

# Species Status Assessment

**Common Name** orange crested orchid **Date Updated:** 2024-02-09  
**Scientific Name** *Platanthera cristata* **Updated By:** Rachael A. Renzi  
**Family** Orchidaceae

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

Orange crested orchid (*Platanthera cristata*) is a perennial forb in the orchid family. It is one of 16 plants in the genus *Platanthera* in NY (Werier et al. 2023). The plant is restricted to Suffolk County in NY, but it once extended west through Queens (NYNHP 2023, 2024; Lamont 2007). It inhabits open sandy dunes, swales, and barrens, often associated with pitch pines (NYNHP 2023, 2024). Though its range extends south to TX, it is rare or vulnerable in many of the states where it is found (NatureServe 2023). The reason for its rarity, at least in NY, may be related to its need for certain levels of disturbance (NYNHP 2023, 2024). *Platanthera cristata* can be outcompeted by successive shrubbery, so it has been suggested that the control of surrounding vegetation by burning or mechanical means during the dormant season could maintain population sizes (NYNHP 2023, 2024; NatureServe 2023). Populations have also been lost to development, especially in urban areas (NYNHP 2023). There are five existing populations, which is about 1400 plants total in NY (NYNHP 2023). The plant has seemingly always been rare, as there are only seven historical populations (NYNHP 2023, 2024). The continued existence of the extant populations since the 1980s suggests stable populations, but long-term data is lacking (NYNHP 2023, 2024). In addition, three populations are very small and may not be viable in the long term (NYNHP 2023). One population has undergone succession, and no plants have been seen since 1984 (NYNHP 2023). More research is needed to understand the life cycle of these orchids, as well as continued monitoring of both the small and large populations.

## I. Status

### a. Current legal protected Status

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

### b. Natural Heritage Program

i. Global: G5  
ii. New York: S1 **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:**

*Platanthera cristata* is Endangered in New York (Ring 2023). There are five existing populations, all located in Suffolk County (NYNHP 2023). The two largest populations have between 600-800 plants, but the other three are very small, with less than 25 plants, and may not be viable in the long term (NYNHP 2023). One population has undergone succession, and no plants have been seen since 1984 (NYNHP 2023). This orchid was always rare in New York with only seven historical records (NYNHP 2023, 2024). Throughout its range, the plant is rare or vulnerable (NatureServe 2023).

**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	E	
Connecticut	Yes	Unknown	Unknown	Unknown	SNR	
Massachusetts	Yes	Unknown	Unknown	Unknown	S1	
New Jersey	Yes	Unknown	Unknown	Unknown	S3	
Pennsylvania	Yes	Unknown	Unknown	Unknown	SX	
Vermont	No	-	-	-		
Ontario	No	-	-	-		
Quebec	No	-	-	-		

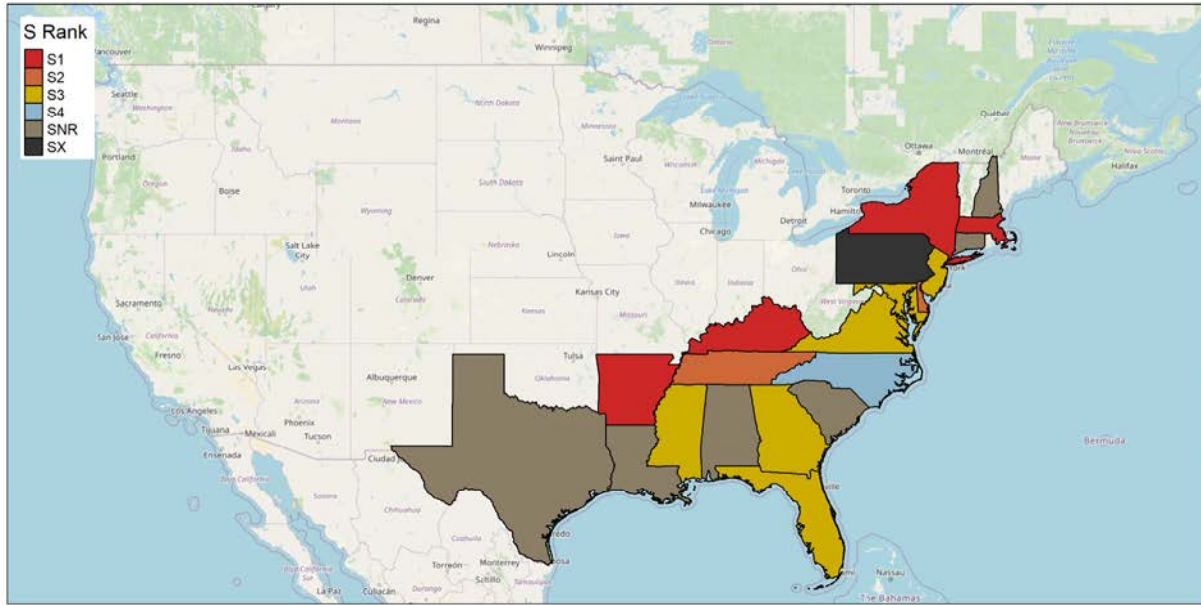


Figure 1. *Platanthera cristata* North American distribution.

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

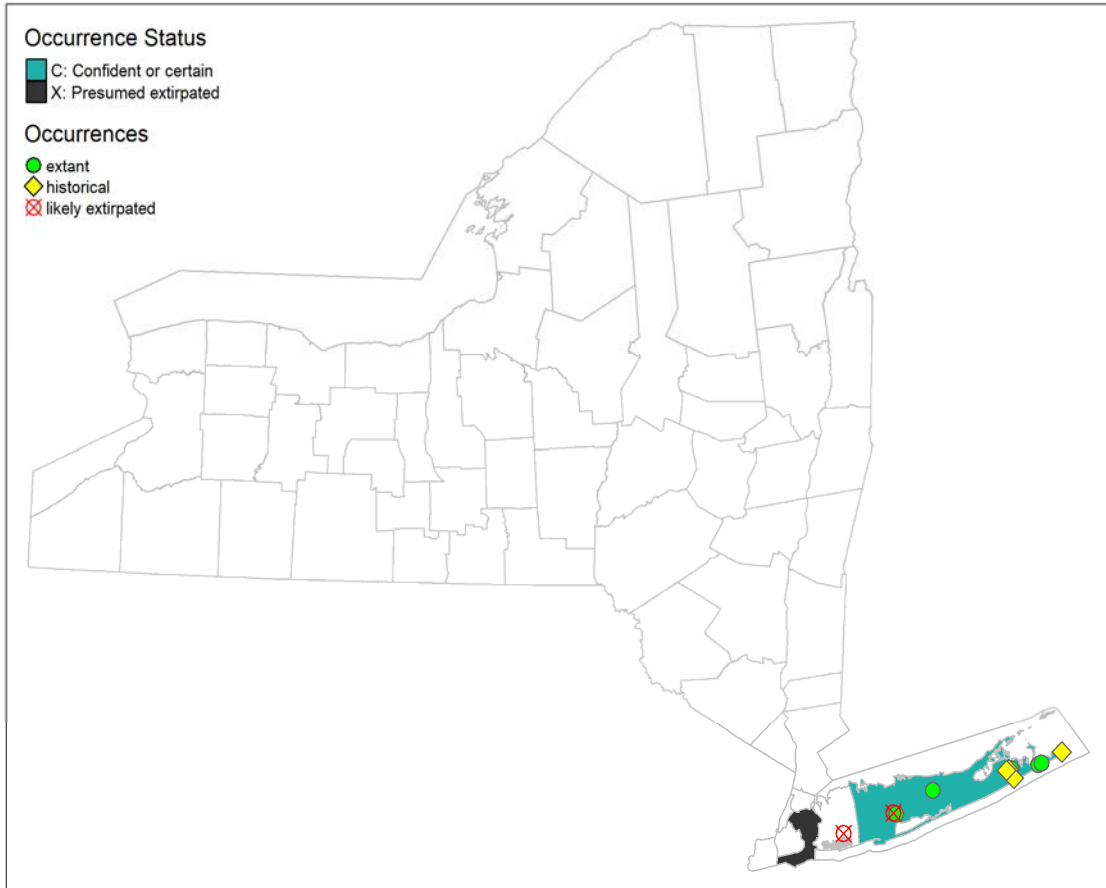
### III. NY Rarity and Trends

#### Trends Discussion

While the two largest populations seem stable, one population has been in decline since 1984, and another has not had plants since 1984 (NYNHP 2023). It is difficult to assess short term trends, due to the fluctuating nature of the populations. More frequent counts are needed to better assess trends. The plant has lost few populations over the long term, but the historical populations should be revisited to assess their status (NYNHP 2023, 2024). In addition, three of the extant populations are very small, and risk extinction in the future (NYNHP 2023).

#### Details of historic and current occurrence

Brooklyn and Queens Counties were once the epicenter of orchid growth for NY, being home to 42% of the state's 57 orchid species roughly 150 years ago (Lamont 2007). Now only three species exist in Queens (Lamont 2007). *Platanthera cristata* was one of those orchids to become extirpated (NYNHP 2023). This orchid extended from Queens east through Suffolk County on Long Island but is presently only known from Suffolk County and considered extirpated in Nassau and Queens counties (NYNHP 2023, 2024). Based on surveys between 2004 and 2013, there are about 1400 plants total on Long Island (NYNHP 2023).



**Figure 2.** NYS distribution for *Platanthera cristata*.

**Table 1.** Number of records (element occurrences) of *Platanthera cristata* 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	11	7	0.7
1995-2004	3	2	0.2
2005-2014	3	2	0.2
2015-2023	1	1	0.1

### Monitoring in New York

Two populations occur on state park land, which are surveyed on a 10-year rotation (NYNHP 2023). Another occurs on land owned by the local municipal government, but it is managed by a private organization (NYNHP 2023).

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

Northeastern Habitat Classification Macrogroups: Coastal grassland and Shrubland, Central oak-pine.

NY Ecological Communities: Maritime freshwater interdunal swales, Maritime dunes, Maritime pitch pine dune woodland, Pitch pine-heath barrens (Edinger et al. 2014, NYNHP 2023).

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

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

#### Habitat Discussion:

In NY, *Platanthera cristata* has been found primarily at open, sandy sites, associated with pitch pine (*Pinus rigida*). These have included sand dunes and interdunal swales, open pine woods and barrens, and roadsides or firebreaks (NYNHP 2023, 2024). Moist sandy and peaty meadows, marshes, prairies, pine savannas, wet wooded flats, seeping slopes, sphagnum bogs (FNA 2002). Low moist meadows and damp pine woods, especially along the coastal plain, but also in the mountains southward (Gleason and Cronquist 1991).

#### 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):*

*Platanthera cristata* is a perennial forb that flowers from July through September (NYNHP 2023, 2024). It is pollinated by bumblebees (Luer 1975). It is associated with *Epulorhiza* fungus in southern states (Currah et al. 1997). More research is needed regarding the life history of *Platanthera cristata*.

**Table 2.** Phenology of *Platanthera cristata* in New York State (NYNHP 2023).

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

#### VI. Threats

Plants along a roadside are threatened by improper mowing schedules and other more isolated populations are threatened by collection and browsing by deer (NYNHP 2023, 2024). However, too little disturbance may also be a threat. Fire suppressed areas (including pine plantations) with thick shrub and needle duff layers are barriers to this species (NatureServe 2023).

## 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:

This species needs disturbance to reduce competition from woody plants or more aggressive herbaceous plants but too much direct disturbance to the plants will reduce or eliminate the population (NYNHP 2023, 2024). Its habitat could be disturbed in the non-growing season to open it up for seed germination and colonization, but direct disturbance should be prevented during the growing season (NYNHP 2023, 2024). For the smaller populations, lowering rates of competition may be essential in maintaining their existence.

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 *Platanthera cristata*.

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 *Platanthera cristata*. Available from: <https://guides.nynhp.org/orange-crested-orchid/>. Accessed February 8, 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:

Clemants, Steven and Carol Gracie. 2006. Wildflowers in the Field and Forest. A Field Guide to the Northeastern United States. Oxford University Press, New York, NY. 445 pp.

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. <https://www.nynhp.org/documents/39/ecocomm2014.pdf>

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

Flora of North America Editorial Committee. 2002. Flora of North America, North of Mexico. Volume 26. Magnoliophyta: Liliidae: Liliales and Orchidales. Oxford University Press, New York. 723 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.

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.

Lamont, Eric. 2007. One Hundred and Fifty Years of Change in the Orchid Flora of Brooklyn and Queens, New York. Natural History of New York City's Parks and Great Gull Island. Transcriptions of the Linnean Society of New York. Volume X.

Luer, C.A. 1975. The native orchids of the United States and Canada, Excluding Florida. The New York Botanical Garden, Bronx.

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.

Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide: An Ingenious New Key System for Quick, Positive Field Identification of the Wildflowers, Flowering Shrubs, and Vines of Northeastern and North-Central North America. Little, Brown and Company. Boston.

Reschke, Carol. 1990. Ecological communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation. Latham, NY. 96 pp. plus xi.

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.