

## XII. Glossary

**adaptive management:** calls for designing the management of natural systems as replicable experiments in which participants are constantly learning and improving the management process

**alluvial:** of or relating to the sediment deposited by flowing water

**anadromous fish:** a fish or fish species that spends portions of its life cycle in both fresh and salt waters, entering fresh water from the sea to spawn; these include the anadromous forms of Pacific trouts and salmon of the genus *Onchorynchus* (rainbow and cutthroat trout and Chinook, coho, sockeye, chum, and pink salmon), Arctic char, Dolly Varden, sheefish, smelts, lamprey, whitefish, and sturgeon

**anthropogenic:** caused by humans

**apex:** the highest point; in biological terms it sometimes refers to an organism at the top of the food chain

**aufeis:** the ice formed when water from a stream freezes on top of previously formed ice

**ballast:** any heavy material placed at the bottom of a boat to stabilize it

**benthic ecosystem:** an ecosystem in which a collection of organisms attach, burrow, or rest on the bottom substrates

**benthos:** the bottom of the sea

**bioaccumulate** or **biomagnify:** to pass from tissues in one level of the food chain into tissues of the next higher trophic level; in this way pollutants can accumulate in the flesh of higher order organisms, including humans

**biodiversity:** the variety of life forms, the ecological roles they perform, and the genetic diversity they contain; often used to mean “species richness”

**biogenic:** produced by the actions of living organisms

**biogeographic:** relating to the science that deals with the location of a species on a regional or continental level

**biomass:** the total mass of the species in any ecological community

**biome:** a major regional biotic community characterized by the dominant forms of plant life and the climate

**biota** or **biotic:** living things; the adjective form means having to do with living things

**bottomland:** low-lying land near a body of water; the soil consists of sand, silt, and mud deposited by flowing water

**bryophytes:** a division of the plant kingdom that includes mosses and liverworts; plants with rhizoids rather than roots, and little or no vascular tissue

**calcareous:** containing calcium carbonate, calcium, or limestone

**caldera:** a large depression formed by a volcanic explosion or a volcanic collapse

**canopy:** the uppermost layer in a forest formed by the tops of trees

**carrying capacity:** number of individuals in a population that the resource of a habitat can support

**charrette:** an intensive brainstorming session involving any number of people and lasting anywhere from a few hours to a few days

**chemosynthesis:** process by which carbohydrates are made from carbon dioxide and water while using chemical nutrients as an energy source

**circumpolar:** surrounding or near one of the Polar Regions

**cline:** a gradual change in a character or feature across the distributional range of a species or population, usually associated with an environmental or geographic transition

**cohort:** a group of related families

**colluvial:** of or relating to a loose deposit of rock debris that accumulates through gravity at the bottom of a cliff or slope

**colluvium:** a loose deposit of rock debris at the base of a cliff or slope

**colonization capacity:** the capacity at which an invading species can settle in to a habitat

**coniferous:** of or having cones, (i.e. a coniferous tree would be a spruce)

**conservation:** the use of methods and procedures necessary or desirable to sustain healthy populations of wildlife, including all activities associated with scientific resources management, such as research, census, monitoring of populations; acquisition, improvement and management of habitat; live trapping and transplantation; wildlife damage management; and periodic or total protection of a species or population, as well as the taking of individuals within wildlife stock or population if permitted by applicable state and federal law

**continental climate:** climatic conditions under the influence of adjacent land masses

**cyclic populations:** animal populations that fluctuate drastically, with peak and low numbers tending to recur at regular intervals, and over large geographic areas. For example, 1960 was a “lemming year” for almost all of the Canadian Arctic. All sorts of reasons for the cycles have been suggested, from changes in the number of sunspots to snow conditions. Weather is a likely, but still unproven, trigger.

**decadent:** to be in a state of decline or decay

**deciduous:** losing foliage at the end of the growing season

**decomposer:** an organism, often a bacterium or fungus, that feeds on and breaks down dead plant or animal matter, thus making organic nutrients available to the ecosystem

**depensatory:** having a rate that increases as the size of a population decreases

**detritivore:** an organism that feeds on detritus, such as forest litter or leaf litter

**detritus:** loose matter resulting from the decay or erosion of rock or organic material

**dimorphism:** the existence of the same species with two different forms that can differ in size, color, or shape

**ecoregion:** large area of land and water that contains assemblages of vegetation communities that share species and ecological dynamics, environmental conditions, and interactions that are critical for their long-term persistence

**ecotone:** the transition between two adjacent ecological communities over a broad area

**endemic species:** a species that is restricted to, or native to, a particular area or region. Because of their limited geographic range, they are often, but not always, vulnerable to extinction.

**ephemeral plant:** any plant that lives only a very short time; short-lived, transitory, having a short life cycle

**ephemeral stream:** An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Ground water is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

**epibiota:** organisms living on the seafloor surface

**epikarst:** the upper surface of karst, consisting of a network of intersecting fissures and cavities that collect and transport surface water and nutrients underground. Epikarst depth can range from a few centimeters to tens of meters.

**ericaceous:** refers to the heath family, Ericaceae, e.g., blueberry; of, relating to, or being a heath or of the heath family of plants

**estuaries** or **estuarine:** refers to a coastal body of water that has a free connection with the open sea, where fresh water from land drainage is mixed with seawater. Estuaries are subject to tidal action.

**eutrophication:** the aging of a lake through the enrichment of its own water

**extirpation** or **extirpated:** means bringing a species to extinction within all or a part of its range; going or having gone extinct

**fecundity:** the state of being fertile; capacity for producing offspring

**feeding guild:** a group of species with similar foraging habits and similar roles in a community

**fish wheels:** a series of lift nets on a wheel frame that is rotated by the river current, catching migrating fish

**fitness:** the genetic contribution by an individual's descendants to future generations of a population

**floodplain:** the part of the river valley that is made up of unconsolidated, riverborne sediment and is occasionally flooded

**fluvial:** pertaining to rivers or streams; a product of flowing waters

**food chain** or **food web:** a succession of organisms in an ecological community that constitutes a continuation of food energy from one organism to another, as each consumes a lower member and in turn is preyed upon by a higher member of the chain

**forbs:** herbaceous ephemeral plants other than grasses, sedges or rushes

**fruticose lichens:** branched, shrub-like lichens that are attached to the twig by a single, sucker-like holdfast

**fur sealing:** process by which furbearer species are officially marked with locking tags and/or other means to record their harvest and biological information

**game or game species:** In common usage, this term refers to species that are commercially or recreationally hunted, trapped, or fished.

**gelifluction lobes:** a feature shaped by the process of soil movement over a permafrost layer in a periglacial environment

**graminoid:** grass or a grass-like plant

**habitat:** broadly defined, means all abiotic and biotic factors (temperature, humidity, precipitation, radiation, substrate, nutrient conditions, microbial communities, insect and plant communities, forage species, competitors, and predators) that describe the universe in which a given species can live and reproduce successfully over time

**halophytic:** of, or having to do with, a plant that grows naturally in soils having a high content of various salts

**haulouts:** dry land areas used by marine mammals, especially walrus and sea lions

**hydrography:** scientific description or analysis of the physical conditions, boundaries, flow, and related characteristics of the earth's surface waters

**herbaceous:** having little or no woody tissue. Most plants grown as perennials or annuals are herbaceous.

**hydric:** wet, excessive moisture, saturated

**hydrology:** scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere

**hypogean:** growing or occurring underground

**imperiled species:** in the most general sense, typically includes species listed as Threatened or Endangered under the U.S. Endangered Species Act; species classified as critically endangered, endangered, or vulnerable by the World Conservation Union's (IUCN) Red List of Threatened Species; and those species classified as globally imperiled or critically imperiled (i.e., species global ranks of G1 – G2) by NatureServe

**indigenous:** existing, growing, or produced naturally in a region or country; native to an area

**infauna:** benthic organisms that dig into the seabed or construct tubes or burrows

**infaunal:** living within the sediment

**instream flow:** any quantity of water flowing in a natural stream channel at any time of year. The quantity may or may not be adequate to sustain natural ecological processes and may or may not be protected or administered under a permit, water right, or other legally recognized means.

**interspecific interactions:** interactions that occur *between* species

**intraspecific interactions:** interactions that occur between members of the *same* species

**intertidal:** the region between the high tide mark and the low tide mark

**invasive species:** a nonindigenous species whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health. The term noxious or nuisance species is sometimes also used.

**island biogeographic effects:** the biological theory which says that, because of isolation, species located on islands are more subject to habitat change, the undiluted effects of natural selection and mutation, and extinction

**island biogeography:** the study of the distribution of living things, especially on islands

**iteroparity:** the condition of an organism that has more than one reproductive cycle in a lifetime

**karst:** a landscape topography found in any bedrock with internal drainage. The solubility of the bedrock produces fissures, underground streams, caverns, and sinkholes.

**key species:** important and significant species

**keystone species:** those species whose impact on their community or ecosystems is disproportionately large relative to their abundance. Where keystone species can be identified and used for conservation planning, they may be able to serve as surrogates for some ecological processes or ecosystems of high ecological integrity.

**lentic:** refers to slow-moving or standing waters typically associated with a lake or pond

**life history:** the life history of an organism can be described in terms of its capacity for producing offspring, growth and development, age at sexual maturity, parental care, and longevity

**littoral:** of or relating to the shore of a body of water

**lotic:** refers to fast-moving or flowing waters typically associated with a stream or river

**macroalgal:** of or relating to a nonvascular plant that can be seen with the naked eye

**maritime climate:** climatic conditions under the influence of an adjacent ocean

**mesic:** damp, moist, well-drained

**microclimate:** the climate within a small, distinct area, such as a forest or watershed, or an even more restricted space, such as a swale or cave

**Native allottee:** an Alaska Native who received title to a land parcel conveyed pursuant to the 1906 Alaska Native Allotment Act

**necropsy:** examination of an animal carcass to determine or confirm cause of death

**nongame species:** wildlife species that are not commonly hunted, trapped, or fished except by subsistence users

**nonindigenous species:** an alien species that is not native to a particular ecosystem. Alien species are also known as exotic, nonnative, or introduced, and the term noxious or nuisance species is sometimes used if the nonindigenous species can cause harm.

**nonvascular plants:** plants that lack the conductive tissue for the circulation of water and nutrients; moss and fungi

**optimum sustainable population:** population level targeted by the Marine Mammal Protection Act of 1972 as amended, which defines acceptable recovery at 60–100% of carrying capacity

**overharvest:** to allow harvest excessively, to the detriment of the resource

**pack ice:** solid sea ice; can be present only in winter, or as part of the permanent polar pack; the pack everywhere is floatable and breakable

**paleoarctic:** early or prehistoric Arctic

**PCB:** any of a family of industrial compounds produced by chlorination of biphenyl, noted primarily as an environmental pollutant that accumulates in animal tissue with resultant pathogenic or teratogenic effects

**peat:** partially decomposed organic matter

**pelagic:** of, relating to, or living in, open oceans or seas rather than waters adjacent to land or inland waters

**periglacial:** used to refer to geomorphic environments located at the periphery of past Pleistocene glaciers, where the landscape is dominantly influenced by frost action

**phenology:** the study of the impact of climate on the seasonal occurrence of flora and fauna and also the changing form of an organism and the way this affects its relationship with its environment

**physiochemical:** refers to the scientific analysis of the properties and behavior of chemical systems, including the earth's atmosphere and waters

**physiognomy:** outward appearance

**physiographic:** refers to natural features of the earth's surface, including land formation, climate, currents, and distribution of flora and fauna

**pingo:** an Arctic landform, shaped like a conical hill, that is created by the action of permafrost, contains a core of clear ice, and can be up to 75 meters high and 500 meters across

**piscivorous:** fish-eating

**piscicide:** any of a number of chemicals used to kill fish

**plant community:** any assemblage of plants found growing together

**polynya:** an area of open water surrounded by sea ice

**pristine:** remaining in a pure state; typical of earliest time or condition

**prostrate:** low growing; growing low to the ground

**protist:** a single-celled organism. Animal protists include naked and shelled amoebas, foraminiferans, zooflagellates, and ciliates.



**proxy species:** a species selected for management purposes that is intended to represent another species, group, or a habitat that will benefit from that management

**radiation:** species radiation refers to the diversification of a species or single ancestral type into several forms that are each adaptively specialized to a specific environmental niche; an adaptive process of species specialization

**refugia:** plural of “refugium,” a place that a species will go seeking safe harbor from disturbance, injury, predation, etc.

**rhizomes:** underground stems that often send out roots

**riparian:** pertaining to a river and the corridor adjoining it (i.e., its banks and floodplain)

**rodenticide:** any of a number of chemicals used to kill small mammals such as rats

**salinity:** containing salt

**scrub:** A straggly, stunted tree or shrub; woody vegetation predominantly of shrubs, ranging between 8 inches and 10 feet in height

**sedimentation:** the act or process of depositing sediment (the solid fragments of inorganic or organic material that come from the weathering of rock and are carried and deposited by wind, water, or ice)

**semelparity:** the condition of an organism that has only one reproductive cycle during its lifetime

**senescence:** the complex deteriorative processes that naturally terminate the functional life of an organ or organism

**septage:** liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar domestic wastewater treatment system

**shorefast ice or landfast ice:** the part of pack ice that is firmly frozen to the shore

**shrub:** a woody plant of relatively low height, having several stems arising from the base and lacking a single trunk; a bush; a woody perennial plant differing from a tree by its low stature and by generally producing several basal stems instead of a single bole, and from a perennial herb by its persistent and woody stem(s)

**soil creep:** the slow downhill movement of surface soil and debris due to gravity

**solifluction lobes:** a form shaped by the movement of soil downslope in a freeze-thaw environment

**spatial segregation:** the separation of individuals or species by space

**species:** a fundamental category of taxonomic classification consisting of related organisms capable of interbreeding. In this document, use of the word “species” includes species, subspecies and distinct populations.

**species pairs:** morphologically, ecologically, and genetically distinct populations of the same “species” that are sympatric during some or all of their life cycle. Examples include kokanee and anadromous sockeye; dwarf and normal Arctic char; limnetic and benthic threespine stickleback; and giant and normal pygmy whitefish. Such “populations” generally show reproductive segregation and function as independent “species,” even though by traditional taxonomic means they are not differentiated.

**speleologist:** a scientist who studies caves

**staging:** refers to areas where migratory birds congregate. The staging areas provide food that enables the birds to accumulate fat to fuel their long flights.

**stygobite:** aquatic cave dweller; an organism that exclusively inhabits underground habitats, such as caves and subterranean waters

**subalpine:** of, or pertaining to, the mountain areas between the foothills and the alpine slopes

**sub-Arctic:** the region just south of the Arctic Circle

**sublittoral:** of or pertaining to the region in a body of water between the shoreline and the edge of a steeper drop-off; the benthic zone extending from the low tide mark to the outer edge of the continental shelf (about 200 meters)

**subsistence:** under federal law, defined as “the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal family consumption; and for the customary trade, barter or sharing for personal or family consumption”

**substrate:** a surface, such as where an organism grows or is attached

**subtidal:** the portion of the marine environment that is below the area exposed during low tides but still within the photic zone, the area of the seabed influenced by light

**surface water:** all water occurring above ground. This includes wetlands, lakes, rivers, and streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, wet meadows, or ponds.

**sustainable or sustainability:** the ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time; also, use of resources in a manner that allows the resources to be replenished by natural systems in such a manner that they will never be exhausted

**taxon:** a taxonomic category or group, such as phylum, order, family, genus, or species. The plural form is “taxa.”

**taxonomic group:** a classification of organisms in an ordered hierarchical system that indicates their natural relationships. Each species (a dog, for example) belongs to a genus (*Canis*), each genus belongs to a family (Canidae), each family belongs to an order (Carnivora), each order belongs to a class (Mammalia), each class belongs to a phylum (Chordata), and each phylum belongs to a kingdom (Animalia).

**telemetry:** the science and technology of automatic measurement and transmission of data by wire, radio, or other means from remote sources to receiving stations for recording and analysis

**teratogenic:** pertaining to substances that are suspected of causing malformations or serious deviations from the normal type, which cannot be inherited

**thermokarst:** a periglacial landscape that has enclosed depressions caused by the selective thawing of ground ice associated with thermal erosion by stream and lake water

**traditional knowledge or traditional ecological knowledge:** For the purposes of this document, traditional knowledge is broadly defined to include everything from raw notes, photographs, audiotapes and videotapes, and interviews with Native elders to formal databases organized on computer software; it also includes similar information gathered from others with long histories of observation about species and habitats, such as commercial and recreational fishermen, guides and charter operators.

**troglobite:** terrestrial cave dweller

**troglophillic:** cave-loving, dark-loving

**trophic:** pertaining to food or nutrition

**trophic level or trophic relationship:** position in the food chain determined by the number of energy-transfer steps to that level: 1 = producer; 2 = herbivore; 3, 4, 5 = carnivore

**tundra scars:** damage to tundra vegetation and the underlying tundra substrate

**turbid or turbidity:** having sediment stirred up or suspended

**tussocks:** a clump or tuft of growing grass

**uplift:** an increase in land elevation; sources of uplift include tectonic activities or isostatic changes due to glacial melting and crustal unloading

**viable population:** a population of sufficient numbers and reproductive potential to maintain its existence over time in spite of normal fluctuations in population levels; also, the ability of a population of a plant or animal species to persist for some specified time into the future. Viable populations are populations that are regarded as having the estimated numbers and distribution of reproductive individuals to ensure that their continued existence is well distributed in a given area.

**Western science:** the hypothesis-based method of scientific inquiry taught in academia

**wildlife:** all species in the kingdom Animalia except those considered domesticated

**xeric:** having very little moisture, tolerating or adapted to dry conditions