

Botrychium pallidum

PALE MOONWORT

Family: Ophioglossaceae

Agency Status:

US Fish & Wildlife Service: None.

Heritage Rank:

Global: G3

State: S1

Range Context: Disjunct

Wyoming Contribution Rank: Medium

Description: Pale moonwort is a perennial fern relative with a single leaf blade divided into two dissimilar segments. The vegetative (sterile) segment is pale green to whitish and short-stalked with a blade up to 4 cm long. The leaf blade is once-pinnately divided with 5 pairs of ascending, somewhat inward-folded segments (pinnae). Individual pinnae are broadly dome-shaped and asymmetric with entire or irregularly round-toothed margins and are about evenly spaced apart. The spore-bearing (fertile) segment is once or twice pinnate and is 1.5-4 times longer than the vegetative segment, joined near the midsection of the common leaf stalk (Spackman et al. 1997; Wagner and Wagner 1993, Farrar and Popovich 2012).

Local field characters: Pale greenish-white leaves and sterile blades with asymmetric, fan or mushroom-shaped pinnae with toothed margins are characteristic.

Similar Species: *Botrychium ascendens* has short-stalked vegetative leaf segments and dentate pinnae margins. *B. minganense* has an elongated, green, flattened fertile segment with its stalk equaling or exceeding the length of the vegetative segment (Farrar and Popovich 2012).

Phenology: June-early July.

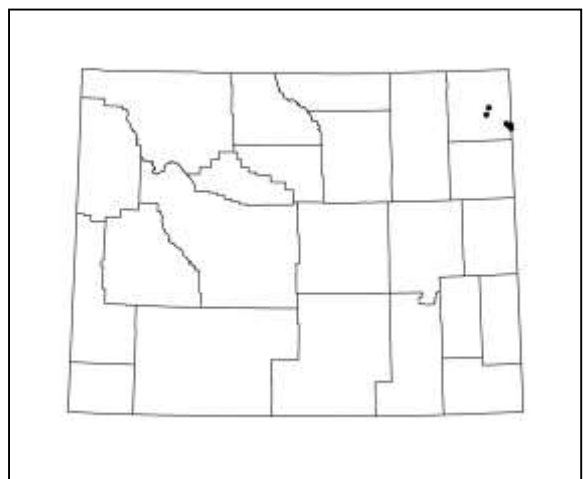


Above: *Botrychium pallidum* by Cheryl Mayer

Distribution: Occurs from Alberta to Quebec, and south to Colorado; also in Minnesota, Michigan and Maine. In Wyoming, known from the Black Hills (Crook County).



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



Above: Wyoming distribution of *Botrychium pallidum*

Habitat: Moist, open deciduous woodlands and moist meadows (Farrar and Popovich 2012). Wyoming populations are in meadow communities, old road beds, and openings in *Populus tremuloides*, *Betula papyrifera* and *Pinus ponderosa* woodlands.



Above: *Botrychium pallidum* habitat by Chelsea Monks

Occurrences in Wyoming: Known from 6 extant occurrences in Wyoming (last observed in 2009).

Abundance: Unknown.

Trends: Unknown.

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

Threats: Unknown.

Managed Areas: Occurs on lands managed by Black Hills National Forest.

References:

Farrar, D. R. 2011, December last update. *Botrychium pallidum* 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>

Farrar, D. R. and S. J. Popovich. 2012. Ophioglossaceae. Pages 24-35 Colorado Flora: Eastern Slope, fourth

edition. W.A. Weber and R.C. Wittmann. University Press of Colorado, Boulder, CO.

Heidel, B. 2006. Additions to the flora of Wyoming. *Castilleja* 25:4-5.

Wagner, W.H. and F.S. Wagner. 1990. Notes on the fan-leaflet group of moonworts in North America with descriptions of two new members. *American Fern Journal* 80(3):73-81.

Wagner Jr., W. H. and F. S. Wagner. 1993. Ophioglossaceae. Pages 85-106 in *Flora of North America* Editorial Committee, editor. *Flora of North America North of Mexico*. Vol. 2. Pteridophytes and Gymnosperms. Oxford University Press, New York, NY.

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