

Washington Status Factors

Elcode NBMUS6P010
Gname SCHISTOSTEGA PENNATA
Gcomname MOSS

Number of Occurrences

E = >300

Comments Estimated 50 occurrences in Washington. The ISMS database contains 49 records, representing about 40 sites.

Number of Occurrences with Good Viability

D = Some (13-40) occurrences with good viability

Comments Estimated 30 occurrences in Washington with good viability.

Population Size

E = 2,500-10,000 individuals

Comments Estimated 4000-5000 individuals in Washington.

Range Extent

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

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

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 25 acres in Washington. Although widespread in the state with an estimated 50 occurrences, this species has a spotty distribution and in most places occurs only in patches covering less than 1 square meter.

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

E = Relatively Stable ($\pm 25\%$ change)

Comments Long-term trend is relatively stable. Populations disappear naturally from unstable habitats such as animal burrows or under root balls of fallen trees, but these habitats are reproduced over time and the species may recolonize them. Populations probably decline in face of urban development because of loss of habitat and substrate.

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

E = Stable. Population, range, area occupied, and/or number or condition of occurrences unchanged or

remaining within $\pm 10\%$ fluctuation

Comments Short-term trend is relatively stable, for reasons cited above.

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 High **Severity** Low **Immediacy** High

Comments Widespread, low-severity threat. Logging, road and trail construction, or other activities that increase incident light and decrease humidity may cause the species to disappear. Expanding urban development tends to have more calcareous or nutrient-rich substrates that are unsuitable for this species, although some populations are known to have occurred in old cellar holes and under decaying structures.

Number of Appropriately Protected and Managed Occurrences

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

Comments Estimated 12 sites protected in Washington and managed accordingly.

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. Populations are few and far between, yet dispersal happens and new sites are colonized naturally.

Environmental Specificity

A = Very Narrow. Specialist or community with key requirements scarce.

Comments Very narrow environmental specificity. This species occurs on damp acidic rock, soil and decaying wood, in dark places such as openings of caves or mine shafts, in rock crevices or overhangs (particularly sandstone), in animal burrows, on shaded banks, in crevices of root balls of fallen trees, or around tree roots in dark, dense forests. Also reported from old cellars and under rotting sills in old barns. *Schistostega* can survive where other bryophytes cannot because of its ability to capture and concentrate low levels of light, just enough to photosynthesize. If the light gets too bright, other bryophytes invade, and *Schistostega* disappears. In many cases, the species is obviously a pioneer on disturbed soil, but despite an abundance of suitable habitat it remains rare because of its highly irregular distribution.

Other Considerations

Despite its large range and an abundance of suitable habitat, *Schistostega* remains rare because of its highly irregular distribution. Populations are never very large and this taxon is always considered rare and much sought after by collectors.

Edition 2/20/2003 **Edauthor** John A. Christy

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Greasons

Estimated 50 occurrences in Washington. Estimated 30 occurrences in Washington with good viability. Estimated 4000-5000 individuals in Washington. Estimated range is 20,000 square miles in Washington. Estimated area of occupancy is 25 acres in Washington. Long-term and short-term trends are relatively stable. Widespread, low-severity threat. Estimated 12 sites protected in Washington. Moderately vulnerable. Very narrow environmental specificity.

BCD Sources

New Sources

Christy, J.A. & D.H. Wagner. 1996. Guide for the identification of rare, threatened or sensitive bryophytes in the range of the northern spotted owl, western Washington, western Oregon, and northwestern California. USDI Bureau of Land Management. 200 pp.

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