

Washington Status Factors

Elcode IMGAS59060
Gname HEMPHILLIA MALONEI
Gcomname MALONE JUMPING-SLUG

Number of Occurrences

B = 6 - 20

Comments Prior to 1997, a total of 43 specimens of *Hemphillia malonei* had been reported from 6 locations. In the last two years additional sites have been found for *Hemphillia malonei*: It was found on private land in the Columbia Gorge, Skamania County, Washington, where six specimens were collected. It has also been found in the St. Helens and Cowlitz Valley Ranger Districts in the Gifford Pinchot National Forest in Washington (Burke et al., 1999).

Number of Occurrences with Good Viability

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

Comments Rank unknown, but based on a few sites.

Population Size

U = Unknown

Comments

Range Extent

B = 100-250 km² (about 40-100 square miles)

Comments Malone's jumping slug is endemic to Skamania and probably Clark counties, Washington (Frest and Johannes, 1993a). In the past two years (1997-98) it has been found north of the Columbia Gorge in Washington (Burke et al., 1999).

Area of Occupancy

B = 0.4-4 km² (about 100-1,000 acres)

LB = 4-40 km (about 2.5-25 miles)

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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

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

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Threats

B = Moderate and imminent threat. Threat is moderate to severe and imminent for a significant proportion (20-60%) of the population, occurrences, or area. Ecological community occurrences are directly impacted over a moderate area, either causing irreversible damage or requiring a long-term recovery.

Scope Moderate Severity Moderate Immediacy High

Comments Loss of habitat through timber harvest, recreation, urban development, and road construction are potential threats. Habitat fragmentation reducing populations and species density is a potential threat (Burke et al., 1999).

Number of Appropriately Protected and Managed Occurrences

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

Comments Much of the remaining habitat is probably in Late Seral Reserves or other withdrawn areas, but specific protection may still be needed since proposed management in the LSRs might alter the habitat enough to be unsuitable for this species. New sites discovered in 1998 are mainly from proposed project areas. Part of the range of *Hemphillia malonei*, being in the Columbia Gorge may be in LSRs. There may also be habitat within Congressionally Withdrawn and Administratively Withdrawn areas (USDA, Forest Service, and USDI, Bureau of Land Management, 1974: Federal Land Allocations Proposed under Alternative 9, Feb., 1994). However, new sites found during fall 1998 surveys are most likely in Matrix lands, proposed for management (Burke et al., 1999).

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 Nearly all of the terrestrial gastropods in the Pacific Northwest, including the *Hemphillia*, are hermaphroditic, having both male and female organs. Self-fertilization has been demonstrated in some species, although cross-fertilization is probably the norm (Burke et al., 1999).

Environmental Specificity

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

Comments "Generally in partly open, but uncut forest, at low to high elevations . . . , typically in rather moist Douglas-fir forest, with diverse forbs and well developed litter. Moist valley, ravine, gorge, or talus sites are preferred, i.e., low on a slope and near permanent or persistent water, but not normally subject to regular or catastrophic flooding. Persistent moisture is a desideratum" (Frest and Johannes, 1995c). Elevational range of known occurrences is from near sea level to about 1200 meters (4000 feet), but suitable habitat at any elevation should be considered potential. General habitat is moist forest dominated by conifers, but with a moderate hardwood component. The forest floor is moist, but not wet or saturated. Large woody debris, both conifer and hardwood, is abundant. Logs of decomposition class 2-4 are probably most often used. Litter and duff layers are deep and generally continuous. Low vegetation may be patchy and consist of sword ferns and other plants of cool shaded forests (Burke et al., 1999).

Other Considerations

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Reasons

Very rare in Washington.

BCD Sources

New Sources

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Frest, T.J. and E.J. Johannes. 1993a. Mollusc species of special concern within the range of the northern spotted owl. Final report for the Forest Ecosystem Management Working Group. Deixis Consultants, Seattle, Washington. 39 pp.

Frest, T.J. and E.J. Johannes. 1995c. Interior Columbia Basin mollusk species of special concern. Report to Interior Columbia Basin Ecosystem Management Project. 274 pp.

Kozloff, E.N. and J. Vance. 1958. Systematic status of *Hemphillia malonei*. *The Nautilus*, 72(2): 42-49.

Pilsbry, H.A. 1948. Land Mollusca of North America (north of Mexico). Academy of Natural Sciences of Philadelphia, Monograph number 3, volume 2, part 2: 521-1113.

USDA, Forest Service, and USDI, Bureau of Land Management (1974: J2-347)