



## Wrinkled Shingle Lichen

Photo: © Frances Anderson



### Scientific name

*Pannaria lurida*

### Taxon

Lichens

### COSEWIC Status

Threatened

### Canadian range

New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador

## Reason for Designation

This lichen colonizes mature deciduous trees, most often Red Maple, and is known from 56 occurrences in the Atlantic provinces. Surveys have failed to confirm the lichen is still present in Prince Edward Island, at one of two occurrences in Newfoundland, at two of four occurrences in New Brunswick, and at several of the 49 known occurrences in Nova Scotia. Threats to this species include continuing forest harvesting leading to the removal of host trees, and the impact of climate change, leading to a reduction in the amount of suitable moist climate.

## Wildlife Species Description and Significance

The Wrinkled Shingle Lichen, *Pannaria lurida*, is a leafy lichen forming patches or rosettes that can be up to 10 cm across. It almost always grows on the trunks of deciduous trees. The upper surface is brownish grey and wrinkled. The photosynthetic partner is a cyanobacterium.

## Distribution

The Wrinkled Shingle Lichen occurs in Asia, Australia, Pacific Islands, Africa, Asia and America. Three subspecies have been described. The subspecies that occurs in Canada and northeastern USA is reported to be subspecies *russellii*. There is a possibility that it could be a different subspecies, but no molecular work has been done to substantiate this.

In Canada, the Wrinkled Shingle Lichen is known from 56 occurrences: 49 are in Nova Scotia, four are in New Brunswick, two in Newfoundland and one in Prince Edward Island. There may be undiscovered occurrences, particularly in Nova Scotia and possibly in New Brunswick or even Newfoundland.



absent from 18 of the 56 occurrences amounting to a loss of 32%. It is argued that this loss of occurrences has been accompanied by an equivalent decline in the number of mature individuals of the lichen.

## Threats and Limiting Factors

Threats calculator analysis indicated that the overall threat impact to *P. lurida* was “high to very high” with the major current threat being forest harvest resulting in both loss of host trees and changes in microclimate. The impact of forest harvesting for lumber, firewood, woodchips and biomass is particularly serious because this lichen typically colonizes trees after they have developed rough bark, which takes some 50 years post-harvest. The annual hardwood harvest in Nova Scotia doubled between 1990 and 2000 and is expected to continue with continued harvesting of deciduous trees. The same pattern of decline in the amount of old deciduous forest has also occurred in New Brunswick although most forestry activities are on upland mesic sites.

Less serious threats to the Wrinkled Shingle Lichen are climate change, road construction, development, and pollution. A reduction in rain, longer periods of summer drought and less fog, all of which have been projected for Nova Scotia, could lead to reduced growth or death of the Wrinkled Shingle

Lichen. Where road construction or development affects drainage leading to changes in humidity in surrounding or nearby woodland habitats, it may reduce growth or lead to death of the Wrinkled Shingle Lichen. Finally, this lichen is also sensitive to sulphur dioxide and acid rain. While the levels of both these have fallen in recent years, the continuing emissions may overcome the buffering capacity of the host tree bark, rendering it too acidic for this lichen to colonize.

## Protection, Status and Ranks

The Global Status of the Wrinkled Shingle Lichen is G3 (Vulnerable) to G5 (Secure). The species is Unranked or Not Yet Assessed in the USA. In Canada, the Wrinkled Shingle Lichen is Unranked.

In Nova Scotia, five occurrences are protected: one in Kejimikujik National Park, one in the Five Islands Provincial Park, another in a municipally owned Common Land, and a fifth in a provincial Nature Reserve. In New Brunswick, one occurrence at Clark Point is in a Protected Natural Area.

Source: COSEWIC. 2016. COSEWIC assessment and status report on the Wrinkled Shingle Lichen *Pannaria lurida* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 41 pp.

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