

Species Status Assessment

Common Name low rock rose

Date Updated: 2024-01-03

Scientific Name *Crocانthemum propinquum*

Updated By: Kyle J. Webster

Family Cistaceae

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

Low frostweed (*Crocانthemum propinquum*), also called low rock rose or early frostweed, is a perennial forb/herb in the Rock-Rose Family (Cistaceae). There are 21 species of *Crocانthemum* globally, 15 of which occur in North America (Flora North America 2015). In New York there are four species of *Crocانthemum*, all of which are native (Werier et al. 2023).

Crocانthemum propinquum grows in dry, open, often sandy habitats within sandy coastal oak-heath forests, pitch pine-oak-heath woodlands, and sandplain grasslands (NYNHP 2023). Its global range includes the Atlantic Coastal Plain from New Hampshire to North Carolina and inland from Pennsylvania south to Tennessee (NatureServe 2023). Most populations in New York occur on Long Island, but its range extends up the Hudson River Valley to include Orange County and Westchester County (Lamont et al. 2014, NYNHP 2023, Werier et al. 2023). Orange County probably represents the northern edge of its range in New York.

This species has declined over the long term despite new populations being found in recent years. Many of the historical populations have likely been extirpated. The short-term trends are unknown due to a lack of recent surveys. More data is needed to understand the short-term trends among, and population dynamics within, these populations. More surveys may lead to additional populations being found on eastern Long Island.

I. Status

a. Current legal protected Status

i. Federal:

Candidate:

ii. New York:

Threatened

b. Natural Heritage Program

i. Global: G4

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:

Crocantemum propinquum is Threatened in New York (Ring 2023). There are six extant populations, but their current status is unknown. There are at least 16 historical occurrences, primarily in Suffolk and Nassau County, but also in Kings, Orange, Queens, and Westchester County. Many of these historical occurrences are presumed extirpated.

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	S2	
Massachusetts	Yes	Unknown	Unknown	Unknown	SNR	
New Jersey	Yes	Unknown	Unknown	Unknown	S4	
Pennsylvania	Yes	Unknown	Unknown	Unknown	S2	
Vermont	No	-	-	-		
Ontario	No	-	-	-		
Quebec	No	-	-	-		

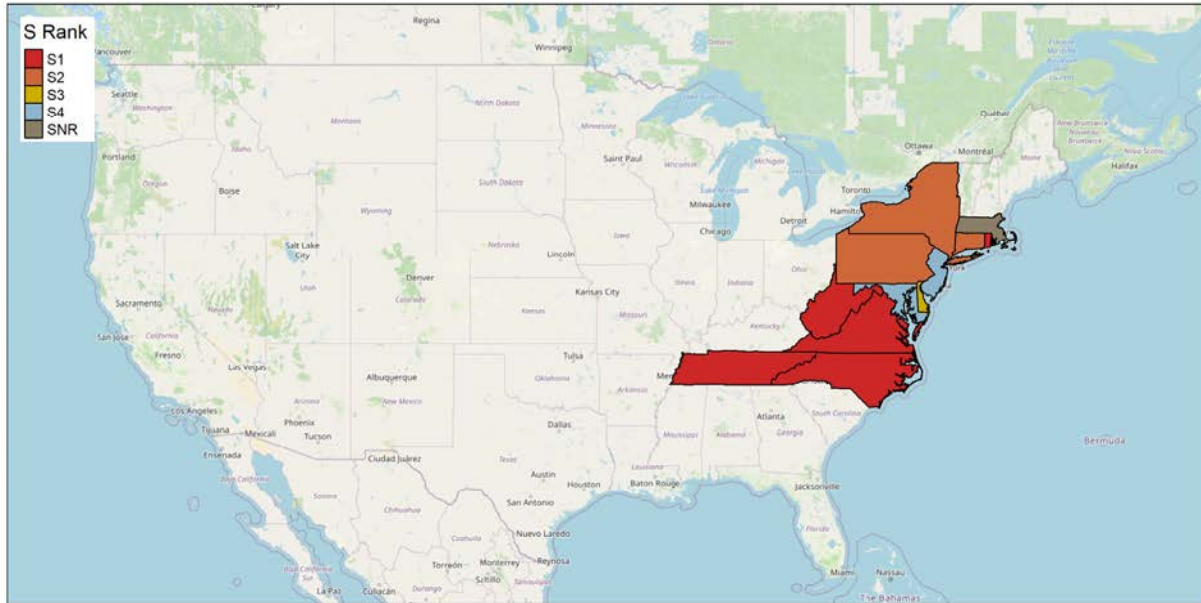


Figure 1: *Crocanthemum propinquum* North American distribution.

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 propinquum has probably declined in New York over the long term. There six extant populations and an additional 16 historical records (not shown in Figure 2 or Table 1). Most of the historical populations are from western Long Island and are presumed extirpated (NYNHP 2023, NYNHP 2024). Due to a lack of recent surveys, the short-term trends are unknown. More surveys and herbarium reviews of historical specimens are needed. Additional surveys on eastern Long Island may result in the discovery of new populations.

Details of historic and current occurrence

This species is currently known from five populations in Nassau and Suffolk counties on Long Island, and from one population in Orange County (Werier et al. 2023). Most historical records are concentrated in western Long Island in Kings, Nassau, and Queens Counties and are now presumed extirpated. There is also a historical record from Westchester County whose status is unknown.

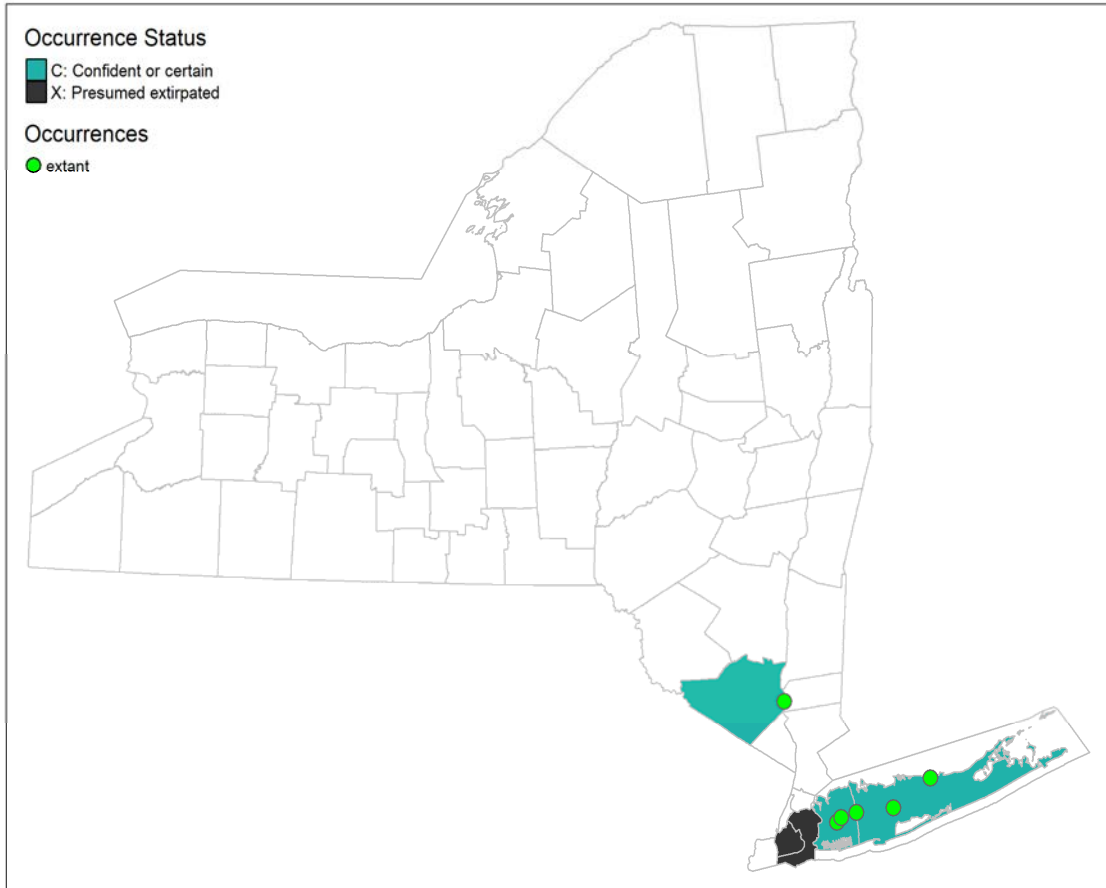


Figure 2: NYS distribution of *Crocanthemum propinquum*.

Table 1. Number of records (element occurrences) of *Crocanthemum propinquum* 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	0	0	0.0
1995-2004	0	0	0.0
2005-2014	5	5	0.5
2015-2023	1	1	0.1

Monitoring in New York

There are six extant populations statewide and at least 16 historical records (NYNHP 2023, 2024). None of the populations have been regularly monitored.

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

NatureServe broad habitat types: Woodland - Mixed, Grassland/herbaceous, Forest/Woodland

NY Natural Heritage Communities: Coastal oak-heath forest, pitch pine-oak-heath woodlands, and sandplain grasslands

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, early frostweed is known to grow in dry, open, often sandy habitats within sandy coastal oak-heath forests, pitch pine-oak-heath woodlands, and sandplain grasslands (NYNHP 2023).

Dry, sandy soil, open ground, barrens, and upland woods at high elevations (Gleason and Cronquist 1991, Fernald 1950, Hough 1983, Radford et al. 1968); Open woodlands, rock outcrops, sandplain grasslands, maritime heathlands, clearings, fields (Flora North America 2015).

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 propinquum is a perennial herb with scattered stems arising from a long rhizome (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 (*Bombus spp.*) and two halictid bees (*Augochlorella aurata* and *Lasioglossum pectoral*) have been documented on the flowers of other *Crocانthemum* species (Coddington and Field 1978, Grundel et al. 2011). The cleistogamous flowers are apetalous and self-pollinating.

Chasmogamous flowers produce capsules containing 12-15 seeds, while cleistogamous capsules contain 1-3 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 their root stock after being top killed (Flora North America 2015). Prescribed fires conducted in March resulted in increased cover, flowering, and germination in *Crocانthemum* populations on Nantucket Island (Dunwiddie 1990). More research regarding the natural history, demographics, and fire ecology of *Crocانthemum propinquum* is needed.

Table 2. Phenology of *Crocianthemum propinquum* 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 *Crocianthemum propinquum* is habitat succession due to a lack of fire. Although plants are perennial and can maintain a population for some time until disturbance returns, fire is needed to recruit improve germination and recruit new plants into the population. 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 propinquum*.

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:

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