

Implications of environmental changes on rare plant distribution patterns in Newfoundland

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The island of Newfoundland has about 275 species of plants that are rare. They represent 30% of the total native vascular flora of the island. The west coast, particularly the Corner Brook and the Strait of Belle Isle regions, has the highest concentrations of rare species due mainly to the climatic gradient and diverse bedrock geology.

From a physiogeographical perspective, many of these rare plants are peripheral or disjunct species whose populations are restricted in their distribution to specialized marginal habitats such as limestone barrens/talus, serpentine barrens and late-lying snowbeds.

These "refugial" habitats are unique and represent frag-

ile ecosystems that are vulnerable to degradation by human impact (land-use practices, resource depletion, pollution). They are also sensitive to more long-term ecological changes in regional environmental conditions. Some of the very restricted rare plant populations that are near the limits of their range of tolerance in these habitats may have predictive value as indicator species of changing patterns in climate and vegetation cover. Biogeographical or spatial analyses of the important environmental and biophysical controls that are maintaining these rare plant populations is a basic step towards explaining their present distribution patterns and ensuring their conservation.