

## Ecology of landscapes with serpentized rocks

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Serpentinized ultramafic rocks occur throughout the world and are conspicuous for their impoverished but botanically interesting floras. There is often a sharp contrast with the floras of adjacent areas, and serpentized ultramafic soils in places contain endemic, rare and unusual races of plants, as well as species which accumulate, exclude or tolerate various elements.

Serpentinized areas cover about 3% of the 106,000 km<sup>2</sup> of the island of Newfoundland. These areas contrast strongly with the adjacent Boreal Forest vegetation and stand out as reddish-brown rock deserts. The prominent serpentized areas in Newfoundland are part of the Appalachian Orogen and are mainly transported ophiolitic rocks, peridotite, dunite, and minor pyroxenite of 200 to 540 million years of age. Geologists, for example, have hailed them as 'the eighth

wonder of the world' because of their spectacular geology and physiography, and active geological and botanical investigations have taken place since the turn of the century. In Newfoundland's serpentized landscapes, soil horizon development is restricted by cryoturbation which in turn is related to sparse vegetation because of toxic quantities of Mg, possibly Ni, Cr, Co, and low essential nutrients, especially Ca. These potential element deficiencies, imbalances and excesses have been the focus of research globally.

This paper presents a review of the ecology of serpentized landscapes from Newfoundland. The location, geology, glacial history, soils, flora and vegetation are related to the major stress factors associated with these habitats, and reference is made to other similar sites throughout the world.