

Riparian Zone Ecosystem

Information Sheet

Environmental Protection and Stewardship

What are riparian zones?

Riparian zones are the areas surround lakes, estuaries, ponds, streams and rivers. They are transition zones linking aquatic and terrestrial environments. They feature moist to saturated soils, water-loving plants and high levels of biodiversity.

Riparian areas can be found throughout Greater Victoria, alongside many of our region's bodies of water and waterways. Riparian areas may be narrow — vegetation growing along the side or edge of a creek or lake, or broad — large sections of wetlands, like Swan Lake Nature Sanctuary or Rithet's Bog.

It is estimated that 80% of wildlife species depend on riparian areas in whole or in part.



Importance of riparian zones.

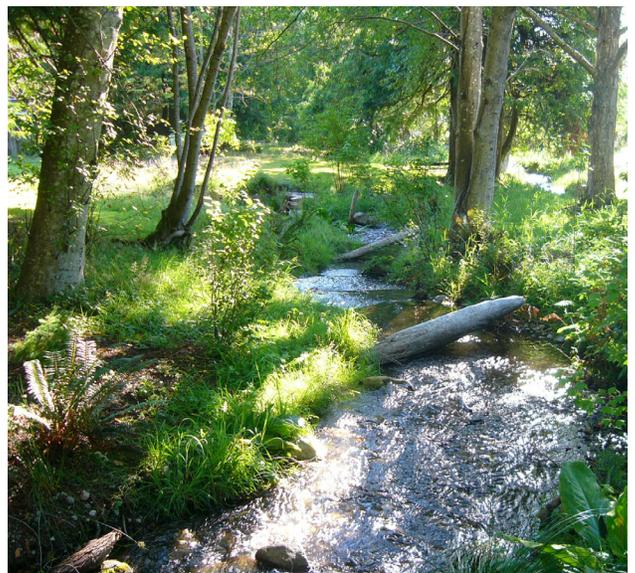
Riparian zones provide critical sheltering, feeding, and rearing habitats for many wildlife species. In addition to habitat and biodiversity value, riparian zones provide a number of other essential ecosystem services such as:

- **Hydrological balance.** Riparian vegetation and soils slow and absorb water run-off and restore groundwater reserves, which can then hydrate streams and water bodies during dry periods.
- **Water purification.** Riparian plants filter excess nutrients and pollutants in water run-off.
- **Erosion control.** Root systems of riparian plants "glue" shoreline soil together to prevent erosion.
- **Flood mitigation.** Riparian zones buffer bodies of water from big influxes of run-off by absorbing excess water and mitigating flooding.
- **Thermal cover.** Trees and shrubs bordering and hanging over streams and lakes providing shade and cooling to moderate ambient temperatures.

Riparian zones support biodiversity.

Riparian zones are home to a wide diversity of plants and animals. You may find:

- Aquatic plants such as, rushes, sedges, cattails, skunk cabbage and pond lilies.
- Shrubs such as willows, red-osier dogwood, hardhack and salmonberry.
- Trees such as western red cedar, black cottonwood and red alder.
- Thousands of species of insects including mayflies, caddis flies, stonefly nymphs, water beetles, whirligig beetles, water striders and water boatmen.
- Crustaceans such as crayfish, copepods and amphipods.
- A wide variety of freshwater and anadromous fish (fish that migrate from salt to fresh water).
- Birds such as American bittern, great blue heron, northern pintail, northern harrier, short-eared owl, mallard, and red-winged blackbirds.
- Mammals such as mice, shrews, river otters, raccoons, squirrels and bears.



Threats to riparian ecosystems.

Riparian areas are threatened by expanding urban, agricultural and residential areas. Disruptions to soil, water flow and water quality will impact riparian areas. Riparian ecosystems are impacted by:

- **Stormwater runoff.** Impervious urban surfaces (e.g. roads, buildings, parking lots) can cause flooding and erosion in riparian areas and increase water pollution.
- **Pollution.** Vehicles, industries, household chemicals, fertilizers and sewage activities may introduce toxic chemicals that can harm plants and animals. Introducing excess nutrients (e.g. through fertilizers or pesticides), can cause algal blooms and decrease oxygen levels in the water.
- **Construction activities.** Construction can cause sediment to be washed into water bodies where it can smother fish spawning beds and injure aquatic life.
- **Shoreline modification.** through hardening (i.e. with protective walls) and vegetation removal around lakes, streams and wetlands reduces riparian habitat.
- **Invasive species.** Reed canary grass, purple loosestrife and yellow flag iris are examples of invasive species that change riparian ecosystems by out-competing native plants. This often results in lower quality habitat and food, and clogged water ways.



Invasive purple loosestrife



Invasive yellow flag iris

We all have a role to play in protecting the environment.

There are simple ways that you can help riparian ecosystems.

1. Learn about riparian zones and how to recognize them.
2. When visiting riparian areas, take care to not disturb vegetation and wildlife.
3. Take Action.
 - Preserve riparian areas on your property by maintaining a buffer of native vegetation along streams and shorelines.
 - Remove invasive species from your yard.
 - Reduce or eliminate fertilizer and pesticide use in your garden. Substances from your property can be washed into distant water bodies.
 - Garden with native plants.
 - Keep hazardous substances (e.g. motor oil, paint, pesticides, and solvents) out of riparian areas by disposing of them at an appropriate facility.
 - If you own a farm or keep livestock such as chickens, horses, sheep or cattle, learn how you can protect riparian area through sustainable agricultural practices.
 - Volunteer with groups that pull invasive species in parks and natural areas.

Visit crd.bc.ca/biodiversity for more resources.