

California Status Factors

Elcode NBMUS1B040
Gname BUXBAUMIA VIRIDIS
Gcomname MOSS

Number of Occurrences

A = 1 - 5

Comments There are 5 known occurrences in California, two of which are historic and have not been relocated. The ISMS database contains 3 more recent records. Many forests have not been systematically surveyed for this species, and the number of estimated occurrences is probably significantly underestimated.

Number of Occurrences with Good Viability

U = Unknown what number of occurrences with good viability

Comments Viability of California populations unknown.

Population Size

B = 50-250 individuals

Comments Estimated population size 100 individuals in California. Many forests have not been systematically surveyed for this species, and the number of estimated individuals is probably significantly underestimated.

Range Extent

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

Comments Estimated range is about 40,000 square miles in California, given the geographic spread of the few known sites. Known from the Shasta-Trinity area and Coast 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 20 acres in California.

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 in California is probably stable, given the large numbers of extant sites in Oregon despite decades of logging.

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 in California is probably stable, based on reasons cited above.

Threats

G = Slightly threatened. Threats, while recognizable, are of low severity, or affecting only a small portion of the population, occurrences, or area. Ecological community occurrences may be altered in minor parts of range or degree of alteration falls within the natural variation of the type.

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

Comments Slightly threatened. Presumably stable, given the large numbers of extant sites in Oregon despite decades of logging, but this species is at the southern end of its range in California and might be subject to pressures not felt farther north. Global warming is a potential threat to populations at the edge of a species' range.

Number of Appropriately Protected and Managed Occurrences

A = None. No occurrences appropriately protected and managed

Comments No occurrences are protected in California.

Intrinsic Vulnerability

C = Not Intrinsicly Vulnerable. Species matures quickly, reproduces frequently, and/or has high fecundity such that populations recover quickly (< 5 years or 2 generations) from decreases in abundance; or species has high dispersal capability such that extirpated populations soon become reestablished through natural recolonization (unaided by humans). Ecological community occurrences are resilient or resistant to irreversible changes in composition and structure and quickly recover (within 10 years).

Comments Not intrinsically vulnerable. Plants are small and fragile, but reproduce readily by spores and fragmentation of gametophytes. Plants will recolonize sites when suitable habitat and substrate are present, but this depends on the availability of inoculum from nearby populations.

Environmental Specificity

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

Comments Narrow environmental specificity. In North America, United Kingdom, and Scandinavia, the substrate is rotten conifer wood, peaty soil and humus. The species is found in dense, shady and humid coniferous forests, from low elevation to subalpine. Rotten wood must be in an advanced stage of decay. In mainland Europe, it occurs on rotten wood of both coniferous and deciduous species, as well as on weathered, acidic rocks.

Other Considerations

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Grank S1 **Grank Date** 11/19/2002

Reasons

There are 5 known occurrences in California, two of which are historic and have not been relocated. Viability of California populations unknown. Estimated population size of 100 individuals in California. Estimated range is about 40,000 square miles in California. Estimated area of occupancy is 20 acres in California. Long-term and short-term trends in California are probably stable. Slightly threatened. No occurrences are protected in California. Not intrinsically vulnerable. Narrow environmental specificity.

BCD Sources

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

Smith, A.J.E. 1980. The moss flora of Britain and Ireland. Cambridge University Press, Cambridge.

Ireland, R.R., G.R. Brassard, W.B. Schofield, D.H. Vitt. 1987. Checklist of the Mosses of Canada II. *Lindbergia* 13:1-62.

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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.

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

Shevock, J.R. 2002. Personal communication. Expert on moss flora of California. Associate Regional Director for Resources, Partnerships and Science, National Park Service, Oakland. <Jim_Shevock@nps.gov>