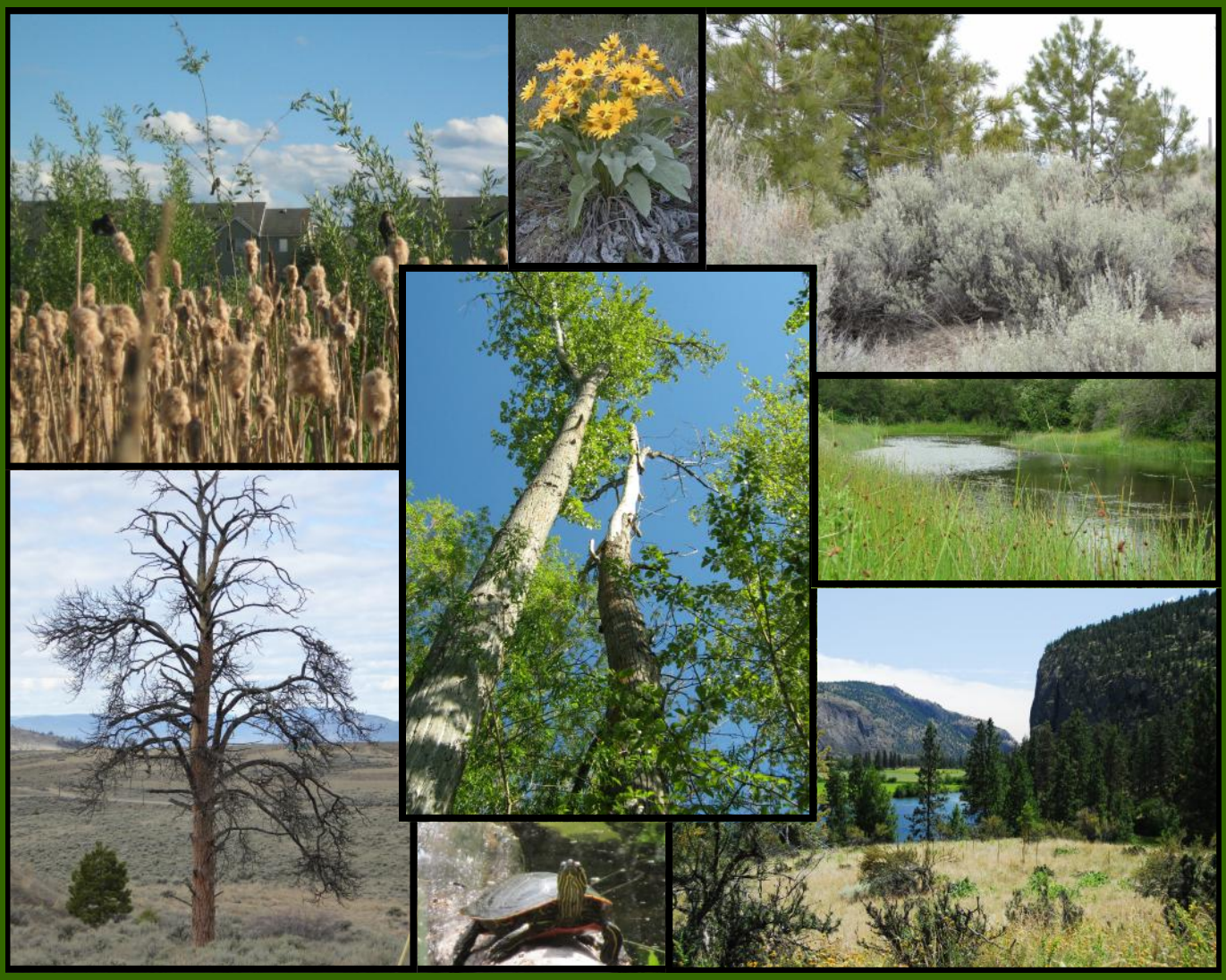
Sensitive Ecosystems and Features in the Okanagan Region



It is important for all of us to do our part in preserving sensitive ecosystems and the biodiversity around us. We all play a role in maintaining healthy, livable communities.

Okanagan Sensitive Ecosystems and Features

The Okanagan region contains three of the four biogeoclimactic* zones of conservation concern in BC. These natural areas are dominated by bunchgrasses, ponderosa pine and Douglas fir plant communities that are endangered provincially or at high risk of extinction; the majority of these communities are within the valley bottoms where we live, work and play. These low elevation areas also support a large percent of the species at risk and the Okanagan region also supports some of the greatest diversity and the largest number of breeding bird species in British Columbia.

As a landowner or land manager your stewardship of the land plays an important part in determining the health of biodiversity in our region. Biodiversity refers to the variety of life in all its forms and the ecosystems and processes that link them together.

Land development modifies the original ecosystems and fragments the landscape into smaller pieces. These actions impact how ecosystems function and how wildlife are able to move to safely and meet their daily needs for food, cover and shelter. Some species range over large areas while others spend their whole life in a very small area.

By developing your land in a manner that reduces those impacts and managing it carefully you can help retain important natural features on the land and maintain the functions of those ecosystems in which we reside. Collectively, landowners and land managers can make a difference to the health of our region.

Biodiversity not only provides us personal opportunities for recreation, spiritual renewal, cultural pursuits and experiences in nature; it is also linked to important ecological services like clean water, clean air, regulated climate and food resources upon which we depend.

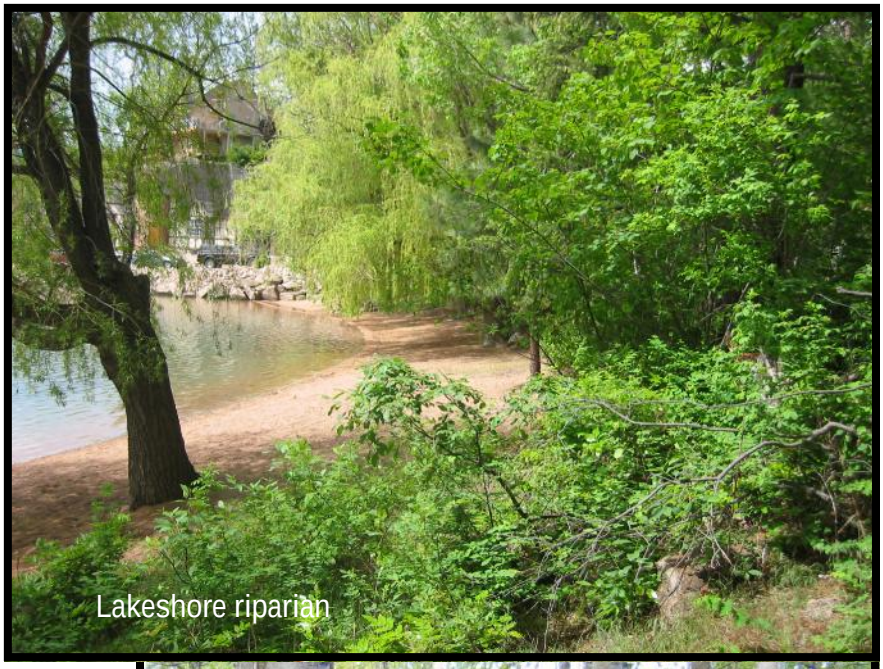
* A Biogeoclimactic zone is a geographic area having similar patterns of energy flow, vegetation and soils as a result of a broadly homogenous macroclimate.

Riparian Ecosystems

Riparian ecosystems are influenced by water and can vary from several meters to several hundred meters in width. They are rich plant communities that link water to the land, are high in biological diversity and provide an important migratory corridor for many species. Riparian zones are also a source of food, water and cover for a multitude of species, and they are extremely important features in dry areas like the Okanagan region. The next few pages show a number of the specific types of riparian habitats found in the region.

Rivers, Streams, Creeks and Shorelines

The complex relationship between streambed, water, soil, trees, shrubs, and understory directly influences the stream structure and provides fish and wildlife habitat. Riparian areas along streams rivers and lakes are biologically diverse and extremely productive; providing habitat and wildlife corridors for terrestrial and aquatic species.

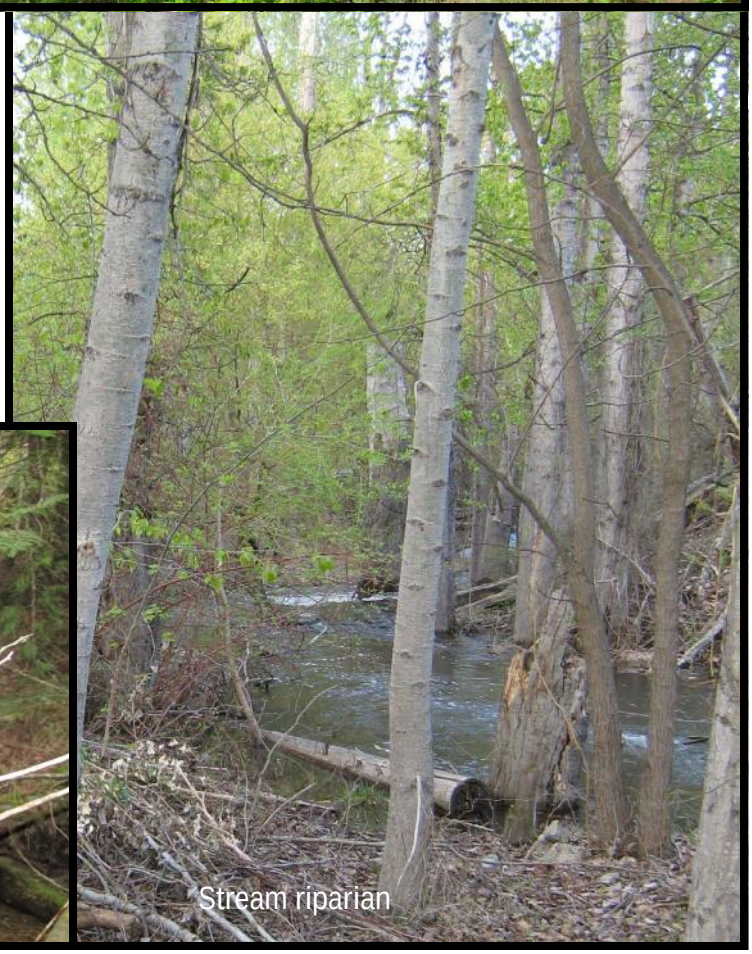

Lakeshore riparian

Stream riparian communities moderate water temperatures; provide a source of nutrients and organic matter to streams; and establish root systems that minimize erosion by stabilizing soils and stream banks/lakeshores.

Continued introduction of large woody debris from fallen trees is an important component of healthy streams and important for fish habitat.

Streamside vegetation also protects water quality by providing a buffer from the sedimentation and pollution in surface runoff. They also moderate stream runoff and rainwater infiltration into the groundwater.


Stream riparian


Stream riparian

Ponds and Wetlands

Ponds and wetlands form where the water table is at, near, or above the surface of the ground, or where the land is saturated for long periods such that soil changes and growth of water-tolerant vegetation occur. Some wetlands have water above the surface all year whereas others dry out during the summer. They form a critical part in the water cycle. Some of the wetlands in the Okanagan region are highly alkaline and shores may be crusted with salt or alkali.


Pond

Only 15% of the original wetlands remain in the Okanagan


Wetland

Wetlands are almost as diverse as the species they support. In the Okanagan region some of those wetlands include shallow ponds, marshes, swamps, and wet meadows. They may also be located in shallow shoreline areas along lakes and streams. Wetlands have very high biodiversity and they act as natural filters, cleaning water before it returns to our rivers, lakes and streams.

Wetlands also act as natures sponge absorbing large amounts of water from rainfall, which reduce flood risks. For more information on wetlands and how to protect them see Wetlands in British Columbia: A Primer for Local Governments.

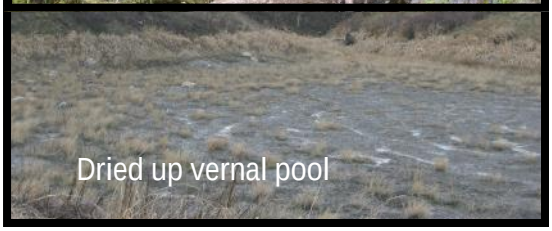
Vernal Pools and Groundwater Seeps

Vernal pools and seeps are also considered wetlands; however, they are often undervalued or not recognized as important habitats because they may only retain water through part of the season. They can occur in forests and grasslands and may or may not show typical wetland/riparian vegetation. They are often home to rare species that have adapted to the wet /dry cycle such as the Spadefoot Toad which can accelerate its development from tadpole to toad as the pond dries up.


Groundwater seep


Groundwater pool


Vernal pool


Dried up vernal pool

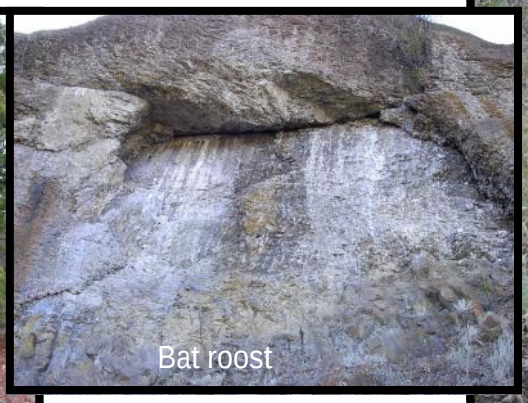
Rocky Areas

Rocky areas and other sparsely vegetated areas have been identified as ecologically at risk. On warm aspects features with crevices or deep talus rock on warm slopes provide critical overwintering areas or “hibernacula” for snakes and lizards, many of which are species at risk. Inaccessible crevices and small caves in large bedrock provide roosting and breeding habitat for bats and ledges provide nesting areas for a variety of birds.

For more information on some of the species that use these areas and the appropriate best management practices see Guidelines for Amphibian and Reptile Conservation during Urban and Rural Land Development in British Columbia (2014).


Rock outcrop/sparsely vegetated


Talus rock


Bat roost

Bats are important to controlling nocturnal insect populations.

Aspen Tree Copse

Aspen generally occur in moist depressions in grassland areas. They also occur in seepage areas on slopes within a coniferous forest. Both these aspen communities are sensitive due to the seepage and moist habitats associated with them.


Aspen tree copse

Aspen tree copse ecosystems are structurally diverse and provide cover, food and nesting for many of our species and are particularly important for cavity nesters such as owls, woodpeckers and songbirds.


Woodpecker cavities in aspen


Nest in copse shrubbery

Grassland Ecosystems

Areas where grasslands occur are generally too hot and dry for forests to establish. They are also favoured in areas where frequent low intensity fires have historically occurred. Grasslands are dominated by bunchgrasses and scattered forbs, such as Arrowleaf Balsamroot which is seen in flower every spring but they also include small areas of shrub land dominated by snowberry and rose which establish on moister areas.


Grassland

Grasslands are recognized as one of BC's most threatened ecosystems covering less than 1% of the provincial land base. Many of our grasslands are disturbed, with an estimated 35% impacted by invasive plant species. In this region we are blessed with a large proportion of BC's grasslands and the unique species that live there.


Arrowleaf Balsamroot in bloom

Sagebrush Steppe Grasslands

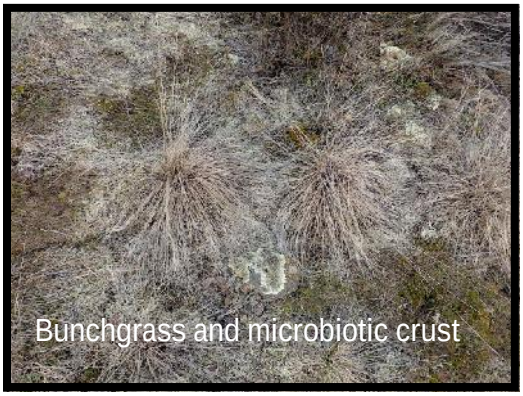
These plant communities occur on similar sites to grasslands where the conditions are too warm and dry for trees to establish. In contrast to grasslands, sagebrush shrub cover is greater and these plant communities tend to occur on slopes less than 25% with deeper soils.


Sagebrush Steppe

Antelope Brush

Antelope-brush needle-and-thread are a rare and endangered type of shrub steppe grassland. It is mainly found in the southern Okanagan but there are a few sites reaching as far north as the central Okanagan.


Antelope Brush in bloom


Bunchgrass and microbiotic crust

Microbiotic Crust

Much of the diversity in grasslands is contained in the microbiotic crust that covers the soil surface between plants. This biological soil crust consists of lichens, mosses, algae, and bacteria.

The crusts slow evaporation, safeguard against wind and water erosion and contribute nutrients through nitrogen fixation. This crust is extremely sensitive to disturbance by livestock, people and recreational pursuits such as biking and it is a key component of healthy grassland ecosystems.

Vegetated Dry Gullies

Vegetated dry gullies may contain seepage during wetter periods. They provide structural diversity within our grassland ecosystems and can be a mixture of both coniferous, deciduous and shrub species. These gullies provide cover, food and nesting habitat and like riparian ecosystems they often provide cross-elevational corridors for wildlife.


Grassland vegetated dry gully

Dens, Animal Burrows, and Ground Nests


Unknown animal burrow

A number of species located within the region nest or burrow into the ground. For example, the American Badger, Western Painted Turtles, Spadefoot and a variety of snakes either dig burrows or use burrows made by other species.


Burrowing Spadefoot

Some like the Spadefoot use these burrows daily and for hibernation, others like the Western Painted Turtle may nest and their young overwinter in the nest.


Western Painted Turtle nest

Other species like the Killdeer, Meadowlark and other birds are ground nesters.


Killdeer nest


American Badger burrow


Young badgers in burrow

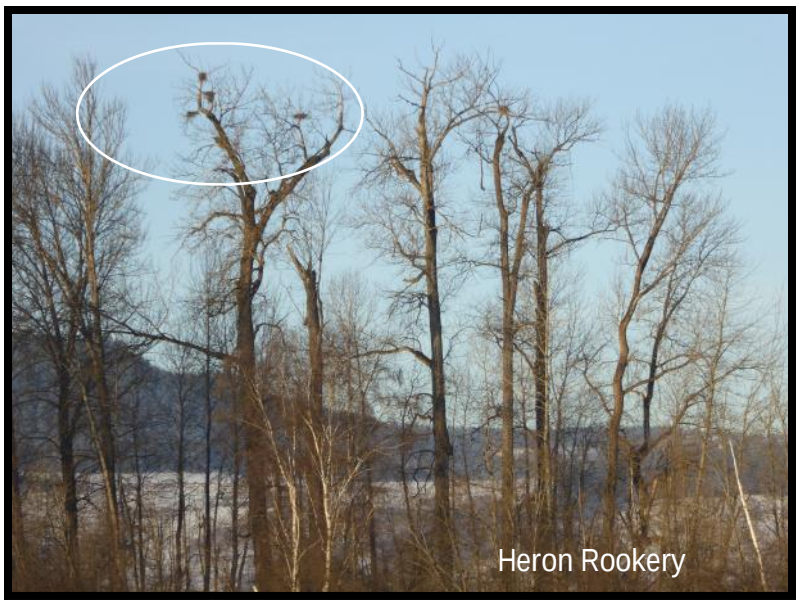
Raptor and Heron Nests

Raptors and herons are recognized as an integral part of B.C.'s ecosystems and are legally protected. Conflicts between habitat requirements of these species and urban and rural developments have been frequent because the valleys and shorelines that are ideal for human settlement are also important habitat. If properly managed, herons and many species of raptors can coexist with people in human-modified landscapes if certain habitat needs are met.


Coopers Hawk


Osprey Nest

For more information on protecting herons and their rookeries see Develop with Care Fact Sheet 11.


Heron Rookery

For additional information on protecting raptors see Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia 2013 and Develop with Care Fact sheets 10, 12 and 13.

Wildlife trees

Wildlife trees can be either live or dead trees with cavities, hollows and/or branches that wildlife use for nests, nurseries, storage areas, foraging, roosting and perching. Over 90 species of plants and animals in BC use wildlife trees as habitat. Wildlife may create their own cavities or use ones that were formed naturally or established by other species. The best trees are tall and have a large trunk (> 60 cm) but smaller trees both live and dead are used. When they decay and fall to the ground they provide large woody debris necessary for other species.

For more information on protecting and managing wildlife trees see Wildlife Trees of British Columbia.

Recognize that safety can also be a concern with some wildlife trees. For more information about potentially hazardous trees and how to manage them see Best Management Practices for Tree Topping, Limbing and Removal in Riparian Areas. Worksafe BC also has information about Dangerous Tree Risk Assessment .


Cottonwood wildlife tree

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