

**Species Listing PROPOSAL Form:**

Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: *Solidago macrophylla*

Current Listed Status (if any): T

Common name: Large leaved goldenrod

**Proposed Action:** Add the species, with the status of: \_\_\_\_\_ Remove the species Change the species' status to: SC

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:

Proponent's Signature:



Date Submitted:

07/30/14

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 this species is a valid taxonomic entity. *Solidago macrophylla* Banks ex Pursh, Fl. Amer. Sept. 2: 542. 1813.

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

2013

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

Yes

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

Yes, this species is found above 2500 ft in Massachusetts in cool woods, clearings, and roadsides.

(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

**(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?

This species has three populations in Massachusetts, but each of these populations is large and has several hundred to thousands of individuals. The mapped habitat within Massachusetts is approximately 8,802 acres. There is a low potential that this species occurs elsewhere in Massachusetts. Any undocumented population is likely to be very limited. Eiseman et al. (2010) using NHESP data developed a habitat model for this species. The model predicted suitable habitat for *Solidago macrophylla* on two additional ridge lines in northwestern Massachusetts, these areas were surveyed and no additional populations were found.

(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?

Massachusetts is on the southern edge of the range for this species. This species is found in Ontario, Quebec, Labrador, south to Vermont, New Hampshire, Maine, New York and Michigan. Massachusetts is the only jurisdiction to state list this species. Personal communication with Aaron Marcus, botanist at Vermont Fish & Wildlife Department, *Solidago macrophylla* is ranked S4 or apparently secure for that state. There are probably hundreds of populations and the species is common over the elevation of 2500 ft in Vermont.

**(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?

Populations appear to be stable within Massachusetts. The same populations have occurred at the same locations for decades. Herbarium records for one population date back to 1881.

**(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.

Limited habitat is the driving factor that restricts this species in the Commonwealth. Potentially climate change is an issue; the species occurs in the highest elevation areas of Massachusetts from approximately 2500 feet to the highest point in the state at 3,491 feet, though in Vermont it is known from lower hills in the relatively warm Champlain Valley. The species appears to be disturbance adapted and large numbers of individuals grow along roadsides.

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

The species is specialized to higher elevation areas within Massachusetts. It generally occurs in rocky cool woods, in semi-shaded to full light. Its seeds are spread by wind; dispersal should not limit this species. The species appears to be disturbance adapted and thrives along roadsides and trails at higher elevations.

**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

Three large healthy populations to remain at SC. If any of the three population declines significantly the status of this species should be returned to T. It is unlikely that this species will greatly increase, but if numbers rise to 8 large healthy A to C rank populations in the state it could be removed from the MESA list.

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

4,000 acres to remain at SC.

(c) Management of protected habitat and/or occurrences

The plant is surviving well along roadsides, trails and in vista cuttings at high elevation. No special management needed.

**Literature cited, additional documentation, and comments.**

Aaron Marcus personal communication botanist at Vermont Fish & Wildlife Department

Eiseman C., M. Jones, L. Willey, and C. Quinlan. 2010. Distribution and Habitat Requirements of Large-leaved Goldenrod (*Solidago macrophylla*) in Massachusetts. Massachusetts Natural Heritage and Endangered Species Program Report. Westborough, MA.

Gleason, H. A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada, 2nd ed. The New York Botanical Garden, Bronx, NY.

Haines, A. 2011. Flora Novae Angliae: a manual for the identification of native and naturalized higher vascular plants of New England. Yale University Press, New Haven, CT.

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

NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: March 5, 2014 ).

USDA, NRCS. 2014. The PLANTS Database (<http://plants.usda.gov>, 10 March 2014). National Plant Data Team, Greensboro, NC 27401-4901 USA