

Oregon Status Factors

Elcode NBMUS6B020
Gname RACOMITRIUM AQUATICUM
Gcomname MOSS

Number of Occurrences

B = 6 - 20

Comments Most North American records for this species have been renamed *Racomitrium ryszardii*, but Bednarek-Ochyra has not yet annotated material from California and Oregon, and populations south of the Columbia River may belong to a different species and cannot be assumed to be the same as *R. ryszardii*. The ISMS database contains records for about 6 sites in Oregon.

Number of Occurrences with Good Viability

B = Very few (1-3) occurrences with good viability

Comments Estimated 3 occurrences in Oregon with good viability.

Population Size

C = 250-1,000 individuals

Comments Estimated 300 individuals in Oregon.

Range Extent

F = 20,000-200,000 km² (about 8,000-80,000 square miles)

Comments Estimated range is about 20,000 square miles in Oregon. Known from the Cascade Range and Coast Range. Probably also in the Klamath Mountains.

Area of Occupancy

A = <0.4 km² (less than about 100 acres)

LA = <4 km (less than about 2.5 miles)

Comments Estimated area of occupancy is 10 acres in Oregon.

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 Long-term trend in Oregon unknown.

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

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

Comments Short-term trend in Oregon unknown.

Threats

D = Moderate, non-imminent threat. Threat is moderate to severe but not imminent for a significant portion of the population, occurrences, or area.

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

Comments Moderate, non-imminent threat. This species may just be rare instead of declining, but there is little information available. Presumably, its streamside habitat will become more and more degraded with ongoing development and population pressures worldwide. Upstream activities that cause excessive siltation could be detrimental to this species. Diversion or impoundment of water, recreational gold dredging, and recreational boating can damage mosses in splash zones by abrasion or removal of moss mats.

Number of Appropriately Protected and Managed Occurrences

C = Several (4-12) occurrences appropriately protected and managed

Comments No sites protected in Oregon.

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 Moderately vulnerable. Plants are small and fragile, but reproduce readily by spores and fragmentation of gametophytes. Most bryophytes in splash zone habitats are limited to vegetative reproduction, but tend to occur in large monotypic mats that produce many viable fragments for regeneration.

Environmental Specificity

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

Comments Narrow environmental specificity. Forms mats on shaded, moist rocks and cliffs along shady streams or in forests, often in the splash zone, but never aquatic.

Other Considerations

ORNHIC - List 3. Most North American records for this species have been renamed *Racomitrium ryszardii*, and *R. aquaticum* has been restricted to the Old World (Benarek-Ochyra 2000). It has also been confused with *R. pacificum*, so its distribution in the Pacific Northwest is unclear. Furthermore, Benarek-Ochyra has not yet annotated material from California and Oregon, and populations south of the Columbia River may belong to a different species and cannot be assumed to be the same as *R. ryszardii*. The identity of collections in smaller herbaria should be verified and annotated, to clarify the distribution. Whatever it is called, Lawton (1971) considered it rare in the Pacific Northwest.

Edition 2/20/2003 **Edauthor** John A. Christy and Judith Harpel

Grank S2 **Grank Date** 1/10/2003

Reasons

About 6 sites in Oregon. Estimated 3 occurrences in Oregon with good viability. Estimated 300 individuals in Oregon. Estimated range is about 20,000 square miles in Oregon. Estimated area of occupancy is 10 acres in

Oregon. Long-term and short-term trends in Oregon unknown. Moderate, non-imminent threat. No sites protected in Oregon. Moderately vulnerable. Narrow environmental specificity.

BCD Sources

Howard, Lauren Davis. 1975. Moss Flora of New England, New York, and Southeastern Canada. The University of Vermont, Burlington, Vermont. 74 p.

Smith, A.J.E. 1978. The moss flora of Britain and Ireland. Cambridge University Press, Cambridge. 706 pp.

Elliott, J.C., and G.L. Moore. 1989. Additions to the moss flora of Montana. *The Bryologist* 92(2):194-197.

New Sources

University of Alberta. 2002. Devonian Botanic Garden bryophyte database. Edmonton, Alberta.

<<http://www.devonian.ualberta.ca/devonian/bryosearch.cfm>>.

USDA Forest Service, USDI Bureau of Land Management, USDI Fish and Wildlife Service. 2002. Interagency Species Management System [ISMS] database. Portland, Oregon.

Lawton, E. 1971. Moss Flora of the Pacific Northwest. Hattori Botanical Laboratory, Nichinan, Japan. 362 pp.

Bednarek-Ochyra, H. 2000. *Racomitrium ryszardii* (Musci, Grimmiaceae), a new hydrophilous species from the Pacific Northwest with comments on *Racomitrium aquaticum* in North America. *Cryptogamie, Bryologie-Lichénologie* 21: 275-284.

Shevock, J.R. 2003. Personal communication. Expert on moss flora of California. Associate Regional Director for Resources, Partnerships and Science, National Park Service, Oakland. <Jim_Shevock@nps.gov>