

Botrychium paradoxum

PUZZLING MOONWORT

Family: Ophioglossaceae

Agency Status:

US Fish & Wildlife Service: None.

US Forest Service: Region 2 Sensitive

Heritage Rank:

Global: G3G4

State: S2

Range Context: Disjunct

Wyoming Contribution Rank: Medium

Description: Puzzling moonwort is a perennial fern relative 3-12 cm tall with a single leaf divided into two similar segments. Both leaf segments are normally spore-bearing (fertile) and glaucous green, succulent, and 0.5-4 cm long. The fertile segments may be pinnately branched or have sessile clusters of grape-like sporangia. Vegetative (sterile) segments are absent (Lellinger 1985; Wagner and Wagner 1993, Farrar and Popovich 2012).

Local field characters: Fronds with two sets of spore-bearing sporophores and no vegetative tropophore are characteristic.

Similar Species: *Botrychium paradoxum* is unique among the moonwort species in having both leaf segments bearing sporangia. Occasional individuals of other species may have sporangia formed along the margins of otherwise normal-appearing sterile segments. *B. x watertonense* is a hybrid of *B. hesperium* x *B. paradoxum* known from Montana and Alberta.

Phenology: Late July-August.

Distribution: Occurs from the British Columbia to Saskatchewan, and south to California, Utah, and Wyoming. In Wyoming, known from the Big Horn Mountains and Wind River Range (Big Horn, Johnson, Sheridan and Sublette counties).



Above: *Botrychium paradoxum* specimen by Ben Legler (11634 RM)



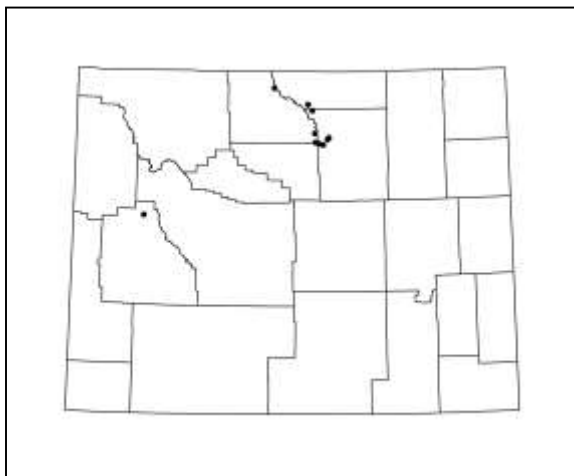
Above: *Botrychium paradoxum* by Ben Legler

Habitat: Open, moist meadows (Wagner and Wagner 1993, Farrar 2011) or in spruce, lodgepole pine, and wet western red cedar forests (Montana Natural Heritage Program 2012). Wyoming populations are at willow thicket margins, stream banks and wetland margins in open valley bottoms and headwaters, and in openings in *Pinus contorta* woodland.

Occurrences in Wyoming: Known from 10 extant occurrences in Wyoming (last observed in 2014).



Above: Rangewide distribution of *Botrychium paradoxum* from USDA, NRCS. The PLANTS Database (<http://plants.usda.gov>). National Plant Data Team, Greensboro, NC 27401-4901 USA.



Above: Wyoming distribution of *Botrychium paradoxum*



Above: *Botrychium paradoxum* habitat by Mathew Spann

Abundance: One population was observed with 44 plants; all others were small with less than 10.

Trends: Unknown.

Protection Status: All known occurrences are on public lands managed for multiple use.

Threats: Unknown.

Managed Areas: Occurs on lands managed by Bighorn and Bridger-Teton National Forests.

References:

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