

## *Botrychium hesperium*

WESTERN MOONWORT

Family: Ophioglossaceae

### Agency Status:

US Fish & Wildlife Service: None.

### Heritage Rank:

Global: G4

State: S1

Range Context: Widespread/Edge; peripheral

Wyoming Contribution Rank: Low

Description: Western moonwort is a perennial fern relative, 5-20 cm tall with a single leaf divided into two dissimilar segments. The vegetative (sterile) segment is dull gray-green and oblong to triangular with a blade 1-6 cm long x 0.5-5 cm wide and once to twice-pinnately compound with 4-6 crowded to overlapping pairs of oblong to ovate or spatulate leaflets (pinnae). The lowest pair of pinnae are the largest and most divided or lobed. The vegetative segment is slightly to distinctly stalked. The spore-bearing (fertile) leaf segment is 2x longer than the vegetative segment and once to thrice-pinnately divided (Chadde and Kudray 2001; Wagner and Wagner 1993; Farrar and Popovich 2012).

Local field characters: Triangular to broadly oval vegetative leaflets with round-toothed, blunt-tipped pinnae about as long as wide are characteristic.

Similar Species: The leaves of *Botrychium pinnatum* and *Botrychium lanceolatum* are bright, shiny green.

Phenology: Late June-August.

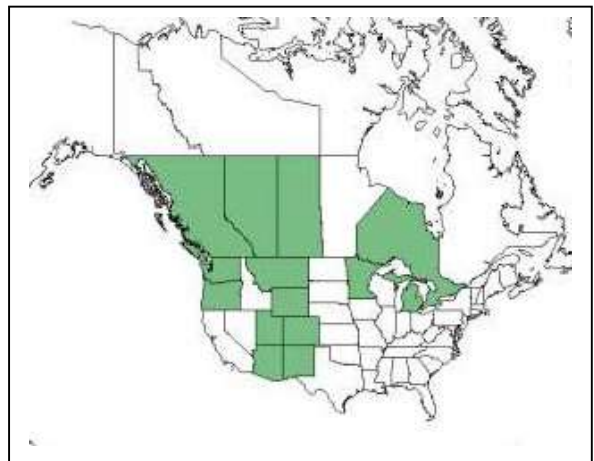
Distribution: Occurs from British Columbia to Saskatchewan, and south from Oregon to Arizona and New Mexico; also in Ontario, Michigan and Minnesota. Reported from western Wyoming based on inference (Wagner and Wagner 1993), but known only in the state from the Big Horn Mountains and Black Hills (Crook, Johnson and Sheridan counties).



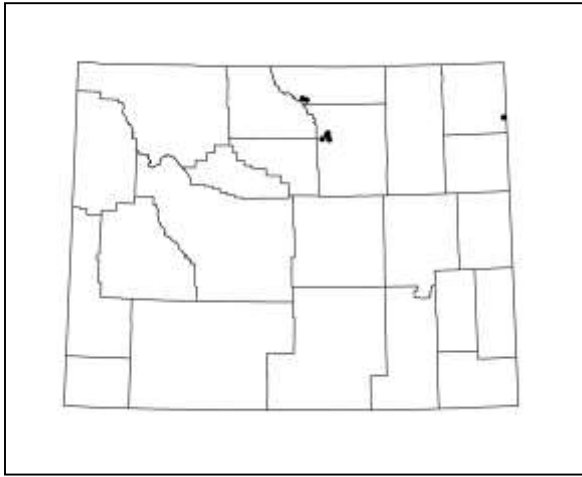
Above: *Botrychium hesperium* specimen by Ben Legler (11803A RM)



Left: *Botrychium hesperium* by Ben Legler



Above: Rangewide distribution of *Botrychium hesperium*



Above: Wyoming distribution of *Botrychium hesperium*

**Habitat:** Often on coarse, gravelly soil with little or no tree cover (Anderson and Cariveau 2004, Farrar and Popovich 2012). Wyoming populations are in small, moist openings in *Pinus contorta* woodland including roadsides and riparian areas.

**Occurrences in Wyoming:** Known from 8 extant occurrences in Wyoming. First collected in 2007, last observed in 2014.

**Abundance:** Fewer than 40 plants were observed at those occurrences with numbers noted.

**Trends:** The successional habitat may be a product of disturbance, with habitat suitability declining over time.

**Protection Status:** The only known occurrences are on public land managed for multiple use.

**Threats:** Unknown.

**Managed Areas:** Occurs on lands managed by Bighorn and Black Hills National Forests.

**References:**

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Farrar, D. R. 2011, December last update. *Botrychium hesperium* species description, map, and photo page. In Farrar, D.R. 2011, December last update. Moonwort (*Botrychium*) systematics. Department of Ecology, Evolution and Organismal Biology, Iowa State University, Ames. Online. Available: <http://www.public.iastate.edu/~herbarium/botrychium.html>

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