Endangered Species and Spaces

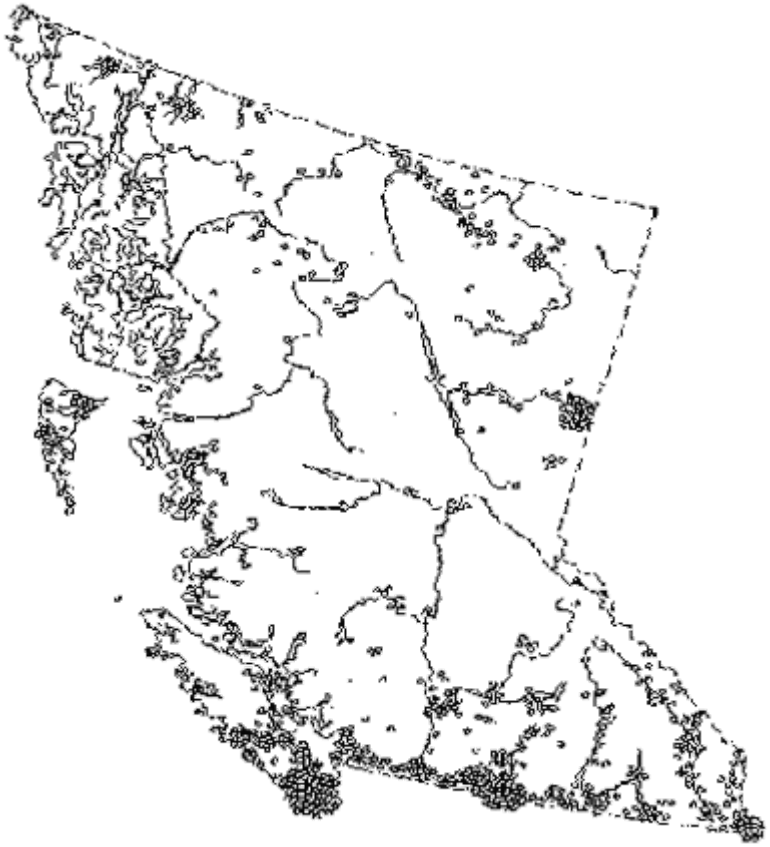
Home
Table of Contents
Introduction
Classification Systems
Mammals
Birds
Amphibians and Reptiles
Freshwater Fishes
Invertebrates
Vascular Plants
Non-Vascular Plants
Plant Communities
Exotic Species
Protected Areas
Summary-Conclusions
Appendix

8.0 Vascular Plants

Vascular plants are those which have a system of vessels or ducts for conveying sap as their primary means of internal transport of nutrients. British Columbia's bounty of biological diversity is reflected in the large number of vascular plants that inhabit the province. There are over 2300 native vascular plant species, and over 600 are considered rare. More than 200 of these are rare due to human activities that have affected the habitats of the plants. The remainder are naturally rare, consisting mainly of species that are near the periphery of their range (Douglas et al. 1998).

There are a number of geographic areas where rare plants are concentrated in the province. Such centres of rarity may reflect, to a degree, areas that have been botanically explored, versus unexplored. Also, occurrences along the boundaries of the province, particularly in the south, may be rare due to the enumeration of rarity within a narrow definition of range (i.e. provincial). Nevertheless, the southern Rocky Mountain Trench within the Columbia Basin is considered one of only a few geographic "hotspots" representing real centres of rarity in the province (Roemer, 1994).

Figure 2: Distribution of Rare Vascular Plants in British Columbia



Circles represent occurrences of thos taxa which are known from three or fewer locations in the Province. Source based on individual distribution maps for taxa shown in Straley et al, 1985.

Rarity can be based on geographic distribution or habitat specificity. The extremes of distributional rarity are: species that occur in large numbers within a narrow geographic range; and, species that occur in very small numbers over a wide geographic range. Habitat-specific species occur in very specific well-defined habitats that are often rare themselves. For example, the Southern Maidenhair Fern (*Adiantum capillus-veneris*) is so habitat-specific that it only occurs in British Columbia in the calcareous tufa deposits of Fairmont Hotsprings (Roemer, 1994).

The type of rarity (geographic distribution vs habitat specificity) has important implications for the protection of rare plants within a system of protected areas. Rare plants that are geographically concentrated and/or habitat specific benefit the most from area-based protection (Roemer, 1994).

Roemer (1994, in Biodiversity in British Columbia) made the following important recommendations regarding rare plant protection which warrant repeating here:

- Protect in reserves those species which have narrow distributions in few localities and/or are tied to very specific habitats of which all or a major proportion may be included in a reserve;
- Provide alternative means of protection for rare species with diffuse distribution and for species that are habitat-vague. Such species would be particularly dependent on suitable management prescriptions applying outside of protected areas and on a Protected Species Act;
- Support research on rarity type, including life histories and habitat dependencies, for all provincially-listed rare plants, so that the best mode of protection can be determined for these plants;
- Allow for greater density of protected areas in centres of rarity.

Notwithstanding the recent work that has been done, it is important to do much more to identify and categorize the flora of the province. By the time it is done it may be too late for many species and populations (Douglas, 1994).

Almost 300 vulnerable and endangered plants occur in the Columbia Basin - nearly a fifth of the provincial total (**Table 9**). The greatest proportion are in the Cranbrook District, reflecting both the degree of habitat disturbance in this heavily urbanized and agriculture region, where most valley bottom land is private, and that fact that, as the northern edge of the Great Basin (also called the Sonoran or high desert, a sagebrush-dominated biome that runs from British Columbia to Baja California), it hosts many species at the northern periphery of their ranges. Therefore, while many Columbia Basin plants are endangered in British Columbia, only a few of these are also globally endangered; the rest are "peripheral" in British Columbia, but more secure in the centre of their population to the south. Ecologists are divided on the importance of peripheral species. On the one hand, how important can it be to save a plant that is secure elsewhere? On the other hand, evolutionary biologists theorize that peripheral populations are the most important, because they are adapted to extreme conditions which may increase their chance of survival in times of environmental stress (Harding, 1999).

Table 9: Numbers of Red and Blue-listed vascular plants in the Columbia Basin (by forest district)

Forest District	Number of Red-listed species	Number of Blue-listed species	Total number of rare species
Cranbrook	41	70	111
Invermere	16	26	42
Golden	7	28	35
Revelstoke	2	8	10
Arrow	11	32	43
Kootenay Lake	14	37	51
Columbia Basin	91	201	292
British Columbia	488	1224	1712

Source: Douglas, G.W., G.B.Straley, and D. Meidinger: Rare Native Vascular Plants of British Columbia, 1998

Go to: **VASCULAR PLANTS REFERENCES**

[Home]