

# Species Status Assessment

**Common Name** bushy rock rose **Date Updated:** 2024-01-04  
**Scientific Name** *Crocanthemum dumosum* **Updated By:** Kyle J. Webster  
**Family** Cistaceae

**Species Synopsis** (a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):

The bushy rock rose (*Crocanthemum dumosum*) is a perennial forb/herb in the Rock Rose Family (Cistaceae). It is a globally rare endemic native to the coastal plain of Rhode Island, Massachusetts, Connecticut, and New York (NatureServe 2023, Fernald 1950, Sorrie 1987, Gleason and Cronquist 1991, Cullina et. al. 2011). There are 21 species of *Crocanthemum* globally, 15 of which occur in North America (Flora North America 2015). In New York there are four species of *Crocanthemum*, all of which are native (Werier et al. 2023).

*Crocanthemum dumosum* occurs on dry sandy soils in maritime heathlands, shrublands, grasslands, openings in oak woodlands and sometimes in disturbed areas within lawns, golf courses, and pipeline right of ways (NYNHP 2023). It is only known from Nassau and Suffolk counties on Long Island in New York (NYNHP 2023, Werier et al. 2023).

*Crocanthemum dumosum* appears to have declined in New York over the last hundred years. Approximately half of the known populations are either historical or extirpated (NYNHP 2023). In the short-term it appears stable; however, most populations are not on protected lands and only two of the extant occurrences are large and in good quality habitat (NYNHP 2023). More surveys are needed to better understand the trends of *Crocanthemum dumosum* in New York.

## I. Status

### a. Current legal protected Status

i. Federal: **Candidate:**  
ii. New York: Threatened

### b. Natural Heritage Program

i. Global: G3  
ii. New York: S2 **Tracked by NYNHP?** On Active Tracking List

### Other Ranks:

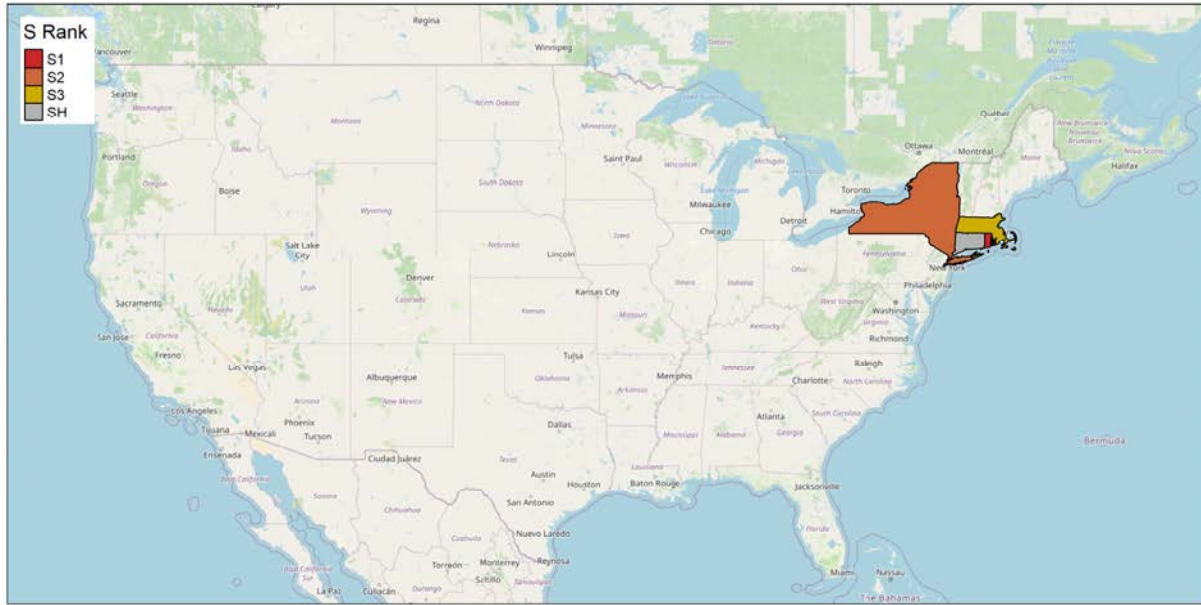
COSEWIC: Not listed in Canada  
IUCN Red List: Not assessed by IUCN Red List

### Status Discussion:

*Crocanthemum dumosum* is Threatened in New York (Ring 2023). There are 14 extant populations, but only two of them are large and in high quality habitat. The remainder occur in small patches, often in degraded landscapes. There are 12 historical occurrences, seven of which have been extirpated (NYNHP 2023). Due to recent taxonomic revisions this species is now better understood by field botanists and additional surveys may reveal new populations, but the overall range is unlikely to expand.

## II. Abundance and Distribution

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Unknown	Unknown	Unknown		
Northeastern US	Yes	Unknown	Unknown	Unknown		
New York	Yes	Unknown	Unknown	Unknown	T	
Connecticut	Yes	Unknown	Unknown	Unknown	SH	
Massachusetts	Yes	Unknown	Unknown	Unknown	S3	
New Jersey	No	-	-	-		
Pennsylvania	No	-	-	-		
Vermont	No	-	-	-		
Ontario	No	-	-	-		
Quebec	No	-	-	-		



**Figure 1:** *Crocanthemum dumosum* North American distribution.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	Unknown

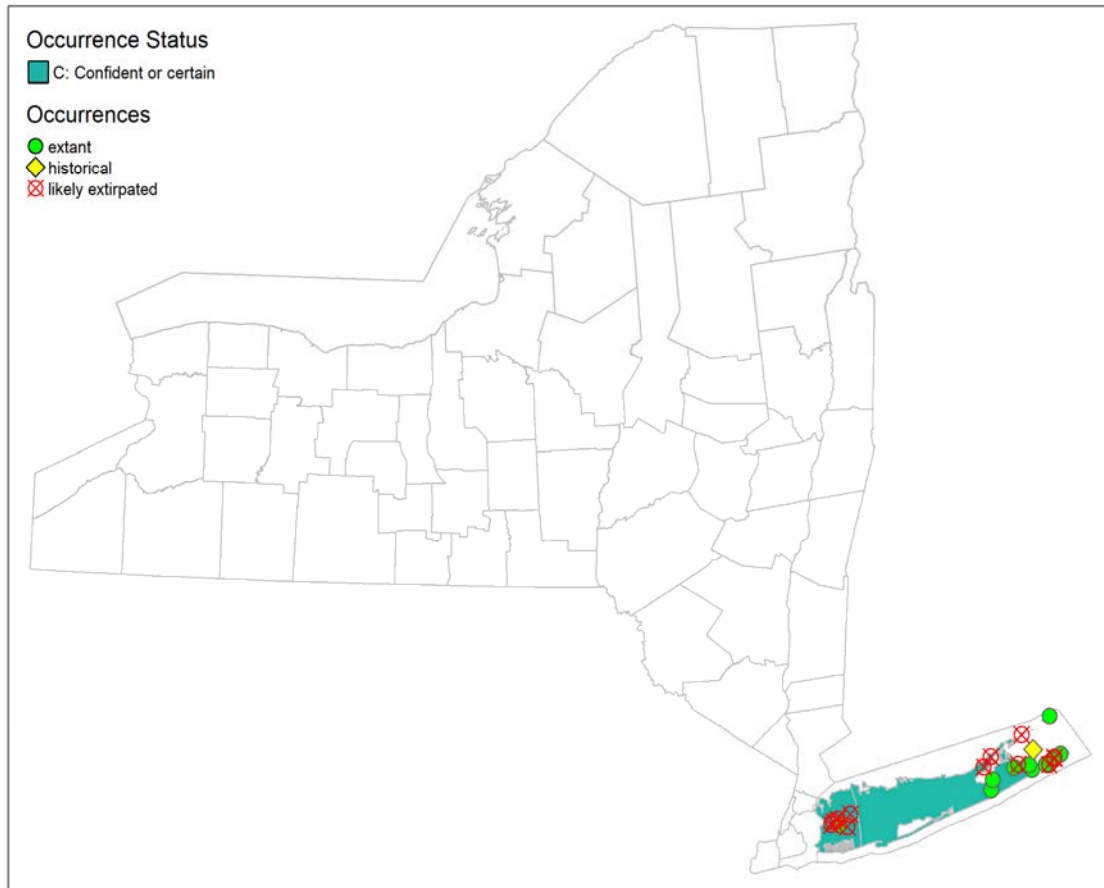
### III. NY Rarity and Trends

#### Trends Discussion

*Crocanthemum dumosum* appears to have declined in New York over the last hundred years. Approximately half the known populations are either historical or thought to be extirpated (NYNHP 2023). Only two of the extant populations are large and in quality habitat, while the remaining 12 extant populations are small and in poor habitat. Populations fluctuate, sometimes substantially, from year to year. Larger populations in quality habitats are likely resilient to these fluctuations, but small populations in less desirable habitats may be more susceptible to extirpation during the down years. Of the 26 known populations in New York, 14 are extant, seven have been extirpated, and one has not been seen since 1985, despite an extensive search in 2003 (NYHP 2023). More surveys are needed to better understand the short and long-term trends of *Crocanthemum dumosum* in New York.

#### Details of historic and current occurrence

In New York, *Crocanthemum dumosum* is only known from Nassau and Suffolk counties on Long Island. Globally, it is endemic to the northeastern coastal plain occurring in Massachusetts, Rhode Island, New York, and historically Connecticut. There are an estimated 500-600 individuals present in New York (NYNHP 2023).



**Figure 2:** NYS distribution of *Crocanthemum dumosum*

**Table 1.** Number of records (element occurrences) of *Crocanthemum dumosum* grouped by the dates known to be extant (the years spanning first observation to last observation) and the number and percent of total of USGS 7.5 minute map quadrangles these observations fall within for New York State.

Years	# of Records	# of distinct quads	% of quads in State
Pre-1995	21	14	1.4
1995-2004	5	4	0.4
2005-2014	4	3	0.3
2015-2023	3	3	0.3

### Monitoring in New York

There are 26 populations known statewide, of which 14 are extant and 12 are historical or extirpated. Four populations occur on NY State Park lands and are monitored on a ten-year rotation. None of the other populations have been regularly monitored. The 14 extant occurrences were last observed between 1985 and 2018, with nine of those being last seen between 2010-2018, four between 2003-2005, and five between 1985-1999 (NYNHP 2023).

#### **IV. Primary Habitat or Community Type** (from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):

NY Natural Heritage Communities: Coastal oak-hickory forest, Hempstead Plains grassland, Maritime grassland, Maritime heathland, Maritime shrubland, Mowed lawn with trees, Pitch pine-oak forest, Pitch pine-oak-heath woodland

#### **Habitat or Community Type Trend in New York**

**Declining:**                      **Stable:**                      **Increasing:**                      **Unknown:** ✓  
**Time Frame of Decline/Increase:**  
**Habitat Specialist**    **Yes:**                      **No:** ✓

#### **Habitat Discussion:**

In New York, *Crocانthemum dumosum* has been found growing in dry sandy soils within a variety of coastal habitats, including coastal oak-hickory forest, Hempstead Plains grassland, maritime grassland, maritime heathland, maritime shrubland, mowed lawn with trees, pitch pine-oak forest, and pitch pine-oak-heath woodland (Edinger et al. 2012, NYNHP 2023, 2024). Commonly associated species are *Agalinis decemloba*, *Agrostis stolonifera*, *Amelanchier nantucketensis*, *Arctostaphylos uva-ursi*, *Baptisia tinctoria*, *Carex pensylvanica*, *Cirsium horridulum*, *Cirsium pumilum*, *Danthonia spicata*, *Crocانthemum propinquum*, *Eupatorium hyssopifolium*, *Euthamia caroliniana*, *Gaylussacia baccata*, *Hieracium gronovii*, *Ionactis linariifolia*, *Juncus greenei*, *Lechea maritima*, *Liatris scariosa* var. *novae-angliae*. *Lilium philadelphicum*, *Linum intercursum*, *Myrica pensylvanica*, *Pityopsis falcata*, *Polygala polygama*, *Quercus ilicifolia*, *Quercus prinoides*, *Rosa caroliniana*, *Salix humilis* var. *tristis*, *Schizachyrium scoparium*, *Sericocarpus asteroides*, *S. linifolius*, *Sisyrinchium fuscatum*, *Solidago nemoralis*, *S. puberula*, *Symphotrichum dumosum*, *Tephrosia virginiana*, *Vaccinium angustifolium*, and *Viola fimbriatula*.

Dry, sandy soil and barrens (Gleason and Cronquist 1991); Open, dry, sandy slopes with less than 25% herb cover; plants seem to be intolerant of shade and moisture (Coddington 1978); Dry sands, barrens and open woods (Fernald 1970).

#### **V. Species Demographics and Life History** (include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):

*Crocانthemum dumosum* is a low, bushy perennial herb with clustered erect stems up to 25 cm tall on a short woody caudex (Flora North America 2015, Gleason and Cronquist 1991, Werier et al. 2023). It produces chasmogamous flowers in spring followed later by cleistogamous flowers (Flora North America 2015, Dunwiddie 1990). The showy chasmogamous flowers have bright yellow petals that open in the sun and attract insect pollinators (NYNHP 2024, Flora North America 2015). These flowers allow for out-crossing with other plants in the population and typically persist for less than a day (NYNHP 2024). Almost no information regarding the pollinators of these chasmogamous flowers is available. Bumblebees have been seen visiting its flowers (Coddington and Field 1978) and two halictid bees, *Augochlorella aurata* and *Lasioglossum pectorale*, were documented on the closely related *Crocانthemum candense* in Illinois (Grundel et al. 2011). The cleistogamous flowers are apetalous and self-pollinating. They

do not open to attract insect pollinators. Gleason and Cronquist (1991) note that *Crocانthemum dumosum* flowers before other species of *Crocانthemum*.

Chasmogamous flowers produce capsules containing 16 - 50 seeds, while cleistogamous capsules contain 8 - 14 seeds (Gleason and Cronquist 1991). The capsules mature throughout the summer, eventually splitting and dispersing the seeds via wind (Coddington and Field 1978, Gleason and Cronquist 1991).

*Crocانthemum* is fire tolerant and plants resprout from a wood caudex if the top portion is killed (Flora North America 2015). Prescribed fires conducted in March resulted in increased cover, flowering, and germination in *Crocانthemum dumosum* populations on Nantucket Island (Dunwiddie 1990).

More research regarding the natural history, demographics, and fire ecology of *Crocانthemum dumosum* is needed.

**Table 2.** Phenology of *Crocانthemum dumosum* in New York State (NYNHP 2023).

Phenology	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flowering												
Fruiting												

## VI. Threats

The biggest threat to *Crocانthemum dumosum* is habitat succession due to lack of fire. Although plants are perennial and can maintain a population for some time until disturbance returns, fire is needed to improve germination and recruit new plants into the population (Dunwiddie 1990). Some populations also occur along trails or roads where the open habitat is maintained without fire, but these plants are threatened by direct destruction such as trampling or improper mowing.

**Are there regulatory mechanisms that protect the species or its habitat in New York?**

Yes:

No:



Unknown:

If yes, describe mechanism and whether adequate to protect species/habitat:

**Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:**

Prescribed fire should be used in early spring to stimulate growth, flowering, and germination. Dormant season mowing could also be used to maintain the habitat but may not improve germination and recruit of new individuals into the population.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - <https://www.iucnredlist.org/resources/conservation-actions-classification-scheme>

**Table 3.** Recommended conservation actions for *Crocianthemum dumosum*.

Conservation Actions	
Action Category	Action
Land/water protection	1.1. Site/area protection
Land/water protection	1.2. Resource & habitat protection
Land/water management	2.1. Site/area management
Land/water management	2.2. Invasive/problematic species control
Land/water management	2.3. Habitat & natural process restoration

## VII. References

### This SSA drew heavily from these resources:

NatureServe. 2023. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. [Accessed 12/14/2023].

New York Natural Heritage Program, State University of New York College of Environmental Science and Forestry. 2023. Element Occurrence and Element Dataset. Albany, New York. [Exported 12/14/2023].

New York Natural Heritage Program. 2024. Online Conservation Guide for *Crocianthemum dumosum*. Available from: <https://guides.nynhp.org/bushy-rockrose>. [Accessed 02/14/2024].

Werier, David, Kyle Webster, Troy Weldy, Andrew Nelson, Richard Mitchell, and Robert Ingalls. 2023 New York Flora Atlas. [S. M. Landry and K. N. Campbell (original application development), USF Water Institute. University of South Florida]. New York Flora Association, Albany, New York. [Accessed 11/21/2023].

### Additional references:

Coddington, J. and K.C. Field. 1978. A report prepared for the U.S. Fish and Wildlife Service. Newton Corner, MA. 10 pp.

Crow, Garrett E. 1982. New England's Rare, Threatened, and Endangered Plants. Prepared for the United States Department of Interior, Fish and Wildlife Service, Northeast Region. June 1982.

Cullina M., B. Connolly B. Sorrie, and P. Somers. 2011. The vascular plants of Massachusetts: A county checklist. Massachusetts Division of Fisheries and Wildlife, Westborough, MA. 186 p.

Daoud, H.S. and R.L. Wilbur. 1965. A revision of the North American species of *Helianthemum* (Cistaceae). *Rhodora* 67: 63-314 (interrupted pagination).

Dunwiddie, Peter W. 1990. Rare Plants in Coastal Heathlands: Observations on *Corema conradii* (Empetraceae) and *Helianthemum dumosum* (Cistaceae). *Rhodora*. Vol. 92. 869:22-26.

Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero (editors). 2014. *Ecological Communities of New York State*. Second Edition. A revised and expanded edition of Carol Reschke's *Ecological Communities of New York State*. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.

Fernald, M.L. 1917. *Helianthemum dumosum* on the mainland of New England. *Rhodora* 19: 58-60.

Fernald, M.L. 1950. *Gray's manual of botany*. 8th edition. D. Van Nostrand, New York. 1632 pp.

Flora of North America Editorial Committee. 2015. *Flora of North America, North of Mexico*. Volume 6. Magnoliophyta: Cucurbitaceae to Droseraceae. Oxford University Press, New York. 496 pp.

Gleason, Henry A. and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. The New York Botanical Garden, Bronx, New York. 910 pp.

Grundel, Ralph, Robert Jean, Krystalynn Frohnapple, Jason Gibbs, Gary Glowacki, & Noel Pavlovic (2011) "A survey of bees (Hymenoptera: Apoidea) of the Indiana Dunes and northwest Indiana, USA." *Journal of the Kansas Entomological Society*, 84(2), pp. 105-138.

Holmgren, Noel. 1998. *The Illustrated Companion to Gleason and Cronquist's Manual. Illustrations of the Vascular Plants of Northeastern United States and Adjacent Canada*. The New York Botanical Garden, Bronx, New York.

Mitchell, Richard S. and Charles J. Sheviak. 1981. *Rare Plants of New York State*. Bull No. 445. New York State Museum. Univ. of New York. State Ed. Department Albany, NY.

Mitchell, Richard S. and Gordon C. Tucker. 1997. *Revised Checklist of New York State Plants. Contributions to a Flora of New York State. Checklist IV. Bulletin No. 490*. New York State Museum. Albany, NY. 400 pp.

Native Plant Trust. 2024. *Crocanthemum dumosum* — bushy frostweed. *Go Botany* 3.9. Framingham, Massachusetts. Available from: <https://gobotany.nativeplanttrust.org/species/crocanthemum/dumosum/> [Accessed 1/16/2024].

Ring, Richard M. 2023. *New York Rare Plant Status Lists*. New York Natural Heritage Program, State University of New York College of Environmental Science and Forestry, Albany, NY. December 2023. 108 pp.

Sorrie, B. A. 1987. Notes on the rare flora of Massachusetts. *Rhodora* 89: 113–196.