

Botrychium paradoxum W.H. Wagner

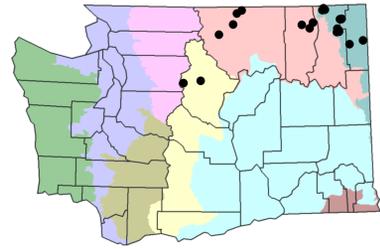
two-spiked moonwort

Ophioglossaceae - adder's-tongue family

status: State Threatened, Federal Species of Concern,

BLM sensitive, USFS sensitive

rank: G3G4 / S2



General Description: Adapted from Wagner & Wagner (1981): Perennial fern 7-15 cm tall, waxy whitish, herbaceous to fleshy, producing 1 branched stem per season, with 2 fertile branches. Common stalk 0.5-2.0 mm diameter. Sterile leaf branch and blades absent, replaced by a second fertile branch.

Reproductive Characteristics: Fertile branches 0.5-4 cm long, erect, nearly sessile to stalked (the stalks up to 1/2 the total fertile segment length), unequal to nearly equal in length, the shorter one as little as 2/3 the length of the longer one. Fertile portion 1-pinnate, mainly linear in outline; lateral branches sessile or nearly so and short, usually only 1-3 mm long. Sporangia mostly 2-3 per lateral branch. Fertile branches present June to August.

Identification Tips: This species is not in Hitchcock & Cronquist (1973). Easily distinguished by the 2 fertile branches and lack of a sterile leafy branch. Very rarely, other moonwort species may have an individual with a sterile branch partially or wholly transformed into a fertile branch. Additionally, this species is known to hybridize with *B. hesperium*, forming *B. x watertonense*.

Range: Sporadic distribution in B.C., Alberta, Sask., the Pacific Northwest, and south to UT.

Habitat/Ecology: In WA this taxon grows in late-seral western redcedar (*Thuja plicata*) forests on floodplains, perennial or intermittent stream terraces, wet or dry meadows, compacted old roadbeds, rocky subalpine slopes, and early-seral lodgepole pine (*Pinus contorta*) communities. Commonly associated with several *Botrychium* species. Elevations in WA: 750-2000 m (2480-6550 ft). It may depend upon associated endophytic fungi for mineral absorption and carbohydrate nutrition, since it is partially lacking chlorophyll.

Comments: This species is rare throughout its range. It is difficult to detect because the plants are often hidden under other vegetation. Livestock grazing, trampling, and off-road vehicle use are its greatest threats in WA.

References: Croft et al. 1997; Flora of North America 1993+, vol. 2; Lellinger 1985; Lesica & Ahlenslager 1996; Wagner & Wagner 1981.



photo by Kirk Larson, USFS



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