

## Heritage Rank Status Factors

**Elcode** NLLEC3B060  
**Gname** PSEUDOCYPHELLARIA RAINIERENSIS

**Gcomname**

### Number of Occurrences

D = 81 - 300

**Comments** Very few sites in BC, but in OR and WA it is more abundant . Estimated total number of sites is 120.

### Number of Occurrences with Good Viability

E = Many (41-125) occurrences with good viability

**Comments**

### Population Size

E = 2,500-10,000 individuals

**Comments** Estimated 6500 individuals worldwide.

### Range Extent

G = 200,000-2,500,000 km<sup>2</sup> (about 80,000-1,000,000 square miles)

**Comments** The species is endemic to the Pacific Northwest where it occurs west of the Cascades from southern British Columbia to Oregon (McCune and Geiser 1997). It is known to occur in six locations in Canada, all of them in British Columbia. It is more widely distributed in Washington and Oregon. Of the Canadian sites, only one, located in the upper Chilliwack Valley, has been verified recently. Two other populations are likely extirpated, and the status of the remaining three locations is not known.

### Area of Occupancy

G = 2,000-20,000 km<sup>2</sup> (500,000-5,000,000 acres)

LG = 20,000-200,000 km (about 12,500-125,000 miles)

**Comments**

### Long-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

U = Unknown. Long-term trend in population, range, area occupied, or number or condition of occurrences unknown

**Comments** Not known for long enough to understand trends. In British Columbia, in at least two locations, the populations consist of a single thallus, and about half the specimens recently examined showed signs of environmental stress: although they contained reproductive organs, they evidently were having very low reproductive success compared with southern specimens (COSEWIC 2000).

## Short-term Trend in Population Size, Extent of Occurrence, Area of Occupancy, and/or Number or Condition of Occurrences

D = Declining. Decline of 10-30% in population, range, area occupied, and/or number or condition of occurrences

**Comments** Decreasing in BC, possibly due to logging.

## Threats

F = Widespread, low-severity threat. Threat is of low severity but affects (or would affect) most or a significant portion of the population, occurrences, or area. Ecological community occurrences are not threatened severely, with changes reversible and recovery moderately rapid.

**Scope** Moderate      **Severity** Low      **Immediacy** Moderate

**Comments** In the Willamette Forest of Oregon, less than 1/4 of land is covered by old-growth forest, and less than 1/3 of this area persists as an interior forest (Sillett 1994).

## Number of Appropriately Protected and Managed Occurrences

E = Very many (>40) occurrences appropriately protected and managed

**Comments** In BC, no sites appear to be protected (?). In OR, 25 are protected. In WA, 38 are protected. Riparian reserves are not viable protection.

## Intrinsic Vulnerability

B = Moderately Vulnerable. Species exhibits moderate age of maturity, frequency of reproduction, and/or fecundity such that populations generally tend to recover from decreases in abundance over a period of several years (on the order of 5-20 years or 2-5 generations); or species has moderate dispersal capability such that extirpated populations generally become reestablished through natural recolonization (unaided by humans). Ecological community occurrences may be susceptible to changes in composition and structure but tend to recover through natural processes given reasonable time (10-100 years).

**Comments** Although it reproduces at a good rate, reproduction is by isidia and lobules - heavy propagules that may be slow to disperse (D. Stone, pers. comm.). This species grows just as well in young forests as it does in old growth, but it cannot survive in clearcuts. Its absence from young forests is probably attributable to slow rates of dispersal and/or establishment (Sillett, unpublished paper).

## Environmental Specificity

B = Narrow. Specialist or community with key requirements common.

**Comments** Sensitive to edge effect, so edges and wetland reserves are not appropriate. "In the Willamette Forest of Oregon, less than 1/4 of land is covered by old-growth forest, and less than 1/3 of this area persists as an interior forest" (Sillett 1994).

## Other Considerations

NRANK - N3N4. Edge effect important.

**Edition** 2/20/2003      **Edauthor** Daphne Stone

**Grank** G3G4      **Grank Date** 11/30/2002

## Reasons

Endemic to the Pacific Northwest, where it occurs west of the Cascades in British Columbia, northern Oregon, and Washington. A total of about 120 sites have been documented. It is known to occur in only six locations in British Columbia, but is more widely distributed in Washington and Oregon. Of the Canadian sites, two are likely extirpated, and the status of three locations is not known. In at least two locations, the populations consist of a

single plant. About half the specimens recently examined showed signs of environmental stress and low reproductive success compared with southern specimens. The plant is restricted in Canada to sheltered old-growth forest ecosystems in British Columbia. It is found at low to moderate elevations in the Coastal Western Hemlock zone. It occupies at least five of the ten sub-zones, which suggests that the species is widely but sparsely distributed. Elsewhere, this species can grow just as well in young forests as it does in old growth, but it cannot survive in clearcuts and is sensitive to edge effects, so fragmentation/lack of interior forest habitat may be a threat. In addition, riparian reserves do not offer adequate protection. The species' slow dispersal due to heavy propagules may limit distribution to appropriate habitat.

## **BCD Sources**

## **New Sources**

COSEWIC. June 15, 2000-last update. Current Species List. Online. Available:

<http://www.cosewic.gc.ca/COSEWIC/Default.cfm>. Accessed 2000, June.

Sillett S. 1994. Growth rates of two epiphytic cyanolichen species at the edge and in the interior of a 200-year-old Douglas fir forest in the west Cascades of OR. *Bryologist* 97(3): 321-324.

McCune, B. and L. Geiser. 1997. *Macrolichens of the Pacific Northwest*. Oregon State University Press, Corvallis, Oregon. A co-publication with the U.S. Department of Agriculture Forest Service. 386 pp.

Sillett, SC. 1997. Distribution and ecology of *Pseudocyphellaria rainierensis*, an epiphytic cyanolichen endemic to the Pacific Northwest. Pp. 254-260 in: Kaye, T.N, A. Liston, R.M. Love, D.L. Luoma, R.J. Meinke & M.V.

Wilson (eds.). *Conservation and management of native plants and fungi*. Native Plant Society of Oregon, Corvallis.