

BIODIVERSITY

IN GREATER VANCOUVER

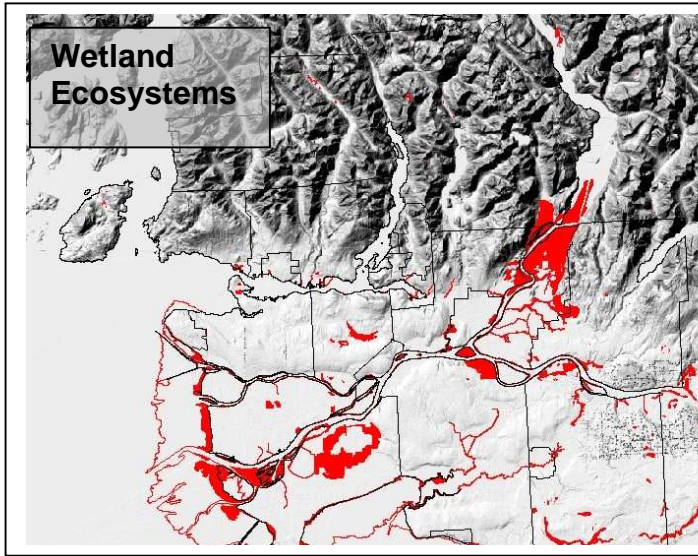


Fact Sheet #1



BIODIVERSITY CONSERVATION STRATEGY FOR THE GREATER VANCOUVER REGION

GEORGIA BASIN ECOSYSTEM INITIATIVE



Ministry of Sustainable Resource Management-Baseline Thematic Mapping. *Data may not be complete for some areas

What are Wetland Ecosystems?

Wetlands are areas that are covered with water for all or part of the year. Swamps, marshes, bogs, and vernal pools are common in the Greater Vancouver Region.

Swamps and marshes are wet nutrient rich habitat, found near streams, creeks, lakes, and ponds. Sedges, grasses, rushes, and reeds characterize swamps and marshes.

Bogs on the other hand are nutrient poor acidic wetlands dominated by peat. Bog vegetation includes low shrubs, sundews, cranberries, and tree species such as shore pine.

Vernal pools are temporary wetlands that are wet in the spring and dry in the summer. These moist conditions provide unique habitat for plant and wildlife communities.

Where are wetlands?

The largest bog in the Greater Vancouver Region is Burns Bog, located in Delta. It represents one of the few domed bogs in the world. Other major wetlands include Blaney Bog and Codd Island Wetlands in Pitt Meadows. Some of the most significant marshes can be found at Colony Farm and Minnekhada Regional Park in Coquitlam, Pitt Addington near Pitt Lake and Burnaby and Deer Lakes in Burnaby. Vernal pools are more difficult to locate due to their temporary nature,

Conserving Biodiversity in Greater Vancouver
Fact Sheet #1 – Wetland Ecosystems

but generally occur wherever seasonally wetted depressions occur. This important habitat be found throughout the Greater Vancouver Region.

Threats

- **Infilling due to development and agricultural activities.**
- **Invasive species, especially purple loosestrife.**
- **Pollution and runoff from pesticides and fertilizers.**
- **Impacts to water table infiltration from disturbance to uplands or adjacent areas.**
- **Peat mining and removal of sphagnum for the gardening industry.**

Status

Wetland Ecosystems are threatened, not just in the Greater Vancouver Region, but nationally. Approximately 14% of Canada is covered in wetlands. These unique ecosystems are declining rapidly. British Columbia has a history of land conversion that has led to over 80% of wetlands being drained or filled for development or agricultural.

Nature's Services

- **Nature's kidneys - natural filtering system that helps purify water.**
- **Natural flood risk reduction - slows down runoff through storage and slow release.**
- **Produces oxygen and stores carbon and heat.**
- **Provides critical habitat for migratory birds and amphibians.**
- **Recreational opportunities for naturalist/birders.**



Regional Indicator Checklist

- **Red-legged Frog (*Rana aurora*)**
- **Northwestern Salamander (*Ambystoma gracile*)**
- **Pacific Treefrog (*Hyla regilla*)**
- **Common Garter Snake (*Thamnophis sirtalis*)**
- **American Bittern (*Botaurus lentiginosus*)**
- **Great Blue Heron (*Ardea herodias*)**
- **Northern Pintail (*Anas acuta*)**
- **Northern Harrier (*Circus cyaneus*)**
- **Short-eared owl (*Asio flammeus*)**
- **Rufous Hummingbird (*Selasphorus rufus*)**
- **Marsh Wren (*Cistothorus palustris*)**
- **River Otter (*Lontra Canadensis*)**
- **Townsend's Vole (*Microtus townsendi*)**
- **Cascara (*Rhamnus purshianus*)**
- **Round-leaved sundew (*Drosera rotundifolia*)**
- **Yellow Waterlily (*Nuphar luteum* spp. *Polysepalum*)**
- **Skunk Cabbage (*Lysichiton americanum*)**

Wetlands provide food, cover, shelter and breeding habitat for a wide diversity of plants and animals. Greater Vancouver's marshes are an important component for birds using the Pacific flyway for breeding, nesting, and wintering habitat. Predators such as otters, short-eared owls and blue heron highly dependent upon wetlands and adjacent ecosystems. In addition many amphibians are almost exclusively reliant upon wetlands for breeding. Smaller mammals also depend on wetland habitat for food and shelter.

Marsh Wren

This small brown non-migratory bird is commonly found in wetlands in the Greater Vancouver Region. Try visiting Boundary Bay, Burns Bog, or Colony Farm Regional Park to catch a glimpse of the marsh wren. They can be found in bulrushes, tall sedges, and mixed

vegetation consisting of shrubs, forbs, rushes, and grasses. Breeding habitat and non-breeding habitat are similar. These wrens feast on bugs and insects that are found in wetlands. The Marsh Wren's dependence upon wetland ecosystems has made their populations vulnerable as wetlands are converted for agriculture and urban development. The rapid spread of species such as purple loosestrife is also having impacts as it replaces the native sedges, rushes and grasses this species needs for nesting and foraging.



The marsh wren is a vibrant resident within our regional wetlands.

Round-leaved Sundew

The Round-leaved Sundew is found in low nutrient acidic bogs, fens and wet meadows at low to middle elevations throughout the region. To acquire the necessary nutrients the plant must ensnare insects and use them as a food source. Sticky tentacles help capture and digest their prey. They are not selective, ensnaring the very same insects that help pollinate them.

Like other bog plant species they are usually confined to sites that have a high water table or high precipitation, making them vulnerable to water table disturbances. They are also shade intolerant preferring the same exposed conditions often utilized by a rich variety of

other wildlife. Plant associations include Labrador tea, bog cranberry, blueberries, willows, St. Johnswort, sedges and mosses



This unique plant has evolved to exploit the nutrient poor conditions found in bogs.

Optimal form & function:

Wetlands at least 1400 ha in size, or smaller wetlands (from 0.5 ha in size) that are well-connected and within 500 m of each other, with dense emergent vegetation > 2 m tall. A 50:50 emergent vegetation:open water ratio. Permanent or long-lasting water 0.5-2 m deep with a sediment bottom, coarse woody debris and mudflats or flooded areas. Surrounding forests or grasslands 2500 ha in size. Close to forests and 3 yrs old (clearcuts) to 180 years old, or agricultural fields. Trees up to 50 m from water. Canopy closure 30-75% and 50-100% shrub cover.

What can we do?

- Recognize wetlands biological, economic, and intrinsic values.
- Help preserve the integrity and health of wetlands.
- Do not plant invasive plant species such as Purple Loosestrife and Japanese Knotweed.
- Look for alternatives to sphagnum moss such as coconut fibre for gardening.
- Help out in wetland restoration and conservation.



Wetlands take many shapes and forms but provide critical ecological reservoirs for unique assemblages of flora and fauna.

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/GBEL/index.htm>
Design & Text: Leah Efford, Douglas College IUE
Photo Sources: IUE, S. Barret, P. Zevit, Rob Rithaler, Charles Simenstad, Colin Parrish, J.A. Spindelow, Matt Goff, Doreen Lawson, Greg Lesley, Peter S. Weber, A. Wilson
Map: Ministry of Sustainable Resource Management
Layout & Editing by: Pamela Zevit, MWLAP-Surrey

Produced by: Douglas College Institute of Urban Ecology for: The Environmental Stewardship Division, Ministry of Water, Land & Air Protection – Lower Mainland Region, Surrey



The Biodiversity Conservation Strategy for the Greater Vancouver Region - Project Steering Committee: Environment Canada, Province of British Columbia, Greater Vancouver Regional District, BIEAP/FREMP