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H.1 Glossary

303(d) – A section of the Clean Water Act that required states, territories, and authorized tribes to develop lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes.

4th level HUC – The fourth level of classification is the cataloging unit, the smallest element in the hierarchy of hydrologic units.

Adaptive Management – The rigorous application of management, research, and monitoring to gain the information and experience necessary to assess and modify management activities. It refers to a process that uses feedback from refuge research and monitoring, and evaluation of management actions to support or modify objectives and strategies at all planning levels ([602 FW 1.4](#)).

Adjudicated water right – An adjudication is an administrative or judicial determination of all rights to use water in a particular stream system or watershed, to establish the priority, point of diversion, place and nature of use and the quantity of water used among the various claimants. These stream or watershed adjudications can be initiated by a water user (including the United States) or by the State. The United States may be joined in an adjudication if the requirements of the McCarran Amendment are met.

Aerenchyma – Modified parenchymatous tissue having large intracellular air spaces that is found especially in aquatic plants where it facilitates gaseous exchange and maintains buoyancy.

Alternative – Different sets of objectives and strategies or means of achieving refuge purposes and goals, helping fulfill the Refuge System mission, and resolving issues ([602 FW 1.6](#)). The “no action” alternative is current refuge management, while the “action” alternatives are all other alternatives.

Alluvial – Made up of or found in the materials that are left by the waters of rivers, floods, etc.

Appropriate Use – A proposed or existing use on a refuge that meets at least one of the following four conditions:

- (1) The use is a wildlife-dependent recreational use as identified in the Improvement Act.
- (2) The use contributes to fulfilling the refuge purpose(s), the Refuge System mission or goals, or objectives described in a refuge management plan approved after October 9, 1997, the date the Improvement Act was signed into law.
- (3) The use involves the take of fish and wildlife under State regulations.
- (4) The use has been found to be appropriate as specified in Section 1.11 of the U.S. Fish and Wildlife Service (USFWS) Appropriate Use Policy ([603 FW 1](#)).

Approved Acquisition Boundary – National Wildlife Refuge boundary approved by the National or Regional Fish and Wildlife Service Director for potential acquisition of lands by the Service.

Approved Refuge Boundary – A National Wildlife Refuge boundary approved by the National or Regional Fish and Wildlife Service Director. Within this boundary, the Service may negotiate with landowners to acquire lands not already owned by the Service.

Benthic – The collection of organisms living on or in sea or lake bottoms.

Big Six – Wildlife-dependent recreational uses under Refuge System Improvement Act. This includes hunting, fishing, wildlife observation, photography, environmental education, and interpretation.

Biological Diversity (also Biodiversity) – The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and communities and ecosystems in which they occur ([601 FW 3](#)). The Refuge System’s focus is on indigenous species, biotic communities, and ecological processes.

Biological Integrity – Biotic composition, structure, and functioning at the genetic, organism, and community levels comparable with historical conditions, including the natural biological processes that shape genomes, organisms, and communities ([601 FW 3](#)).

Colluvium – Soil and debris that accumulate at the base of a slope by mass wasting or sheet erosion. It generally includes angular fragments, not sorted according to size, and may contain slabs of bedrock that dip back toward the slope, indicating both their place of origin and that slumping was the process of transportation. At the edges of valleys, colluvium may be interfingered with and almost indistinguishable from alluvium.

Compatibility Determination – A written determination signed and dated by the refuge manager and regional chief signifying that a proposed or existing use of a National Wildlife Refuge is or is not a compatible use. The director makes this delegation through the Regional Direction ([603 FW 2](#)).

Compatible Use – 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 Refuge System or the purposes of the refuge ([603 FW 3.6](#)). A compatibility determination supports the selection of compatible uses and identifies stipulations or limits necessary to ensure compatibility.

Conservation Targets (also see Resources of Concern; Priority Species; Species Groups; and Communities) – This is the term used by land management agencies and conservation organizations to describe the resources (ecological systems, ecological communities, species, species groups, or other natural resources) selected as the focus of conservation actions.

Consumptive Use – Recreational activities, such as hunting and fishing that involve harvest or removal of wildlife or fish, generally to be used as food by humans.

Consumptive Use Rate – Consumptive use rate represents the difference between the amount of water diverted and the amount of the return flow to the system (e.g., surface stream or underground basin). It is that amount by which the total resource is depleted.

Cover – The estimated percent of an area, projected onto a horizontal surface, that is occupied by a particular plant species.

Decadent – Undergoing a process of decline or decay.

Dissolved Oxygen – The concentration of oxygen dissolved in water, expressed in mg/L or as percent saturation, where saturation is the maximum amount of oxygen that can theoretically be dissolved in water at a given altitude and temperature.

Duripan – A horizon in mineral soil characterized by cementation by silica.

Ecotourism – Tourism that is designed to contribute to the protection of the environment or at least minimize damage to it, often involving travel to areas of natural interest in developing countries or participation in environmental projects.

Effect (impact) – A direct result of an action that occurs at the same time and place; or an indirect result of an action that occurs earlier in time or in a different place and is reasonably foreseeable; or the cumulative results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions (40 Code of Federal Regulations (CFR) 1508.8).

Emergent – Erect plants rooted underwater that grow above (emerge from) the surface of the water (e.g., cattails).

Emissions Scenarios – Climate change term that is group into four categories of cumulative CO₂ emissions (all sources) between 1990 and 2100: low, medium low, medium high, and high emissions. Each category contains situations with a range of different driving forces yet similar cumulative emissions.

Eolian – Borne, deposited, produced, or eroded by the wind.

Exotic – From another part of the world; foreign.

Fecundity – The quality or power of producing abundantly; fruitfulness or fertility.

Flood Irrigation – A method of irrigation using water released into a field and allowed to flood over its entire surface.

Fluvial – Of or pertaining to a river.

Focal Species (also Priority Resources of Concern or Focal Conservation Target) – A suite of conservation targets that, for the purposes of planning, are sorted and condensed to represent threats to biological integrity, diversity, and environmental health at the refuge level.

Goal – Descriptive, open-ended, and often broad statement of desired future conditions that conveys a purpose but does not define measurable units ([620 FW 1.6](#)).

Greenhouse effect – The greenhouse effect refers to circumstances where the short wavelengths of visible light from the sun pass through a transparent medium and are absorbed, but the longer wavelengths of the infrared re-radiation from the heated objects are unable to pass through that medium. The trapping of the long wavelength radiation leads to more heating and a higher resultant temperature.

Habitat Management Plan – A plan that provides refuge managers a decision-making process; guidance for the management of refuge habitat; and long-term vision, continuity, and consistency for habitat management on refuge lands ([620 FW 1.4](#)).

Habitat Restoration – Management emphasis designed to move ecosystems to desired conditions and processes, and/or to healthy ecosystems.

Historical Conditions – Composition, structure, and functioning of ecosystems resulting from natural processes that are believed, based on sound professional judgment, to have been present prior to substantial human-related changes to the landscape ([601 FW 3](#)).

Idle – Not working or active; in the context of the Malheur Refuge comprehensive conservation plan (CCP), fields that are not receiving grazing or haying treatment in the current year.

Important Bird Areas – A site, designated by the National Audubon Society, that provides essential habitat for one or more species of birds and that is recognized as being important on a global, continental, or state level.

Integrated Pest Management (IPM) – The use of pest and environmental information in conjunction with available pest control technologies to prevent unacceptable levels of pest damage by the most economical means and with the least possible hazard to persons, property, and the environment.

Interpretation – A teaching technique that combines factual information with stimulating explanation. Frequently used to help people understand natural and cultural resources.

Inundation – To cover with water, especially floodwaters.

Invasive – Marked by the tendency to spread. As applied to plant or animal species, *invasive* connotes a species (often but not always non-native) that rapidly takes over a habitat or area, often crowding out other species and reducing diversity and ecosystem health.

Inviolate Sanctuary – The original intent of the term *inviolate sanctuary* is found in the Migratory Bird Conservation Act (first passed in 1918 as the Migratory Bird Treaty Act and amended in 1934 and 1938). This Act originally required that all refuges be inviolate sanctuaries and deemed that refuges' primary purposes were as breeding grounds and habitat for migratory birds. Migratory bird hunting was prohibited in migratory waterfowl areas by the Act, but most other human uses were not addressed. The 1938 amendment to the Act gave refuge managers authority to decide if, when, and how bird hunting would be allowed. After World War II, public demand for opening refuges to recreation increased. The 1949 Duck Stamp Act allowed waterfowl hunting on refuges, but restricted the percentage of each refuge open to hunting. Current policy states that portions of a refuge are considered "inviolate sanctuaries" if they were (a) acquired with the approval of the Migratory Bird Conservation Commission (MBCC) for the purpose of an inviolate sanctuary; (b) acquired with MBCC approval or Land and Water Conservation Funds to protect a threatened or endangered species; or (c) established by an instrument or document that states the intent to manage the area as an "inviolate sanctuary for migratory birds" or to fulfill the purpose of the Migratory Bird Conservation Act. Policy further allows migratory game bird hunting on no more than 40 percent of the area considered inviolate sanctuary if it is compatible with a refuge's purposes and mission. Inviolate sanctuary classification imposes no limits on hunting non-migratory birds, fur bearers, or other game species.

Lacustrine – Of or relating to a lake.

Lithology – The study of the general physical characteristics of rocks.

Lunette dune – Accumulations of semiconsolidated fine sand, silt, and clay-pellet aggregates that form rounded, low (meters high) dunes on the downwind sides of playas.

Macrophyte – A plant that is large enough to be visible to the naked eye. A macrophyte may be an emergent, submergent, or floating type of aquatic plant. Its ecological significance is providing cover for fish and acting as substrate for aquatic invertebrates, as well as producing oxygen and serving as food for some fish and other wildlife.

Meristematic tissue – Embryonic tissue located at the tips of stems and roots and occasionally along their entire length; can divide to produce new cells; one of the four main tissue systems in plants.

Mesic – Characterized by, relating to, or requiring a moderate amount of moisture.

Migratory birds – Those species of birds listed under 50 CFR 10.13 (as defined by various treaties) ([720 FW 1](#)).

Monotypic – The sole member of a group, such as a single species that constitutes a genus.

National Register of Historic Places – The nation’s master inventory of known historic properties administered by the National Park Service. Includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archeological, or cultural significance at the national, state, and local levels.

National Wildlife Refuge – A designated area of land, water, or an interest in land or water within the Refuge System, excluding coordination areas ([601 FW 1.3](#)).

National Wildlife Refuge System – Various categories of areas administered by the Secretary of the Interior for the conservation of fish and wildlife, including species threatened with extinction; all lands, waters, and interests therein administered by the Secretary as wildlife refuges; areas for the protection and conservation of fish and wildlife that are threatened with extinction; wildlife ranges; game ranges; wildlife management areas; or waterfowl production areas.

National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57) – A federal law that amended and updated the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668).

Native – With respect to a particular ecosystem, a species that historically occurred or currently occurs (other than as a result of an introduction) in that ecosystem ([601 FW 3](#)).

Non-consumptive Recreation – Recreational activities that do not involve harvest, removal, or consumption of fish, wildlife, or other natural resources.

Non-native species – A species that is present in the planning area but was not known to exist prior to Euro-American settlement of the Americas.

Novel community – Made up of either native and non-native species or native species outside historical spatial distributions.

Noxious Weed – A plant species designated by Federal or state law as generally possessing one or more of the following characteristics: aggressive or difficult to manage; parasitic; a carrier or host of serious insect or disease; or non-native, new, or not common to the United States. According to the Federal Noxious Weed Act (PL 93-639), a noxious weed is one that causes disease or has adverse effects on man or his environment and is therefore detrimental to the agriculture and commerce of the United States and to the public health.

Objective – A concise statement of what we want to achieve, how much we want to achieve, when and where we want to achieve it, and who is responsible for the work. Objectives derive from goals and provide the basis for determining strategies, monitoring refuge accomplishments, and evaluating the success of strategies. Objectives should be attainable, time-specific, and measurable ([620 FW 1.6](#)).

Outcropping – A portion of bedrock or other stratum protruding through the soil level.

Pacific Decadal Oscillation (PDO) – Described as a long-lived El Niño-like pattern of Pacific climate variability. As seen with the better-known El Niño/Southern Oscillation (ENSO), extremes in the PDO pattern are marked by widespread variations in the Pacific Basin and the North American climate.

Pacific Flyway – One of several major north-south travel corridors for migratory birds. The Pacific Flyway is west of the Rocky Mountains.

Paleontological – The study of the forms of life existing in prehistoric or geologic times, as represented by the fossils of plants, animals, and other organisms.

Palustrine – Relating to a system of inland, nontidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface).

Pedogenic – The formation and development of soil.

Phreatophyte – A deep-rooted plant that obtains water from a permanent ground supply or from the water table.

Physiographic Province – A region in which the landforms are similar in geologic structure and differ significantly from the landform patterns in adjacent regions.

Phytoplankton – Photosynthetic or plant constituent of plankton; mainly unicellular algae.

Piezometric – Of or relating to pressure.

Plant Community – An assemblage of plant species unique in its composition, occurring in particular locations under particular influences; a reflection or integration of the environmental influences on the site such as soils, temperature, elevation, solar radiation, slope, aspect, and rainfall; denotes a general kind of climax plant community (e.g., Oregon white oak woodland).

Playa – Enclosed shallow depressions in desert basins, tectonic lows, interdune flats, wadis, and abandoned channels that contain deposits and evaporate from the impoundment of episodic stream flow or near-surface groundwater.

Priority Public Uses – Hunting, fishing, wildlife observation and photography, and environmental education and interpretation, where compatible, are identified under the National Wildlife Refuge System Improvement Act of 1997 as the six priority public uses of the National Wildlife Refuge System.

Priority Resources of Concern – See *Resources of Concern* and *Focal Species* definitions.

Proving up (on water rights) – The state process of meeting all the conditions placed on water right permits.

Rake-bunch grazing – A form of treatment where meadow hay is mowed and raked into windrows, but left in place to be consumed by livestock during the late fall and winter.

Refuge Purpose(s) – 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. For refuges that encompass congressionally designated wilderness, the purposes of the Wilderness Act are additional purposes of the refuge ([620 FW 1.6](#)).

Residuum – Something remaining after removal of a part; a residue.

Resource of Concern (ROC) – This refers to all plant and/or animal species, species groups, or communities specifically identified in refuge purpose(s), the Refuge System mission, or international, national, regional, state, or ecosystem conservation plans or acts. For example, waterfowl and shorebirds are ROCs on a refuge whose purpose is to protect “migrating waterfowl and shorebirds.” Federal or state threatened and endangered species on that same refuge are also an ROC under terms of the respective endangered species acts ([620 FW 1.4](#)).

Rested – Allowed to be inactive in order to regain strength, health, or energy.

Riverine – Relating to or resembling a river. Located on or inhabiting the banks of a river; riparian.

Scoping – Early in the planning process, this is the phase of notifying the public of the opportunity to participate in the planning process to help identify issues, concerns, and opportunities related to the project.

Seasonal Moisture Deficit – The difference between the amount of water that is in a soil and the amount needed for crops to grow successfully.

Seasonal Wetlands – Areas that are periodically inundated or have soils saturated to the surface at some time during the growing season (but not year-round).

Senescent – Growing old; aging. As applied to plants, when they are in a dormant phase (often during winter).

Sen-Theil-Kendall Line – A type of statistical analysis for water resources.

Significant Effect – Use of this term in the National Environmental Policy Act (NEPA) requires consideration of both context and intensity (40 CFR 1508.27). The significance of an action must be

analyzed in its current and proposed short- and long-term effects on the whole of a given resource (e.g., affected region) (context). Intensity is the severity of the effect.

SLR Line – A simple linear regression line.

Snow Water Equivalent – A common snowpack measurement. It is the amount of water contained within the snowpack. It can be thought of as the depth of water that would theoretically result if the entire snowpack were melted instantaneously.

Species of Concern (Federal) – Taxa whose conservation status is of concern to the USFWS (many previously known as Category 2 candidates), but for which further information is still needed. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing.

Steppe – Arid land with xerophilous vegetation, found usually in regions of extreme temperature range and loess soil.

Strategy – A specific action, tool, technique, or combination of actions, tools, and techniques used to meet unit objectives ([620 FW 1.6](#)).

Subirrigated – To irrigate (land) by means of an underground system of pipelines or by natural moisture in the subsoil.

Submergent – A plant that is completely beneath the surface of water.

Successional – The gradual and orderly process of ecosystem development brought about by changes in community composition and the production of a climax characteristic of a particular geographic region.

Telemetry – The science and technology of automatic measurement and transmission of data by wire, radio, or other means from remote sources, such as from space vehicles, to receiving stations for recording and analysis.

THEIL – A nonparametric statistical test that can be used instead of regression-based methods for discerning a monotonic trend.

TMDL (total maximum daily load) – A calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.

Tolerance thresholds – The maximum amount of disturbance a suite of plant species can tolerate before an irreparable shift in plant community composition takes place.

Transpiration – The passage of water through a plant from the roots through the vascular system to the atmosphere.

Tuff – A rock composed of the finer kinds of volcanic detritus usually fused together by heat.

Wetlands – 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 at some time during the growing season of each year ([660 FW 2](#)).

Wildlife-dependent Recreational Use – A use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation. These are the six priority public uses of the Refuge System as established in the National Wildlife Refuge System Administration Act, as amended. Wildlife-dependent recreational uses, other than the six priority public uses, are those that depend on the presence of wildlife. The Service will also consider these other uses in the preparation of refuge CCPs; however, the six priority public uses always will take precedence ([620 FW 1.6](#)).

H.2 Acronyms

Act	National Wildlife Refuge System Improvement Act of 1997 (also Improvement Act or NWRISA)
ADA	Americans with Disabilities Act
AM	Adaptive Management
ARPA	Archaeological Resources Protection Act
AUD	Appropriate Use Determination
BCR	Bird Conservation Region
BIDEH	Biological Integrity, Diversity, and Environmental Health
BLM	Bureau of Land Management
BMP	Best Management Practice
CCC	Civilian Conservation Corps
CCP	Comprehensive Conservation Plan
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
cfs	Cubic Feet per Second
CIG	Climate Information Group at the University of Washington
COA	Conservation Opportunity Area
CPR	Center Patrol Road
DDT	Dichlorodiphenyltrichloroethane
DPS	Distinct Population Segment
EE	Environmental Education
EIS	Environmental Impact Statement
EMS	Environmental Management System
ENSO	El Niño/Southern Oscillation
EOLC	Eastern Oregon Livestock Company
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
HACCP	Hazard Analysis and Critical Control Points Planning
HCHS	Harney County Historical Society Museum
HCWC	Harney County Watershed Council
HUC	Hydrologic Unit Code
I&M	Inventory and Monitoring
IBA	Important Bird Area
Improvement Act	National Wildlife Refuge System Improvement Act (P.L. 105-57)
IPM	Integrated Pest Management
IPCC	Intergovernmental Panel on Climate Change
LCC	Landscape Conservation Cooperative
LEIS	Legislative Environmental Impact Statement
MBCC	Migratory Bird Conservation Commission
MPH	Miles Per Hour
msl	Mean Sea Level
NAGPRA	Native American Graves Protection and Repatriation Act
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service

NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
NWRS	National Wildlife Refuge System or the Refuge System
NWS	National Weather Service
OCS	Oregon Conservation Strategy
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
O-M pcp	October-March Precipitation
OPDR	Oregon Parks and Recreation Department
OWRD	Oregon Water Resources Department
PCB	Polychlorinated Biphenyl
PDO	Pacific Decadal Oscillation
PIF	Partners in Flight
P.L.	Public Law
PLO	Public Land Order
PPM	Parts Per Million
PRISM	Parameter-elevation Regressions on Independent Slopes Model
PRPA	Paleontological Resources Preservation Act
PUP	Pesticide Use Proposal
RAPP	Refuge Annual Performance Plan
Refuge Administration Act	National Wildlife Refuge System Administration Act of 1966 as amended (16 U.S.C. 668dd-668ee)
Refuge System	National Wildlife Refuge System or NWRS
RNA	Research Natural Areas
ROC	Resource of Concern
SCORP	Oregon Statewide Comprehensive Outdoor Recreation Plan
Service	United States Fish and Wildlife Service or USFWS
SLR	Sea Level Rise
SNOTEL	Snowpack Telemetry (designed to collect snowpack and related climatic data in the Western United States and Alaska)
STM	State and Transition Model
SWE	Snow Water Equivalent
TLDEIS	Transmission Line Project Draft Environmental Impact Statement
TMDL	Total Maximum Daily Load
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	United States Fish and Wildlife Service or the Service
USGS	United States Geological Survey
USHCN	United States Historical Climatology Network
WSA	Wilderness Study Areas
YCC	Youth Conservation Corp

