

Species Listing PROPOSAL Form:
Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: Woodsia glabellaCurrent Listed Status (if any): EndangeredCommon name: Smooth Woodsia**Proposed Action:**☐ Add the species, with the status of: _____☒ Remove the species☒ Change the species' status to: SH

Change the scientific name to: _____

Change the common name to: _____

(Please justify proposed name change.)

Proponent's Name and Address:

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Fax:

Association, Institution or Business represented by proponent: Natural Heritage and Endangered Species Program

Proponent's Signature:



Date Submitted:

3/28/2018

Please submit to: Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581

Justification

Justify the proposed change in legal status of the species by addressing each of the criteria below, as listed in the Massachusetts Endangered Species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.00), and provide literature citations or other documentation wherever possible. Expand onto additional pages as needed but make sure you address all of the questions below. The burden of proof is on the proponent for a listing, delisting, or status change.

(1) Taxonomic status. *Is the species a valid taxonomic entity? Please cite scientific literature.*

Woodsia glabella is a valid taxonomic entity, is accepted without synonymy in ITIS (<https://www.itis.gov/>) and used in various publications in New England such as Cullina et al. (2011), Haines (2011) and Fernald (1970). There have been no changes to the nomenclature or species description. The plant was named by well-known Scottish botanist and scientist Robert Brown about 1810 when the genus was established.

(2) Recentness of records. *How recently has the species been conclusively documented within Massachusetts?*

The species was documented in Massachusetts in 1984 by Bruce Sorrie and Pam Weatherbee. A specimen was collected and deposited at NEBC/Gray Herbarium at Harvard University.

(3) Native species status. *Is the species indigenous to Massachusetts?*

Yes, the species is indigenous to Massachusetts. Its occurrence in Massachusetts represented one of its furthest south locations.

(4) Habitat in Massachusetts. *Is a population of the species supported by habitat within the state of Massachusetts?*

Yes, the species was supported by habitat within the State, but has not been observed since 1990. As it was at or near its southern extent in Massachusetts, NHESP botanists believe appropriate habitat for the species no longer exists within the state.

(5) Federal Endangered Species Act status. *Is the species listed under the federal Endangered Species Act? If so, what is its federal status (Endangered or Threatened)?*

Woodsia glabella is not listed, nor under consideration for listing, under the federal Endangered Species Act. It does not have a federal status.

(6) Rarity and geographic distribution.

(a) *Does the species have a small number of occurrences (populations) and/or small size of populations in the state? Are there potentially undocumented occurrences in the state, and if so, is it possible to estimate the potential number of undocumented occurrences?*

Only one population of *Woodsia glabella* has ever been documented in the state. Eight plants were documented on a calcareous rocky summit at Mount Greylock in Cheshire on a seepy limestone face, at approximately 2500 feet. It is at its southeastern extent and there are unlikely to be additional populations in the state. This population has not been observed since 1990.

(b) *What is the extent of the species' entire geographic range, and where within this range are Massachusetts populations (center or edge of range, or peripherally isolated)? Is the species a state or regional endemic?*

Cobb et al. (2005) state the range as "Greenland and across much of Canada and Alaska, south into Me., Minn., N.H., N.Y., Vt. Also n. Eurasia." Massachusetts plants were clearly at the southern edge of the range. *Woodsia glabella* is rare throughout New England, listed as an S1 (critically imperiled) rank in Maine and New Hampshire, and as an S2 in Vermont. In Vermont, all sites for this species are "in mountainous regions" (Gilman 2015). This species is not known from either Connecticut or Rhode Island. In New York, *Woodsia glabella* is listed as an S1, Endangered, with 3 verified occurrences and 4 historic occurrences (NY Natural Heritage Program (2017).

(7) Trends.

(c) *Is the species decreasing (or increasing) in state distribution, number of occurrences, and/or population size? What is the reproductive status of populations? Is reproductive capacity naturally low? Has any long-term trend in these factors been documented?*

This species has only been observed in one location, and only observed twice. The species was first observed in 1984 with 8 mature plants. A second survey, completely quickly in 1990, only found 2 mature plants. No plants have been observed at that location since then. Although there have been several searches, only one negative survey has been recorded in the NHESP database.

(8) Threats and vulnerability.

(d) *What factors are driving a decreasing trend, or threatening reproductive status in the state? Please identify and describe any of the following threats, if present: habitat loss or degradation; predators, parasites, or competitors; species-targeted taking of individual organisms or disruption of breeding activity.*

There is limited habitat in the state, with areas of seeps on exposed limestone, at sufficient elevations for this species. Warming temperatures from climate change, with many of the warmest annual temperatures recorded in the past 20 years, and more erratic weather conditions (droughts, swings in temperature) may make it difficult for *W. glabella*, a species of cool, damp crevices, to survive.

(e) *Does the species have highly specialized habitat, resource needs, or other ecological requirements? Is dispersal ability poor?*

This species has specialized habitat needs: seeps on limestone or shale cliff faces at a higher elevations. This is a limited habitat in Massachusetts as most of the state lies below 2000 feet; and no location is over 3500 feet.

Conservation goals.

What specific conservation goals should be met in order to change the conservation status or to remove the species from the state list? Please address goals for any or all of the following:

(a) *State distribution, number of occurrences (populations), population levels, and/or reproductive rates*

If a new population of *Woodsia glabella* is observed in the future, it should be considered for listing again as an Endangered Species.

(b) *Amount of protected habitat and/or number of protected occurrences*

The current habitat for *W. glabella* is 100 % protected as it lies within Mount Greylock State Reservation.

(c) *Management of protected habitat and/or occurrences*

No management is needed; the species has not been observed since 1990.

Literature cited, additional documentation, and comments.

Cobb, Boughton, Elizabeth Farnsworth and Cheryl Lowe. 2005. A Field Guide to Ferns and Their Related Families, Northeastern and Central North America Second Edition, The Peterson Field Guide Series. Houghton Mifflin Company, New York.

Connolly, Bryan. 2014. Personal communication.

Cullina, M.D., B. Connolly, B. Sorrie, and P. Somers. 2011. The Vascular Plants of Massachusetts: A County Checklist, First Revision. Massachusetts Natural Heritage and Endangered Species Program, Massachusetts Division of Fisheries and Wildlife.

Fernald, M.L., 1970. Gray's Manual of Botany, Eighth (Centennial) Edition. Corrected Printing by RC Rollins.

Gilman, A.V., 2015. *New flora of Vermont*. Bronx: New York Botanical Garden Press.

Gleason, H.A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada, Second Edition. The New England Botanical Garden. Bronx, NY.

Haines, A. 2011. New England Wild Flower Society's Flora Novae Angliae. Yale University Press. New Haven and London.

Natural Heritage and Endangered Species Program Database, including Rare Plant Observations and locational information. Accessed 2/13/2018.

New York Natural Heritage Program. 2017. Online Conservation Guide for *Woodsia glabella*. Available from: <http://www.acris.nynhp.org/guide.php?id=9829>. Accessed March 27th, 2018.