



BC's Biodiversity - On the Edge¹

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Abstract

British Columbia is known worldwide for its spectacular landscapes and remarkable wildlife. However, human activities and recent changes in climate are altering the landscape of B.C. in ways that are compromising the province's web-of-life. The future of BC's biodiversity should not be taken for granted and without action that addresses these concerns many aspects of British Columbia's remarkable biodiversity will be lost and/or severely altered.

British Columbia is an exceptional place, known worldwide for its landscapes and wildlife. The province's mountainous topography, glacial history and ocean-influenced climate have fostered a wide diversity of ecosystems and plant life. Of all the Canadian provinces and territories, BC is home to the richest diversity of vascular plants, mosses, mammals, butterflies and breeding birds, and the largest number of species of reptile and amphibians. Some species - such as the Vancouver Island Marmot live nowhere else in the world. Others, like the mountain goat and mountain caribou, have a majority of their population in BC. Examples of important biological diversity [biodiversity] abound at the ecosystem level throughout the province, including the inland temperate rainforest and coastal temperate rainforest.

The first published use of 'biodiversity' was in 1988. Since then, it has come to mean the diversity of all living creatures and their interactions. All elements of biodiversity, regardless of whether we understand their purpose, help to maintain functioning, evolving, resilient ecosystems. This is particularly important in the face of urban encroachment and rapid climate change. It is this complex web - the biological diversity - that sustains life in British Columbia.

Human activities can alter landscape in ways that compromise components of the province's biodiversity. Large proportions of the province are crossed by roads, and the human population has grown to over four million, with 80% concentrated in urban centres, particularly the Greater Vancouver and Victoria areas, Kelowna, Kamloops and Prince George. By 2031, the population is expected to reach close to six million. Continued urban growth, unless contained by land zoning and higher density developments, results in the replacement of low-elevation natural ecosystems or farmland

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(which earlier replaced such ecosystems) with housing and roads. Between urban growth and farmland, biologically diverse forests, wetlands and grasslands are lost. Resource extraction also may place a variety of pressures on biodiversity - through temporary or permanent conversion or disturbance of ecosystems and soil, air and water contamination. Other human activities that may negatively impact biodiversity include species mortality and the introduction of alien species. Recent changes in climate are also beginning to affect biodiversity in the province in unprecedented and often unpredictable ways, most notably in recent years in the prolonged and widespread mountain pine beetle infestation of interior forests.

British Columbia still has wild places and is considered to be globally important to the conservation of many species and ecosystems. Its rugged terrain and short industrial history, which began with the arrival of European explorers 200 years ago, have limited human activity in much of the province. As a result, sensitive species and ecosystems that have been lost elsewhere are still found in B.C.

However, current trends for both species and ecosystems are of major concern. Where biodiversity intersects with certain land-use practices, land, and water resources as well as species and ecosystems have suffered. At present in B.C., 43% of assessed species are of provincial conservation concern. The future health of four of the province's distinct biogeoclimatic zones is also of concern, those being the Coastal Douglas-fir, Interior Douglas-fir, Ponderosa Pine, and Bunchgrass zones. Also of concern are four of nine major drainage areas – the Columbia, Fraser, Coastal and Mackenzie - and 340 of 611 distinctly described ecological communities.

In summation, throughout the province there is compelling scientific evidence that B.C.'s biodiversity is being significantly altered by individual and cumulative stresses resulting from human activities. Ecosystems that took thousands of years to develop are being disturbed, especially in the southern part of the province. Not since the last ice age has such a change in biodiversity occurred. Without action that addresses such degradation, many elements of the province's remarkable biodiversity will likely be lost.