



**Natural Heritage  
& Endangered Species  
Program**

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*Massachusetts Division of Fisheries & Wildlife*

**Least Moonwort  
*Botrychium simplex***

E. Hitchc.

State Status: **None**  
Federal Status: **None**

**SPECIES DESCRIPTION:** Least Moonwort is a diminutive, perennial, fern species with a short rhizome, producing one sterile and fertile frond per season. The sterile and fertile fronds typically diverge near the ground surface (0 to 3 cm), though they may diverge up to midway along the total height of the plant. The fronds are mostly 3 to 15 cm in height with a simple (or once or twice pinnate) fertile blade, 0.3 to 5 cm in length. This fertile blade is one to four times as long as the sterile blade. Spores are finely reticulate. The sterile blade may be simple, or be once or twice divided. Due to its low stature, it may be overlooked and thus under-reported. The sterile blade color ranges from dull to bright green or whitish-green.

**DISTRIBUTION AND ABUNDANCE:** Least Moonwort is known from much of the northern US and across Canada; however, in most of its range (where it has been evaluated), it is considered vulnerable, imperiled, or critically imperiled. It is thought to be extirpated from Connecticut and Maryland. In Massachusetts, it is considered critically imperiled, and although NHESP database has historic records of this species from Essex, Hampshire, Hampden and Franklin counties, the only current population is known from Berkshire County. It is also known from Europe. Plants may be dormant for one to several years at a time, making the abundance in any one population difficult to assess.

**HABITAT DESCRIPTION:** The habitats that support Least Moonwort include open wet meadows, roadside ditches, and edges of pastures. Soil types are slightly acidic to circumneutral. It appears that this species needs early to mid-successional sites. Associated species may include sanicles, Long-spurred Violet, Bulblet Fern, Fragile Fern, Sugar Maple, White Ash, Witch Hazel, White Pine, and Eastern Hemlock.

**THREATS:** Threats to the persistence of Least Moonwort may include alteration of its habitat through development, road maintenance, timber harvest, and recreation. Effects of small population size, encroachment of woody plants and invasive species, global climate change, and pollution are also probably contributing factors to its apparent decline. Propagation of Least Moonwort has had minimal success, perhaps in part because this species relies heavily on its interaction with mycorrhizal fungus.

**REFERENCES:**

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**A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan**

**Massachusetts Division of Fisheries & Wildlife**

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