-State Species Account-
-Wyoming Natural Diversity Database-

Botrychium ascendens

UPWARD-LOBE MOONWORT
Family: Ophioglossaceae

Agency Status:
US Fish & Wildlife Service: None (former C2 candidate for listing under the Endangered Species Act).
US Forest Service: Region 2 Sensitive, Region 4 Sensitive

Heritage Rank:
Global: G3
State: S2
Range Context: Widespread/Peripheral
Wyoming Contribution Rank: Low

Description: Upward-lobe moonwort is a perennial fern relative, 5-12 cm tall with a single leaf divided into two dissimilar segments. The vegetative (sterile) segment is 1.5-3.5 cm long and once pinnately compound with 4-6 pairs of non-overlapping, upward-directed, fan-shaped, sharply toothed, yellowish-green leaflets. The spore-bearing (fertile) segment is is longer and narrower than the vegetative portion and pinnately compound, diverging from the vegetative portion about midway up the leaf stalk (Wagner and Wagner 1986; Fertig et al. 1994, Farrar and Popovich 2012).

Local field characters: Mature specimens with well-developed, fully expanded leaves are needed for identification.

Similar Species: *Botrychium lunaria* has overlapping, entire leaflets and spreading vegetative segments. *B. campestre* has oblong leaflets and spore-producing and leafy segments that are about equal in length. *B. crenulatum* has rounded teeth on the leaflets.

Phenology: Late June-mid August.

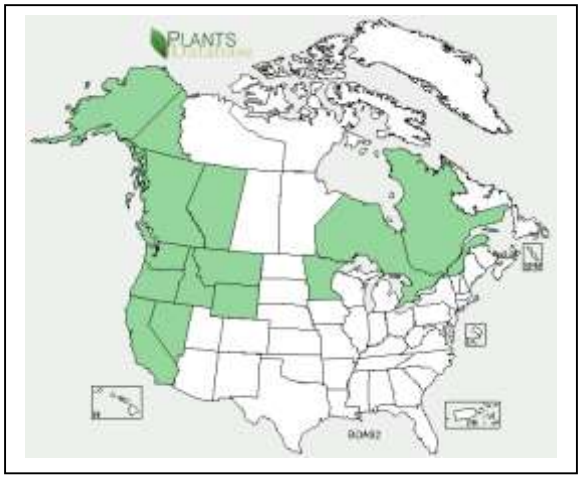
Distribution: Occurs from Alaska to California and Nevada, south in the Rocky Mountains to Colorado; also occurring from Ontario to Newfoundland, south to Minnesota. In Wyoming, known from the Absaroka Range and Big Horn Mountains (Big Horn, Fremont, Johnson, Park and Washakie counties).

Above: *Botrychium ascendens* specimen by Ben Legler (*12486* RM)

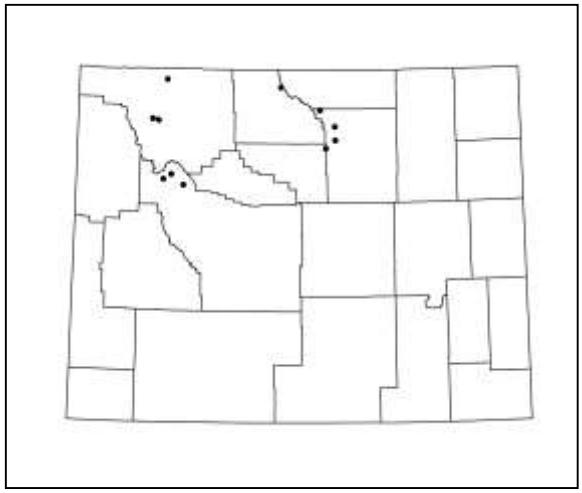
Left: *Botrychium ascendens* by Ben Legler

Habitat: Primarily a species of open habitats (Farrar 2011), but reported from grassy to forested settings (Lellinger 1985, Beatty et al. 2003). Wyoming populations are in moist meadows along streams, in mossy seeps within Douglas-fir, lodgepole pine and Engelmann spruce forests, and riparian willow

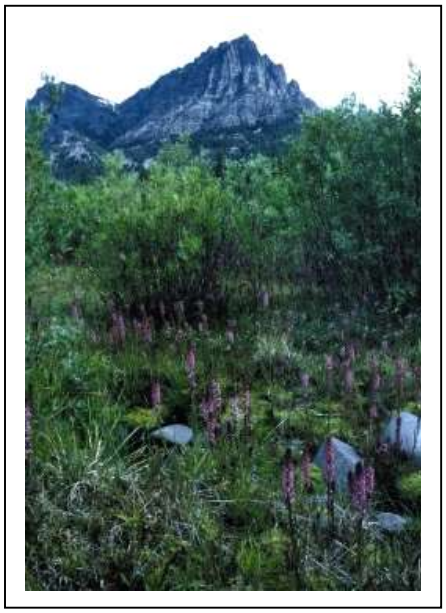
communities including *Salix boothii, S. geyeriana* and *S. wolfii* (Fertig et al. 1994; Beatty et al. 2003).



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



Above: Wyoming distribution of *Botrychium ascendens*



Left: *Botrychium ascendens* habitat by G. Walford

Occurrences in Wyoming: Known from 11 extant occurrences in Wyoming, last observed in 2014.

Botrychium ascendens habitat by Ben Legler

Abundance: Populations appear to all be small, with 10-50 individuals.

Trends: Not known.

Protection Status: Occurs within the proposed Sheep Mesa Research Natural Area. All other known occurrences are found on public lands managed for multiple use.

Threats: Potentially threatened by trampling, grazing, or loss of cover (Fertig 1995).

Managed Areas: Occurs on lands managed by Bighorn and Shoshone National Forests.

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