

**Species Listing PROPOSAL Form:**

Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: *Crocانthemum dumosum*

Current Listed Status (if any): SC

Common name: Bushy Rock Rose

Proposed Action: Add the species, with the status of: \_\_\_\_\_ 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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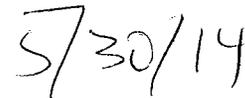
Fax: 508-389-7890

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

Proponent's Signature:



Date Submitted:



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.

This taxon appears **NOT** to be valid from genetic data; it has been described in the past:

*Crocانthemum dumosum* E.P.Bicknell

Bicknell, E. P. 1913. Ferns and flowering plants of Nantucket. Bull. Torrey Bot. Club 40: 605–624.

Current genetic evidence suggests that this taxon is **NOT** distinct from *Crocانthemum canadense* and should be considered a variant of that species, and therefore should be removed from the Massachusetts Endangered Species List.

See:

Obae, S., B. Connolly, and M. Brand. 2013. Genetic relationship among four *Crocianthemum* species (Cistaceae) revealed by amplified fragment length polymorphism markers. *Journal of the Torrey Botanical Society* 140:170-180.

*Helianthemum dumosum* (Bickn.) Fern. is synonymous with *Crocianthemum dumosum* E.P.Bicknell.

(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 (Cullina et al. 2011)

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

Yes

(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?

There are 45 current occurrences, and 13 populations that have recently gone historic. The 45 extant populations are variable in their geographic extent and population size. Fifteen of the 45 extant element occurrences are ranked A, AB, or B, meaning they are considered to have excellent to good viability. There are likely other undocumented occurrences within Massachusetts, though a number cannot be estimated.

(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?

If *Crocantemum dumosum* were to be considered a distinct species it would be considered globally rare, ranked at G3. Within the state of Massachusetts it is ranked S3. If *C. dumosum* is considered part of *C. canadense* as the genetic evidence suggests, this species would be considered globally secure G5.

**(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?

The species appears to be relatively stable in its spatial foot print and population numbers in Massachusetts. Populations that had not been seen since the 1980's were generally relocated when surveyed 20-30 years later and had similar population sizes.

**(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.

Succession and development are possible threats to some populations of this taxon. Though, several populations are found on protected lands on both Cape Cod and the Islands that are currently being managed with controlled burns or mowing.

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

*Crocantemum dumosum* is restricted to sandy early successional habitats. It is known from sandplain/grasslands, dry roadsides, opening in maritime shrub lands and pitch pine forests, power line rights of way, and sandy cemeteries.

**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

Since *Crocانthemum dumosum* is not genetically distinct from *Crocانthemum canadense* it is no longer considered a conservation target.

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

(c) Management of protected habitat and/or occurrences

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

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

Gould, K. and M. Tebbitt. 1999. Final Report (Year One): Conservation genetics and taxonomy of the rare Bushy Rockrose: *Helianthemum dumosum* (Cistaceae). Massachusetts Division of Fisheries and Wildlife, Westborough, MA.

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 ).

Obae, S., B. Connolly, and M. Brand. 2013. Genetic relationship among four *Crocانthemum* species (Cistaceae) revealed by amplified fragment length polymorphism markers. *Journal of the Torrey Botanical Society* 140:170-180.