

Species Listing PROPOSAL Form:

Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: *Moneses uniflora*

Current Listed Status (if any): Watch List

Common name: One-flowered Pyrola

Proposed Action: Add the species, with the status of: SC Remove the species Change the species' status to: _____

Change the scientific name to: _____

Change the common name to: _____

(Please justify proposed name change.)

Proponent's Name and Address:

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

Proponent's Signature:



Date Submitted:

5/30/14

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.

Yes, *Moneses uniflora* A. Gray, Manual. 273. 1848., as *Pyrola uniflora* Linnaeus Sp. Pl. 1: 397. 1753

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

2004 was the last official report NHESP received of this species, via personal communication there are reports from circa 2008, and from 2013 (Rene Wendell pers comm., Bill Moorhead pers. comm..)

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

Yes, reported as native by Cullina et al. 2011

- (4) **Habitat in Massachusetts.** Is a population of the species supported by habitat within the state of Massachusetts?
Yes, this species is known from 2 calcareous cobbles in southwestern Massachusetts, and is reported to occur in damp woods and bogs by Gleason and Croquist (1991).
- (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)

No this species is not federally listed.

(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?

There are 5 known populations of this species in the NHESP database. Weatherbee (1996) reports it from 3 towns that are not in the NHESP database. Weatherbee's observations are from the 1980's and early 1990's, it is not known if they are currently extant. There are likely some undocumented occurrences. Thorough detailed botanical inventories in recent years have turned up few records. In Worcester County (Bertin and Rawinski 2012) the species has declined from 19 known towns in the county to only 5 towns. A high estimation of occurrences would be 30 for the state.

(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?

NatureServe considers this species globally secure and ranks it G5. In Massachusetts, it is toward the southern edge of the species range, it is ranked as S2S3 meaning it is considered to be between imperiled or vulnerable at the state level. The range of this species is circum boreal, Spain to Japan and across North America. It is the only member of genus *Moneses*. In North America it is known to occur from Alaska, through all of the Canadian provinces, to New Mexico and Arizona in the west, across the upper Midwest to Pennsylvania and New England. The species is considered to be endangered in Connecticut and Ohio, and is listed as threatened in Rhode Island.

(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?

Moneses appears to be in decline in Massachusetts. Recent botanical inventories of Worcester and Franklin counties have found this species in many fewer locations than reported historically.

(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.

Unknown

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

Pyroleae species, which include *Moneses* have ca 7000 and 60,000 seeds per capsule. These dust sized seed are wind dispersed. Dispersal is unlikely a problem with this species.

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

This plant taxon could be delisted if 40 populations ranked A-C were located.

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

No criteria set at this time.

(c) Management of protected habitat and/or occurrences

To be determined

Literature cited, additional documentation, and comments.

Bertin, R. I. and T. J. Rawinski 2012. *Vascular Flora of Worcester County, Massachusetts*.

Cullina, MD, B Connolly, B Sorrie and P Somers. 2011. *The Vascular Plants of Massachusetts: A County Checklist, First Revision*. MA NHESP.

Gleason, HA and A Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada, Second Edition*. The New York Botanical Garden, Bronx, New York, USA.

The International Plant Names Index [web application]. 2014. Plant Name Query. Published on the Internet <http://www.ipni.org> [accessed 21 March 2014].

Johansson, V., G. Muller, and O. Eriksson 2013. Dust seed production and dispersal in Swedish Pyroleae species. *Nordic Journal of Botany*.

NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: March 6, 2014).

Weatherbee, Pamela B. 1996. *Flora of Berkshire County*. The Berkshire Museum, The Studley Press, Inc. Dalton, MA.