The biogeography of rarity: Rare vascular plants in southwestern British Columbia

E.J. Wheeler, G. A. Allen and M. Fairbarns

Department of Biology, University of Victoria. PO Box 3020 STN CSC, Victoria BC V8W 3N5,
< ericaw@uvic.ca >, Phone: 250-721-7097

Occurrences of rare vascular plants in B.C. are concentrated geographically in several "hotspots". One of these, the region comprising southeastern Vancouver Island and the nearby Gulf Islands, harbours approximately 17% of provincially listed rare plant taxa. Its marine-influenced climate, with mild, wet winters and dry summers, represents the northern limit of Mediterranean-type climates in the Pacific Northwest. Long narrow geographic ranges, extending as far south as California but often less than 100 km in width, are typical of many of the rare plant species in this area. In several cases the ranges are not continuous, but have disjunct regions likely reflecting corresponding disjunctions in habitat. In these species, B.C. populations are very likely to differ both genetically and ecologically from populations found further to the south. They may have different levels of variation within populations, or may contain distinct local genotypes or chromosomal races. They may also differ in ecological attributes such as pollinator requirements, dispersability, or habitat preference. Studies of one blue-listed species, *Allium amplectens,* have shown that the B.C. populations are largely triploid, and have lower levels of genetic variability than populations in Oregon and California, sometimes containing only 2 or 3 genotypes. In B.C., populations can reach high densities but generally occur in very small pockets of meadow habitat. The plants propagate largely through bulb offsets, although they are also able to produce some seed. Populations from different parts of the range that were grown in Victoria differed in details of growth form and ease of cultivation, indicating that ecotypic differentiation exists. An understanding of these types of differences for all rare taxa will provide a firm basis for developing efficient and cost-effective recovery plans.