

Environmental Trends in British Columbia: 2007

Ecosystems



An ecosystem is a complex, interlinked system of living organisms and their environment. From the depths of the Pacific Ocean to the peaks of the Rocky Mountains, British Columbia has a multitude of ecosystems: seafloor, kelp beds, shorelines, estuaries, forests, grasslands, wetlands, lakes and rivers, mountain slopes, alpine meadows.

This ecosystem diversity is the result of complex geography and varied climate, and is why B.C. is home to more species than any other province in Canada.

Healthy ecosystems provide essential 'services' that people rely on: clean water and air, food and fiber production, pollination, waste treatment, climate regulation, protection from flooding and erosion and many other functions.

However, human activities have degraded, fragmented and even eliminated some ecosystems in B.C., making it more important than ever to establish protected areas, manage development activities and educate people on how to care for the remaining ecosystems.

The following indicators show the progress in protecting ecosystems and the status of some BC ecosystems.

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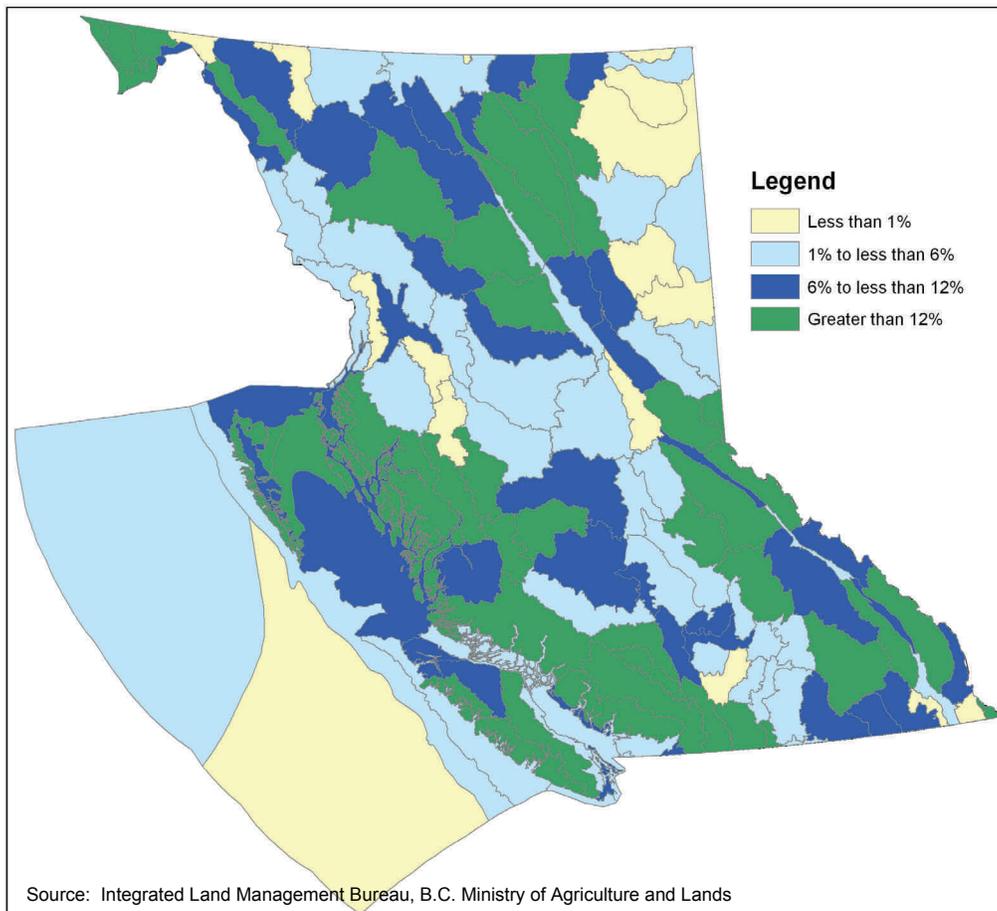
Protected areas in B.C.

Protected areas are parcels of land or water that are legally protected in British Columbia through a variety of designations such as national and provincial parks, bird sanctuaries, ecological reserves, recreation areas or protected marine areas to name a few.

Protected areas are designated for a variety of reasons such as the maintenance of ecosystem services, protection of biodiversity and natural features, contribution to human health and recreation, preservation of wilderness and/or contribution to the economy.

- As of August 2007, legally designated protected areas covered 13.4 % of the provincial land base. This is more than twice the amount designated in 1991 and is higher than the Canadian average of 9 %.
- Almost one-third of the 127 terrestrial ecosections have over 12 % of the area protected, compared with only one-sixth of the ecosections with 12 % protected in 1991.
- Marine ecosystems are the least represented in the protected areas system, with 7 out of the 12 marine ecosections having less than 5 % of each of their areas protected.

Percentage of ecosections protected



- Over half of the ecosections in B.C. have at least 6 percent of their land in protected areas (2007)

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Ecologically intact land in B.C.

Maintaining ecosystem processes and preventing species from going extinct requires attention to more than just the amount and location of protected areas.

To protect wildlife, an area must also be large enough to ensure species have adequate room to forage for food, find shelter and avoid predators.

In addition, roads and other linear developments such as seismic lines are a major cause of habitat fragmentation and may also indicate human activities that can have large impacts on ecosystems, such as industrial forestry, mining, agriculture and urbanization.

In this indicator, ecologically intact areas are defined as being more than 5 km from a road and over 2,000 ha in size.

- About 31 % of the land area in B.C. is intact. Only 8 % of the province is both protected and intact.
- The largest tracts of intact land are along the central and north coasts and in northwestern B.C. Protected areas in these regions are embedded in large tracts of intact land.
- About half of the intact land in the central and southern interior, the lower mainland and most of Vancouver Island is found in protected areas that are largely surrounded by roads and isolated from other intact areas. This is a concern because lack of connectivity between intact areas may leave native plants and animals more vulnerable to extinction.
- There is no intact land in the Taiga Plains ecoprovince, and the Boreal Plains ecoprovince has less than 1 % remaining. Both of these ecoprovinces are in north eastern B.C. where seismic lines fragment the landscape.

Ecologically intact areas and protected areas



Source: Integrated Land Management Bureau, B.C. Ministry of Agriculture and Lands

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Grassland habitats in the southern interior of B.C.

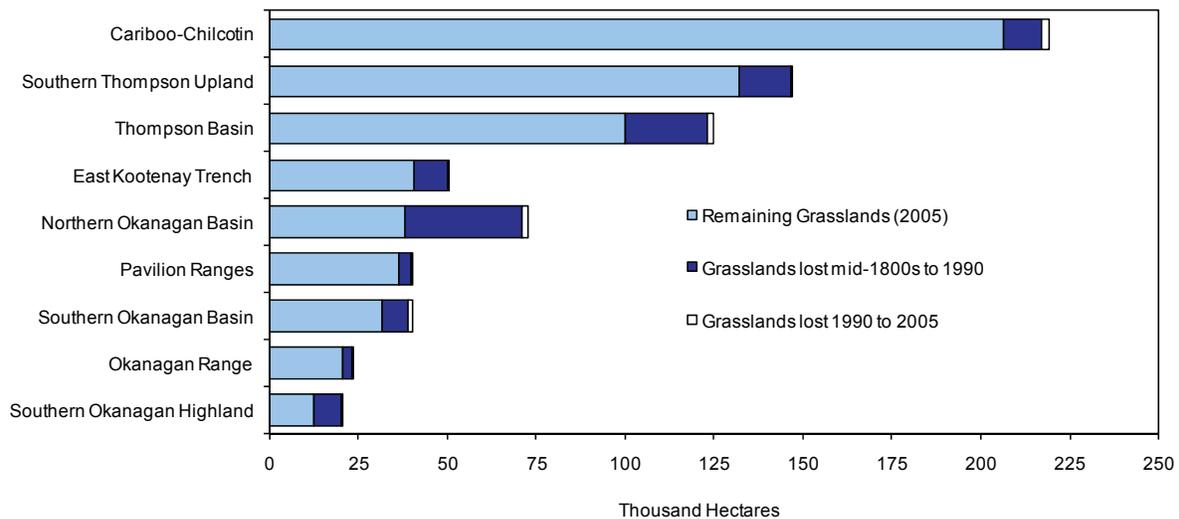
Grasslands are Canada's most endangered ecosystem. In British Columbia, more than 30% of species at risk live in southern interior grassland habitats.

Grassland species at risk include badger, burrowing owl, pallid bat, Great Basin gopher snake, western rattlesnake, and long-billed curlew.



- Most grasslands in the southern interior of British Columbia were lost before 1990.
- About 15 % of grasslands in the southern interior (111,385 ha) were lost to development between the mid-1800s and 1990. Of this, about 11 % was lost to agriculture and 4 % to urbanization.
- Another 1 % of grasslands were lost between 1990 and 2005, mainly to agriculture, urbanization and acreages.
- About 90 % of remaining southern interior grasslands are grazed and many grassland ecosystems have been degraded through overgrazing, recreational ac-

Status of grasslands in southern interior ecosections



Source: Grasslands Council of B.C., 2004 and Grasslands Council of B.C., 2007

Note: All ecosections had some grassland loss between 1990 and 2005, but those with less than two % were not displayed on this graph.

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Garry Oak ecosystems in south coastal BC

Garry oak ecosystems occur in B.C. only on southeastern Vancouver Island and adjacent Gulf Islands, plus two isolated groves east of Vancouver.

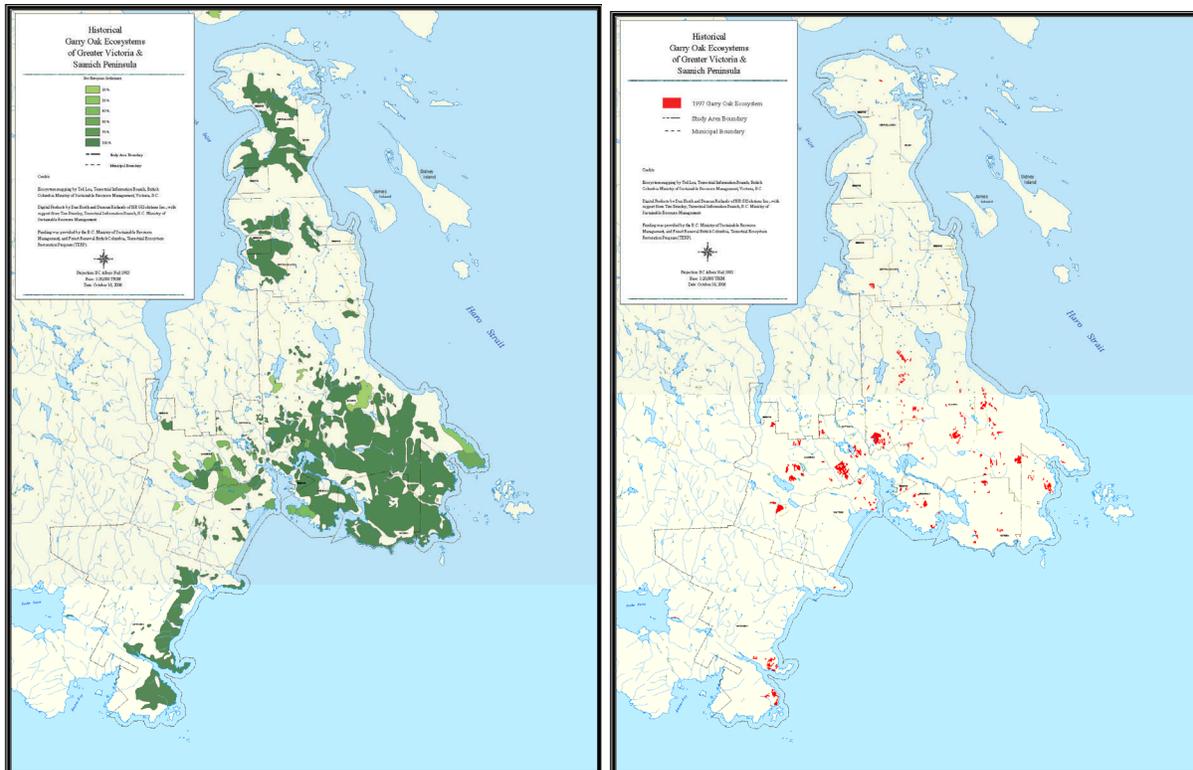


It is one of the most diverse terrestrial ecosystems in the province, containing many species at risk including rare plants such as golden paintbrush and many invertebrates such as dusky-wing butterfly.

- Only about 10% of the area that was originally Garry oak now remains, mostly in isolated fragments, unconnected to other Garry oak areas.
- Although distribution of the Garry oak tree itself may expand, it is unlikely that the rare species associated with this ecosystem could compete with the many alien species that now occur on eastern Vancouver Island.
- The only way to maintain this ecosystem may be with extensive and costly human



Garry oak ecosystems in the greater Victoria area during pre-European settlement (left) and in 1997 (right)



Source: Lea (2006)

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Taking Action - What is being done?

Government Initiatives

Provincial Land Use Planning is a vehicle for identifying and protecting ecosystems in different regions of the province.

Many local governments are applying “smart growth” principles to regulate development through regional growth strategies, official community plans and zoning bylaws.

Federal Species at Risk Act provides protection for species at risk including protecting critical habitat.

Partnerships and Other Initiatives

- Stewardship Canada
- NatureScape BC
- BirdLife International
- Canadian Parks and Wilderness Society
- Grasslands Conservation Council of British Columbia
- Habitat Conservation Trust Fund
- Wildlife Habitat Canada
- World Wildlife Fund Canada

The BC Trust for Public Lands is a partnership between government and conservation agencies to secure and manage ecologically sensitive lands and to plan for biodiversity.



Photo: Ted Lea

Land Trusts and Conservancies

These non-profit organizations often work in partnership with governments and other organisations to achieve shared conservation goals. The larger trusts in B.C. include:

- Land Trust Alliance of BC
- Ducks Unlimited
- The Nature Trust of British Columbia
- The Land Conservancy of British Columbia
- The Nature Conservancy of Canada



What can you do?

Practice good environmental stewardship on your land or property: The Stewardship Centre for British Columbia publishes a series of stewardship guides.



Reduce your personal impact on ecosystems:

- Drive less: walk, take public transit, join a car pool, ride a bicycle.
- Buy a fuel-efficient vehicle.
- Reduce consumption and disposal of unnecessary goods.
- Recycle materials, conserve energy and water, and reduce waste.
- Support “green” businesses and buy certified products.
- Support and encourage sustainable practices at work or school.

For detailed information on these and other indicators, including an in-depth report [pdf], see the Environmental Trends in British Columbia: 2007 website:

<http://www.env.gov.bc.ca/soe/et07/>