Rare Plant Status Review: *Botrychium hesperium*
Proposed Addition to California Rare Plant Rank 2B.1, G4 / S1

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Background and Taxonomy

Botrychium hesperium (Maxon & R.T. Clausen) W.H. Wagner & Lellinger is a perennial rhizomatous herb in the Ophioglossaceae (Farrar and Fawcett 2025). It was described in 1981 and recently discovered in California and then added to the *Jepson eFlora* in Revision 13 (Farrar and Fawcett 2025). The presence of *B. hesperium* in California is documented by an herbarium specimen from Kings Canyon National Park in Fresno County that was collected in 2019 (*Grossenbacher 19-02* OBI) and identified by D. Farrar in 2020 (CCH2 2026). Outside of California, it is known from parts of the western United States and Canada; reports from northeastern North America are based on misidentifications of the similar *B. michiganense* (Gilman et al. 2015, NatureServe 2026, POWO 2026).

Botrychium identification is challenging; multiple species co-occur, and positive identification often requires examination of multiple specimens (Wagner and Wagner 1993, CNDDB 2026). The *Jepson eFlora* key to *Botrychium* (Farrar and Fawcett 2025) has been updated to include *B. hesperium* and should be used when identifying this or any *Botrychium* species in California.

Ecology

The single *Botrychium hesperium* occurrence in California is in a wet meadow above the forest line on soils derived from metamorphic rocks with calcareous rocks observed upslope from the collection site (CCH2 2026). The herbarium specimen was collected at 10,622 ft (3,237 m) elevation (CCH2 2026). Associates include other *Botrychium* spp., *Carex rossii*, *Castilleja miniata*, *Danthonia intermedia*, *Thalictrum fendleri*, and *Veratrum californicum* (CCH2 2026).

Distribution and Abundance

Botrychium hesperium is known from one recent occurrence in Fresno County in Kings Canyon National Park northeast of Lake 10232 (CCH2 2026). Approximately 80 sporophytic plants were observed by the collector (Grossenbacher 2026 pers. comm.) but not all *Botrychium* plants produce above ground growth every year, so the population may be larger. Outside of California, *B. hesperium* is often in small, isolated occurrences (NatureServe 2026), so the species should be looked for elsewhere in the Sierra Nevada.

Status and Threats

Botrychium hesperium has no conservation status in California. It has a Global Rank of G4 but is sparsely distributed across its broad range and, except for an S4 ranking in British Columbia, it is ranked S1 to S3 in all states or provinces where it occurs (NatureServe 2026). In California, no non-native plants or direct human impacts or threats were observed, and the site is in an isolated off-trail area (Grossenbacher 2026 pers. comm.). *Botrychium* species grow with glomeromycete fungi and any impact to the health of the fungi could negatively impact *B. hesperium* (Farrar and Fawcett pers. comm. 2026). While no direct threats were documented at the California occurrence, the species is known from a single site with a small population so a threat rank of 0.1 is proposed.

Summary
Based on the available information, CNPS and CNDDB propose adding *Botrychium hesperium* to California Rare Plant Rank 2B.1 of the CNPS Inventory. If knowledge of the distribution, threats, or rarity status of *Botrychium hesperium* changes in the future, it may be re-evaluated.

Recommended Actions
CNPS: Add *Botrychium hesperium* to CRPR 2B.1
CNDDB: Add *Botrychium hesperium* to G4 / S1

Draft CNPS Inventory Record
Botrychium hesperium (Maxon & R.T. Clausen) W.H. Wagner & Lellinger
western moonwort
Ophioglossaceae
CRPR 2B.1
Counties: Fresno
States: Arizona, California, Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming
Quad name (code): Mt. Goddard (3711816)
General Habitat: Alpine boulder and rock field
Microhabitat Details: Wet alpine meadow
Elevation: 3,235 meters (10,615 feet)
Life form: Perennial rhizomatous herb
Notes: Discovered in CA by Dena Grossenbacher in 2019.
Selected References:
-CNPS Status Review: Proposed addition to CRPR 2B.2, G4 / S1 (2026)
-Original Description: *American Fern Journal* 71: 92 (1981)

Literature Cited
[CNDDB] California Department of Fish and Wildlife, Natural Diversity Database. 2026. RareFind 5 [Internet application] and CNDDB Maps and Data, Version 5.3.0. Available at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data [Government Version, accessed April 2026].

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Personal Communications

Farrar, Donald R. 2026. *Botrychium* expert, *Jepson eFlora Botrychium* treatment author. Email communication regarding occurrence of *Botrychium hesperium* in California. 6 May 2026.

Fawcett, Susan. 2026. Fern and *Botrychium* expert, Jepson herbarium curator of ferns, and *Jepson eFlora Botrychium* treatment author. Email communication regarding occurrence of *Botrychium hesperium* in California. 5 May 2026.

Grossenbacher, Dena. 2026. Associate professor, CalPoly SLO, botanist and collector of first specimen of *Botrychium hesperium* in CA. Email communication regarding occurrence of *Botrychium hesperium* in California. 8 May 2026.