

Heritage Rank Status Factors

Elcode NBHEP22083
Gname MARSUPELLA EMARGINATA VAR AQUATICA
Gcomname LIVERWORT

Number of Occurrences

D = 81 - 300

Comments Estimated 100 occurrences worldwide. The New York Botanical Garden database has the most complete listing, with only 4 records. The University of Alberta database contains no records worldwide. The ISMS database contains 3 records, representing 1 site.

Number of Occurrences with Good Viability

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

Comments Estimated 30 occurrences worldwide with good viability.

Population Size

E = 2,500-10,000 individuals

Comments Estimated 8000 individuals worldwide. In North America, generally rare and local (Schuster 1974).

Range Extent

H = > 2,500,000 km² (greater than 1,000,000 square miles)

Comments Estimated range greater than 1,000,000 square miles worldwide. Circumboreal distribution. Canada (Newfoundland, Nova Scotia), US (Alaska, Oregon, Maine, Massachusetts, New York, New Hampshire), Greenland, UK, Scandinavia, Europe (Spain, Portugal, France, Italy, Switzerland, Germany, Austria, Russia).

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 50 acres worldwide.

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

D = Moderate Decline (decline of 25-50%)

Comments Moderate long-term decline of 25-50% worldwide. Long-term deterioration of water quality and riparian habitat may have caused local losses.

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 Short-term decline of 10-30% worldwide, for reasons cited above.

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 worldwide. Long-term deterioration of water quality and riparian habitat may have caused local losses. Acid rain and global warming are imminent threats in some parts of range. Rare in United Kingdom.

Number of Appropriately Protected and Managed Occurrences

D = Many (13-40) occurrences appropriately protected and managed

Comments Estimated 30-40 protected occurrences worldwide.

Intrinsic Vulnerability

C = Not Intrinsically 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. Located on rocks in cold montane streams, where perennially submerged.

Other Considerations

NRANK - N3. Rare in United Kingdom. Also known as *Marsupella emarginata* ssp. *quatica*.

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

Grank G5T3 **Grank Date** 11/21/2002

Reasons

Estimated 100 occurrences worldwide. Estimated 30 occurrences worldwide with good viability. Estimated 8000 individuals worldwide. Estimated range greater than 1,000,000 square miles worldwide. Estimated area of occupancy is 50 acres worldwide. Moderate long-term decline of 25-50% worldwide. Short-term decline of 10-30% worldwide. Moderate non-imminent threat worldwide. Estimated 30-40 protected occurrences worldwide. Not intrinsically vulnerable. Narrow environmental specificity.

BCD Sources

Schuster, R.M. 1974. The Hepaticae and Anthocerotae of North America East of the Hundredth Meridian. Volume III. Columbia University, New York.

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.

New York Botanical Garden. 2002. Catalog of American bryophytes database. New York, NY.
<<http://www.nybg.org/bsci/hcol/bryo>>

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.