

# Washington Status Factors

**Elcode** NBMUS6B020  
**Gname** RACOMITRIUM AQUATICUM  
**Gcomname** MOSS

## Number of Occurrences

D = 81 - 300

**Comments** The ISMS database contains records for 9 sites in Washington.

## Number of Occurrences with Good Viability

C = Few (4-12) occurrences with good viability

**Comments** Estimated 6 occurrences in Washington with good viability.

## Population Size

D = 1,000-2,500 individuals

**Comments** Estimated 2000 individuals in Washington.

## Range Extent

F = 20,000-200,000 km<sup>2</sup> (about 8,000-80,000 square miles)

**Comments** Estimated range is 20,000 square miles in Washington. Known from the Cascade Range and Olympic Mountains.

## Area of Occupancy

A = <0.4 km<sup>2</sup> (less than about 100 acres)

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

**Comments** Estimated area of occupancy is 5 acres in Washington.

## 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 Washington 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 Washington 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

B = Few (1-3) occurrences appropriately protected and managed

**Comments** Three sites protected in Washington and managed appropriately.

## 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

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. 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

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## Reasons

About 9 sites in Washington. Estimated 6 occurrences in Washington with good viability. Estimated 2000 individuals in Washington. Estimated range is 20,000 square miles in Washington. Estimated area of occupancy is 5 acres in Washington. Long-term and short-term trends in Washington unknown. Moderate, non-imminent threat. Three sites protected in Washington. 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**

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.