

Environmental Best Management Practices for Urban and Rural Land Development

Glossary

June 2004



**BRITISH
COLUMBIA**

Ministry of Water, Land and Air Protection
Ecosystem Standards and Planning
Biodiversity Branch

Glossary

Note: Many of the definitions in the Glossary are derived from Dunster, J. and K. Dunster. 1996. *Dictionary of Natural Resource Management*. UBC Press, Vancouver B.C. Other sources include definitions from provincial and federal legislation and various provincial Ministry documents.

- Alien species:** Plants, animals and micro-organisms from one part of the world that are transported beyond their natural range and become established in a new area. They are sometimes also called "exotic," "introduced," "non-native," or "non-indigenous" species. Some alien species are also invasive species.
- Appropriately qualified professional:** A scientist or technologist specialising in a relevant applied science or technology including, but not necessarily limited to, agrology, forestry, biology, engineering, geomorphology, geology, hydrology, hydrogeology or landscape architecture, and who is registered in British Columbia with their appropriate professional organisation, and acting under that association's Code of Ethics and subject to disciplinary action by that association, and who, through demonstrated suitable education, experience, accreditation and knowledge relevant to the particular matter, may be reasonably relied on to provide advice within their area of expertise.
- Aquatic ecosystem:** Any body of water, such as a stream, lake, estuary or wetland, and all of the organisms and non-living components within it, functioning as a natural system.
- Biodiversity:** The variety of life on earth in all its forms including genes, species and ecosystems and the natural processes that link and maintain them.
- Bio-inventory:** A detailed site assessment that documents plant communities, aquatic and wildlife habitat values, aquatic and wildlife species presence (or likelihood of presence), sensitive ecosystems, rare ecosystems, rare species, adjacent land uses and threats, site stability and flood issues, other factors affecting lot layout, and where appropriate, potential habitat enhancement/protection opportunities. Terms of reference for a bio-inventory are included in Appendix C: Terms of Reference for a Bio-Inventory.
- Blue-listed species:** Includes any native species, subspecies or community considered to be Vulnerable (Special Concern) in British Columbia. These species are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed species are at risk, but are not Extirpated, Endangered or Threatened.
- Buffer:** An area of land that surrounds and protects a sensitive feature from the adverse effects of activities on, or encroachments from, adjacent land.
- Connectivity:** A qualitative term describing the degree to which natural ecosystems are linked to one another to form an interconnected network. The degree of interconnectedness and the characteristics of the linkages vary in natural landscapes based on topography and natural disturbance regime. Breaking of these linkages results in ecosystem fragmentation.
- Conservation covenant:** A voluntary, written legal agreement in which a landowner promises to protect their land in specified ways. The covenant is attached to the title of land and binds future landowners to the terms of the covenant. The presence of the covenant may lower taxes by changing the assessed value of the land.

Contaminated Site: An area of the land in which the soil or any groundwater lying beneath it, or the water or the underlying sediment contains: (a) a hazardous waste, or (b) another prescribed substance, in quantities or concentrations exceeding prescribed risk-based or numerical criteria or standards or conditions.

Critical habitat: In conservation biology, critical habitat is defined as part or all of an ecosystem occupied by a species, or population of that species, that is recognised as essential for the maintenance and long-term survival of the population. In the *Species at Risk Act*, critical habitat is defined as “The habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species” (*Species at Risk Act*, 2(1)).

Deleterious substance: Any substance that, if added to water, would degrade or alter the quality of the water so that it becomes damaging to fish or fish habitat, or becomes unsuitable for human consumption or any other purpose for which it is legally licensed (such as irrigation and livestock watering).

Ecological integrity: A continuum of characteristics that a landscape should possess. These include ecosystem health, biodiversity, stability and sustainability through the maintenance of structural and functional components of the system in perpetuity.

Ecosystem: The dynamic and interrelated complex of plant and animal communities and their non-living environment. All parts of an ecosystem, including physical, chemical and biological components are interconnected: that is, they affect and are affected by all other parts.

Ecosystem features: The physical components of the ecosystem (such as snags and large woody debris) that help maintain the diversity and processes associated with a healthy ecosystem.

Ecosystem functions: The physical, chemical and biological processes that keep an ecosystem operating. Examples include infiltration of surface water, evapo-transpiration and nutrient cycling.

Edge habitat: The point at which dissimilar plant communities (different vegetation types, successional stages or vegetative conditions) meet. Many species have adapted to the interface between the two habitats.

Environmentally sensitive area: A term often used loosely to mean a site or area that has environmental attributes worthy of retention or special care. A more exacting definition is: any parcel of land that already has, or with remedial action could achieve, desirable environmental attributes. These attributes contribute to the retention and/or creation of wildlife habitat, soil stability, water retention or recharge, vegetative cover and similar vital ecological functions. Environmentally sensitive areas range in size from small patches to extensive landscape features. They can include rare or common habitats, plants and animals. Environmentally sensitive areas also include hazard lands.

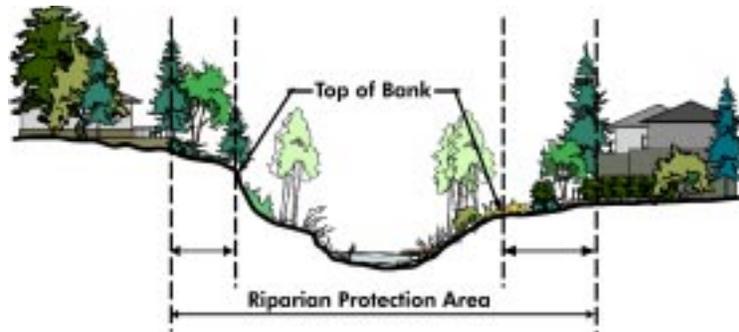
Endangered: A species facing imminent extirpation or extinction.

Erosion: A natural process of sediment movement as a consequence of water currents, rainfall runoff, or wind, which may be considered beneficial or detrimental, depending upon the associated environmental concerns.

- Estuary:** A partially enclosed body of water freely connected to the ocean, within which the seawater is diluted by mixing with freshwater and where tidal fluctuations affect stream water levels. The estuary is a dynamic system typified by brackish (mixed fresh and salt) water, variable and often high nutrient levels and by shallow water conditions often associated with marsh plants in upper tidal zones and eelgrass in lower tidal zones.
- Extinct:** A species that no longer exists anywhere in the world.
- Extirpated:** A species no longer existing in the wild in Canada, but occurring elsewhere. (A species listed as provincially extirpated no longer exists in the wild in British Columbia, but occurs in other parts of Canada or other parts of the world.)
- Feathering:** A method of partially trimming trees so that they are windfirm (better able to resist windthrow).
- Forests:** Groups of trees greater than 15 m in height (on average) of a minimum patch size of 0.5 ha (50m by 100m). Forests include not only live trees but also downed logs, understory plants, micro-organisms and soils that provide the fundamental structure of the forest. As forests age, their conservation value tend to increase due to the relative rarity of older forests in most parts of the province, because the diversity of habitats and species increases as the forest ages, and because many species rely on the specialised habitats that older forests provide.
- Fragmentation:** A process whereby large contiguous ecosystems are transformed into one or more smaller patches surrounded by disturbed areas.
- Grasslands:** Lands where the existing or potential natural vegetation is predominantly grasses, grass-like plants, and forbs (broad-leaved plants). Often called "steppes", these ecosystems may also contain scattered shrubs and a soil crust of lichens and mosses.
- Greenways:** Networks of linked greenspace that provide wildlife habitat and recreational opportunities. They include trails in some areas and no public access in others. Greenways are created as part of an integrated approach to land planning, balancing the needs of human communities and natural systems.
- Groundwater:** Water below the surface of the ground. This water may move through underground streams and seepages.
- Groundwater recharge:** The movement of rainwater down through the soil and into the groundwater and aquifers beneath. This groundwater provides a source of drinking water for many communities, and is also important for keeping many watercourses flowing during dry summer months.
- Habitat:** The natural home of a plant or animal within an ecosystem, which provides food and shelter and other elements critical to an organism's health and survival.
- Habitat refuge:** A small patch of habitat that provides food, shelter and/or other needs for wildlife. It may include human-modified ecosystems. They are not generally large enough to maintain the genetic diversity of a population.

- Habitat reservoir:** A large area of relatively natural habitat that has sufficient size and ecological integrity to support a range of native species, including species that need interior habitats. The size of habitat reservoir depends on the species being managed for. Habitat reservoirs are often hotspots of biodiversity in or near disturbed urban and rural landscapes.
- Hazard lands:** Lands that may be subjected to terrain hazards (flooding, landslides, debris flows, avalanches, etc).
- Hibernaculum (Plural: hibernacula):** Sheltered place where an overwintering animal rests, or a den where snakes hibernate.
- Hydrology:** The science of water, its properties and movement (water cycle) over and under land surfaces.
- Impervious surfaces:** Surfaces that prevent water from going into the ground, such as roofs, roads, parking lots and compact soils.
- Integrated pest management:** A decision making process that uses a combination of techniques to suppress pests and that must include, but is not limited to, the following species:
- planning and managing ecosystems to prevent organisms from becoming pests;
 - identifying potential pest problems;
 - monitoring populations of pests and beneficial organisms, pest damage and environmental conditions;
 - using injury thresholds in making treatment decisions;
 - reducing pest populations to acceptable levels using strategies that may include a combination of biological, physical, cultural, mechanical, behavioural and chemical controls;
 - evaluating the effectiveness of treatments
- Interior habitat:** A point where edge effects no longer influence environmental conditions within an ecosystem. The effects usually involve light intensity, temperature, wind, relative humidity and snow accumulation and melt. In a forest ecosystem, edge habitat is often considered to extend at least 200 m and for some species up to 400 m from the edge of the forest, so very large patches are needed before 'interior habitat' is present.
- Invasive species:** Plants, animals and micro-organisms that colonise and take over the habitats of native species. Most invasive species are also alien (non-native) to the area, and can become predominant because the natural controls (predators, disease, etc.) that kept their populations in check in their native environment are not found in their new location.
- Islandisation:** The process by which disturbance results in an ecosystem becoming isolated from surrounding ecosystems. The remnant ecosystem becomes an 'island' in a sea of development.
- Ladder fuels:** Fuels that provide vertical continuity between ground fuels and the crowns of trees, contributing to the ease of a tree igniting.
- LEED™:** The LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.

- Marine sensitive zone:** Marine-sensitive zones (MSZs) include herring spawning areas, shellfish beds, marsh areas, existing aquaculture sites, juvenile salmonid rearing areas, and adult salmon holding areas. For the purposes of this document, marine sensitive zones refer primarily to estuaries and their foreshore areas.
- Municipal solid waste:** (a) Refuse that originates from residential, commercial, institutional, demolition, land clearing or construction sources, or (b) refuse specified by a manager to be included in a waste management plan.
- Naturescape:** A way of restoring, preserving and enhancing wildlife habitat in urban and rural landscapes by providing wildlife habitat in our homes and gardens. See the [Naturescape](#) website for details.
- Old fields:** Altered ecosystems, in places where agriculture once occurred but that have not been actively farmed for many years. Old fields provide important habitats for wildlife such as raptors (eagles, owls and hawks) that feed on their rich small mammal and bird populations (voles, mice, etc.). To maintain their importance as habitat, old fields may require some maintenance such as mowing, removal of invasive species, or brush cutting if succession to shrubs and trees is not desired.
- Pesticide:** A micro-organism or material that is represented, sold, used or intended to be used to prevent, destroy, repel or mitigate a pest, and includes
- (a) a plant growth regulator, plant defoliator or plant desiccant,
 - (b) a control product under the *Pest Control Products Act* (Canada), other than a device that is a control product, and
 - (c) a substance that is classified as a pesticide by regulation.
- Plant community:** A unit of vegetation with a relatively uniform species composition and physical structure. Plant communities also tend to have characteristic environmental features such as bedrock geology, soil type, topographic position, climate, and energy, nutrient and water cycles.
- Red-listed species:** Includes any indigenous species, subspecies or plant community that is Extirpated, Endangered, or Threatened in British Columbia. Extirpated species no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered species are facing imminent extirpation or extinction. Threatened species are likely to become endangered if limiting factors are not reversed.
- Remediation:** “Remediation” covers all stages of contaminated site management from preliminary investigations, through implementing remediation procedures, to final monitoring.
- Restrictive covenant:** A covenant between the landowner and the Province of British Columbia (and/ or local government), which restricts certain activities that may occur on that land. The covenant is registered against property title under section 219 of the *Land Title Act*.
- Riparian ecosystem:** A terrestrial ecosystem where the vegetation complex and microclimate conditions are the product of combined presence and influence of perennial and/or intermittent water, associated high water tables, and soils that exhibit some wetness characteristics. The riparian ecosystem is influenced by, and exerts an influence on, the associated aquatic ecosystem.



Riparian protection area: The area adjacent to a stream that may be subject to temporary, frequent or seasonal inundation, and supports plant species that are typical of an area of inundated or saturated soil conditions, and that are distinct from plant species on freely drained adjacent upland sites because of the presence of water.

Sediment: Material carried in suspension by a flowing body of water which will ultimately settle to the bottom as water velocity decreases.

Soil morphology: The form and structure of the soil, including its mineral and biological (dead organic matter) content.

Special concern: A species that is particularly sensitive to human activities or natural events but is not an endangered or threatened species should this be linked back to 'blue-listed/threatened'?

Special wildlife: Wildlife species that have been identified in the British Columbia Wildlife Act, or that have been identified by Ministry of Water, Land and Air Protection as being of regional concern.

Species at risk: A species that has been defined as 'at risk' by either the federal or provincial government.

- Federally listed: The federal Committee on the Status of Endangered Wildlife in Canada (COSEWIC) maintains a list of species listed as extirpated, endangered, threatened or of special concern. These species are protected under the *Species at Risk Act*.
- Provincially ranked: The British Columbia government maintains a ranking of species considered to be "red-listed" and "blue-listed" in this province.

Stream: A natural watercourse or source of water supply, whether usually containing water or not, ground water, and a lake, river, creek, spring, ravine, swamp and gulch.

Terrestrial herbaceous: Ecosystems that are dominated by herbaceous vegetation, with some shrubs and low trees, often interspersed with bare rock outcrops especially on steeper terrain. They are typically on a smaller scale than grasslands, and include natural meadows, grassy or mossy hilltops and rocky outcrops. They are typically south facing, characterised by shallow, rapidly draining soil conditions and exposure to light and heat.

Threatened: A species likely to become endangered if limiting factors are not reversed.

Top of bank: The points closest to the natural boundary (or high water mark) of a watercourse where a break in slope occurs such that the grade beyond the break is flatter than 3 (horizontal) to 1 (vertical) for a minimum of 15 metres measured perpendicularly from the watercourse. Small slopes beyond the initial break in slope that are steeper than 3:1 but are less than 1 metre in height can be included in the determination of the 15

metre distance from the top of bank. Where banks are not well defined (e.g. in the case of lakes, wetlands or ponds), the top of the bank is equivalent to the natural boundary or seasonal high water mark. See also [Riparian Protection Area](#).

- Vernal pool:** A temporary body of freshwater that is filled by spring rains and snowmelt, only to dry up during the hot, dry summer months. Many vernal pools are filled again by autumn rains, and may persist throughout the winter.
- Wetland:** Land that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, fens, vernal pools and estuaries.
- Wildlife:** Any wild organism including wild mammals, birds, reptiles, amphibians, fishes, invertebrates, plants, fungi, algae and bacteria.
- Wildlife corridor:** A travel corridor for wildlife. This ranges from very wide, natural corridors for large mammals, to 'sky corridors' that offer a safe flight path between feeding and resting places for birds, to smaller man-made corridors (such as urban trails) that provide safe passage for smaller creatures. These corridors also provide year-round habitat for less mobile species.
- Wildlife Management Area:** Land that has been designated as a wildlife management area under the B.C. *Wildlife Act*.
- Wildlife trees:** A standing live or dead tree with special characteristics that provide valuable habitat for the conservation or enhancement of wildlife. Characteristics include large diameter and height for the site, current use by wildlife, declining or dead condition, value as a species, valuable location and relative scarcity.
- Windthrow:** A tree or trees uprooted or broken off by the wind. Also known as blowdown.
- Woody debris:** Sound or rotting logs, stumps or large branches that have fallen or been cut and left in the woods or water; or trees and branches that have died but remain standing or leaning. These provide cover for small animals and their predators (both fish and wildlife).
- Xeriscaping:** A landscaping approach using plant species that are tolerant of drought conditions.
- Yellow-listed species:** All species not included on the British Columbia Red or Blue lists. Some of these yellow-listed species are considered to be of conservation concern because they have a small range or low abundance in the province, because they have shown provincial declines, or there are perceived long-term threats.