost.

PLANT COMMUNITY: All the plant populations occurring in a shared habitat or environment.

POTENTIAL (NATURAL) VEGETATION: Vegetation that would exist today if humans were removed and in their absence plant succession was telescoped into a single moment. The time compression eliminates the effects of future climatic fluctuations; however, the effects of previous human activities are permitted to stand.

PRIORITY HABITAT: A habitat designated by the Washington Department of Fish and Wildlife as having unique or significant value to many wildlife species. A priority habitat may be described by a unique vegetation type, dominant plant species of primary importance to fish and wildlife, successional stage, or specific habitat element (e.g., talus slopes) that is of key value to fish and wildlife.

PRIORITY SPECIES: Wildlife species designated by the Washington Department of Fish and Wildlife that require protective measures and/or management guidelines to ensure their perpetuation. Criteria for designating a species as priority are: (1) listed and candidate species, (2) vulnerable aggregations, and (3) species of recreational, commercial, and/or tribal importance.

PRODUCTIVITY: The amount of energy or biomass accumulated by an individual, population, or community during a specific time period.

PROPOSED SPECIES (FEDERAL): A species that is the subject of a proposed or final rule indicating the appropriateness of listing as threatened or endangered.

RECLAMATION: Improvements to the value of habitat degraded by anthropogenic disturbance. Reclamation is intermediate to habitat creation and habitat amendment.

RECORD OF DECISION: Decision document for a NEPA or CERCLA action that describes an agency's proposed action and identifies any mitigation (and/or restoration) actions that the agency is committing to conduct.

RECTIFICATION: Amelioration of project impacts by replacing lost habitat value at the project site. Rectification is the third step in the mitigation hierarchy.

REMEDICATION (WASTE SITE): Actions taken to remove or isolate physical, chemical, or radiological hazards at a past-practice waste site.

REPLACEMENT UNIT: The amount of habitat improvement, per resource type and per unit area, that is necessary to achieve the mitigation goal.

RESTORATION (INDIVIDUAL SITE): Actions taken to create habitat value at a past-practice waste site subsequent to the completion of remediation or at a non-contaminated, but human-impacted site (e.g., industrial area, road, etc.), subsequent to decommissioning or end of use. The degree to which habitat values are restored depends on the future land use of the site and the restoration goal.

RESTORATION (SITE-WIDE): Actions taken to replace habitat value and ecological function within the context of a broad geographic area to account for past losses of value and function attributable to human-induced impacts.

RIPARIAN: Generally relating to the transition zone between aquatic (specifically flowing water) and terrestrial ecosystems within which plants are dependent on a perpetual source of water.

SENSITIVE SPECIES (STATE): A species native to the state of Washington that is vulnerable or declining and likely to become endangered or threatened without active management or the removal of threats.

SERIAL STAGES: The developmental phase of vegetation with characteristic structure and plant species composition.

SHRUB-STEPPE: Plant communities consisting of one or more layers of perennial grass above which there rises a conspicuous but discontinuous layer of shrubs. Communities with bitterbrush (*Purshia tridentata*), big sagebrush (*Artemisia tridentata*), and perhaps threepart sagebrush (*A. tripartita*) illustrate shrub-steppe physiognomy in Washington.

SPECIES OF CONCERN: Narrowly defined—A species of concern is a species that a federal or state agency has identified via law, regulation, or policy as deserving management attention; that is, any federal endangered, threatened, proposed, or candidate species, any species covered under the Migratory Bird Treaty Act, any additional species identified as endangered, threatened, sensitive, or monitor in Washington State (or in Oregon when that species occurs in the Columbia Basin Ecoregion portion of Oregon), plus any additional species identified by the Washington Department of Fish and Wildlife as a Priority Species. Broadly defined—A species of concern is any species identified in the BRMaP that is assigned to a specific resource level of concern.

STEPPE: In contrast to a desert, has moisture relations adequate to support an appreciable cover of perennial grasses on zonal soils (i.e., deep loams on gentle upland slopes), yet not enough to support arborescent vegetation (i.e., trees). Steppe includes a physiognomic subdivision—shrub-steppe—and two ecological subdivisions: meadow-steppe and true-steppe.³

THREATENED SPECIES: any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

TERRESTRIAL: pertaining to the land.

WATERSHED: A total area of land above a given point on a waterway that contributes runoff water to the flow at that point. A major subdivision of a drainage basin.

WETLANDS: Areas that under normal circumstances have hydrophytic vegetation, hydric soils, and wetland hydrology.

WETLAND HYDROLOGY: Generally permanent or periodic inundation or prolonged soil saturation sufficient to create anaerobic conditions in the soil.

³ Meadow-steppe always reflects maximal water supplies for steppe vegetation as compared with true-steppe in which conditions are drier. Although not a physiognomic classification, meadow-steppe has a substantial measure of physiognomic homogeneity (i.e., a very dense plant cover with a rich component of broad-leaved forbs). Thus, meadow-steppe can be distinguished from true-steppe communities in which the grass cover is sparser, more narrow-leaved, and accompanied by few broad-leaved forbs (Daubenmire 1970).