RIPARIAN ECOSYSTEMS

Coniferous, Deciduous, Mixed Forests, Shrubs and Grasses

Fact Sheet #5
What are Riparian Ecosystems?

Riparian areas are the link between land and water. They occur adjacent to water bodies, where distinct soil and plant communities are supported by high soil moisture and light conditions. Features within a riparian ecosystem can be structurally diverse consisting of snags, downed logs, or multi-layered/uneven-aged canopy. This adds to the diversity of habitat niches, which a wide range of wildlife species take advantage of. Riparian areas function as important wildlife corridors as well as habitat reservoirs. The type of vegetation present varies from grasses to mature forests depending on the dynamics of the adjacent waterbody and the level of disturbance.

Where are they?

Riparian areas are found throughout the Greater Vancouver Region. They are associated with open water ecosystems such as ponds, lakes, rivers, streams and sloughs.

Status

Riparian ecosystems have been greatly impacted by human activity and population growth. In Greater Vancouver there are thousands of aquatic systems with adjacent riparian areas, many on private land which are not effectively protected. Rivers and streams alone in Greater Vancouver have been identified as threatened or endangered due in part to loss or impacts to this critical ecological feature.

Threats

Riparian corridors may be fragmented by road construction or surrounding development. Mowing or removal of riparian vegetation in parks or along private property and along ditches in agricultural areas can have negative impacts on the function of riparian areas and on the health of adjacent aquatic ecosystems. Channelization which is done to reduce flooding risk in lowland areas is the straightening of streams through armouring or engineering. It often leads to complete elimination of riparian vegetation and the services they provide.

- Urban development
- Channelization
- Invasive species
- Pollution, garbage and yard waste dumping
- Agricultural activities

Even though grass and herb dominated riparian areas may provide significantly less structural diversity they still have habitat value for a variety of pollinating insects and small mammals, in turn a food source for many other species.
Nature’s Services

- Help control erosion of stream and river banks, stabilization for flood risk.
- Regulates water temperature
- Filters surface runoff pollutants from entering watercourses.
- Produces oxygen, absorb carbon and air contaminants
- Provides habitat for wildlife
- Provides food and cover for fish species

Regional Indicator Checklist

- Red-legged Frog (*Rana aurora*)
- Tailed Frog (*Ascaphus truei*)
- Pacific Treefrog (*Hyla regilla*)
- Northwestern Salamander (*Ambystoma gracile*)
- Red-backed Salamander (*Plethodon vehiculum*)
- Common Garter Snake (*Thamnophis sirtalis*)
- American Bittern (*Botaurus lentiginosus*)
- Great Blue Heron (*Ardea herodias*)
- Northern Pintail (*Anas acuta*)
- Cooper’s Hawk (*Accipiter cooperii*)
- Rufous Hummingbird (*Selasphous rufus*)
- Yellow Warbler (*Dendroica petechia*)
- Blackthroated Gray Warbler (*Dendroica nigrenscens*)
- Townsend’s Warbler (*Dendroica townsendi*)
- Spotted Towhee (*Pipilo maculatus*)
- River Otter (*Lontra canadensis*)
- Black Bear (*Ursus americanus*)
- Anise Swallowtail (*Papilio zelicaon Lucas*)
- Orchard Mason bee (*Osmia lignaria*)
- Bumble bee (*Hymenopter Apidea*)
- Western Trillium (*Trillium ovatum*)
- Devil’s Club (*Oplopanax horridus*)
- Western Flowering Dogwood (*Cornus nutallii*)
- Cascara (*Rhamnus purshiana*)
- Red Huckleberry (*Vaccinium parvifolium*)
- Skunk Cabbage (*Lysichiton americanum*)

Species relying on both water and land habitats during their lifecycle greatly benefit from the shelter, cool shade and foraging opportunities that riparian vegetation provides. Aquatic bird species and songbirds also benefit from this sheltered travelling corridor because they are located close to required water and food resources.

River Otter

This slender, streamlined mammal with webbed feet and a long furry tail requires freshwater and riparian habitats with abundant food sources. They are commonly found in or along forested rivers, ponds, lakes, and along the coast. They breed in abandoned dens made by muskrats or beavers.

River Otters are carnivores that eat amphibians, crayfish, mammals, birds, and fish. These predators are near the top of the food chain, pollutants and toxins found in their prey accumulate in their bodies making them an indicator of the health of our aquatic environment.

Ensuring riparian ecosystems remain healthy and intact is integral to the health of the aquatic ecosystems the otter depends upon for food.

Townsend’s Warbler

This small neo-tropical migrant has breeding grounds throughout British Columbia. They winter from southern California, southwestern Arizona and Florida, northern Mexico, and the southern Gulf coast south to the Amazon Basin of Brazil and Peru. They have been recorded as late as November 24 on the coast. They are a
small, active, insect-eating bird with a thin, pointed bill and olive colouration with black streaks.

Nesting habitat can be found in stands of deciduous vegetation like cottonwood, maple and alder, along forest edges and thickets. They nest in an open cup often midway up in tree canopies. Non-nesting habitat is similar to nesting habitat. Riparian ecosystems are important for conservation of this species during its summer breeding stay.

The Townsend’s warbler is an annual visitor that depends on wise stewardship of our local riparian areas to ensure it has safe nesting and breeding areas.

Optimal form & function

Adjacent Forests 300 ha in size, forested riparian buffers on either side of the watercourse should be a minimum 30 m wide (possibly greater than 50 m). mature trees with mixed age understory preferred. Open space and a moist environment for foraging. Edges for roosting and perching. Snags and coarse woody debris required. For inundated or seasonally flooded areas water < 50 cm deep with groves of alder and willow that are > 0.4 ha in size with mixed shrub mosaics and thickets. Trees > 30 years old are preferred. Moderate canopy closure, emergent vegetation along the banks along with coarse woody debris, logs and talus.

What can we do?

- Help preserve the integrity and health of riparian areas.
- Do not mow or remove native vegetation along streambanks.
- Do not introduce invasive plant species such as silver nettle or English ivy.
- Help out in riparian rehabilitation by volunteering your time through local stewardship initiatives.
- Consider an ecological gift or tax credit by placing a covenant if you have riparian areas on your property.

We depend upon healthy functioning riparian ecosystems to maintain the integrity of our aquatic environment and the many resources and services they provide.

More detailed information on this ecosystem and associated species can be obtained from the report: “Conserving Biodiversity in Greater Vancouver – Indicator Species and Habitat Quality”. Available from the Ministry of Water, Land & Air Protection at: http://wlapwww.gov.bc.ca/sry/fwh/GBEI/index.htm

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