

***Botrychium lunaria* (L.) Swartz**

common moonwort

Ophioglossaceae (Adder's Tongue Family)

Status: State Watch

Rank: G5S3

General Description: From Wagner and Wagner (1993): Trophophore stalk 0-<1/16 inch. Blade dark green, oblong, 1-pinnate, to 4 by 1 inches, thick, fleshy. Pinnae to 9 pairs, spreading, mostly overlapping except in shaded forest forms. Distance between 1st and 2nd pinnae from less than to slightly more than that between 2nd and 3rd pairs. Basal pinna pair approximately equal in size and cutting to adjacent pair, broadly fan-shaped, undivided to tip, margins mainly entire or undulate, rarely dentate, apical lobe usually cuneate to spatulate, notched, approximate to adjacent lobes, apex rounded, venation like ribs of a fan, midribs absent. Sporophores 1-2 pinnate, ¾ to 2 times the length of the trophophore.

Identification Tips: *Botrychium lunaria* can be distinguished from *B. crenulatum* by its fleshy (not herbaceous) texture, dark green (not yellow) color, lower placement of the sterile segment on the leaf, sessile sterile portion, an average of 5 pinna pairs (rather than 3), and entire outer margins as opposed to crenulate outer margins.

Phenology: Leaves appear in spring and die in the latter half of the summer. Identifiable July through September.

Range: Widespread in the Northern Hemisphere and scattered in the Southern Hemisphere. Peripheral in Washington. Known from the Olympic Peninsula, West Cascades, and the Okanogan Highlands physiographic provinces.

Habitat: In Washington, the taxon has been found along perennial streams, in open, moist meadows, rocky meadows, and in late seral forests of western redcedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*). Elevation ranges from 2300 to 7400 feet.

Ecology: Intense fires that change the overstory structure and burn deep into the duff layer are detrimental to the species. Low intensity fires after sporulation in the fall are most likely tolerated by the species.

State Status Comments: Peripheral species in Washington. There are more than 60 occurrences in Washington, but most populations are small (fewer than 20 plants).

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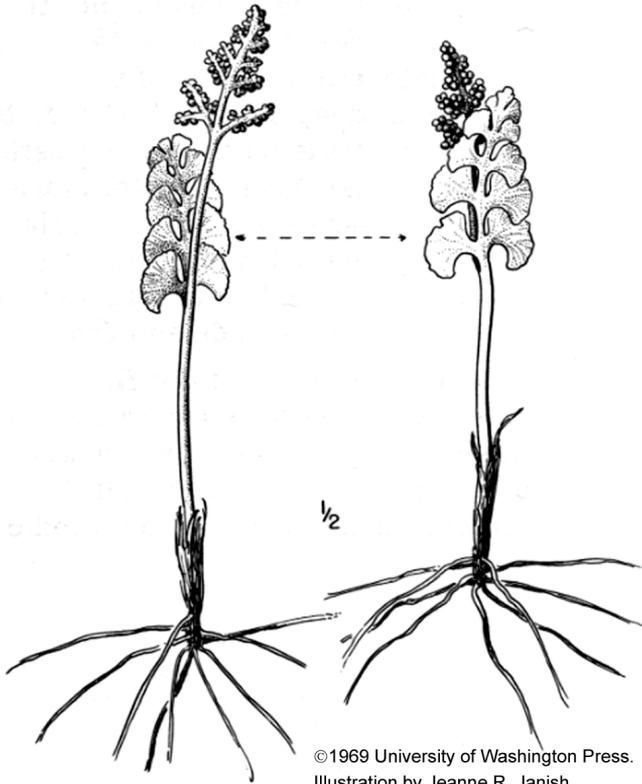
Inventory Needs: Additional inventory is needed throughout Washington.

Threats and Management Concerns: Intense fires, clearcutting, and cattle grazing are the greatest threats to the taxon in Washington. Populations that are located near hiking trails may be impacted by trampling.

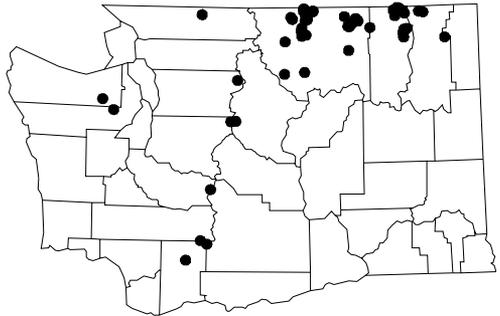
References:

- Hitchcock, C. L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1969. *Vascular Plants of the Pacific Northwest, Part 1: Vascular Cryptogams, Gymnosperms, and Monocotyledons*. University of Washington Press, Seattle. 914 pp.
- Lellingner, D.B. 1985. *A Field Manual of the Ferns & Fern-Allies of the United States & Canada*. Smithsonian Institution Press, Washington, D.C.
- Wagner, W.H. Jr., and F.S. Wagner. 1993. *Flora of North America, Volume 2: Pteridophytes and Gymnosperms*. Treatment of the Ophioglossaceae Family. pp. 85-106.

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Known distribution of
Botrychium lunaria
in Washington



- Current (1980+)
- Historic (older than 1980)

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