

Species Status Assessment

Common Name nodding onion **Date Updated:** 2023-12-20
Scientific Name *Allium cernuum* **Updated By:** Richard M Ring
Family Amaryllidaceae

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

Nodding onion (*Allium cernuum*) is a perennial, monocotyledonous herb in the Amaryllis family. It is one of twelve species of *Allium* known from New York, only four of which are native. It is known from most of the United States, as well as parts of Canada and Mexico, although it is considered to be of conservation concern in at least eight states. New York marks the northeastern edge of its range. There are five known extant populations in NY, two of them quite large, and an estimated total population of between 2,000 and 4,000 plants, although there is a lack of recent surveys for most populations. In New York Nodding Onion is from a variety of dry, rocky sites, including both anthropogenically disturbed sites such as roadside and powerlines, as well as woodlands and somewhat open oak-hickory forests (NYNHP 2023). There are about 22 historical collections from the last 100 years, and the species likely has become more scarce in that time while the state has slowly become more forested. Unlike many forest herbs, nodding onion is not threatened by deer herbivory. Loss of open habitat to forest succession, fire suppression, and invasion of such habitats by invasive species, are potential threats. The population trends for Nodding Onion appear to be downward, but additional surveys are needed to fully assess the current population size and trends (NYNHP 2023).

I. Status

a. Current legal protected Status

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

b. Natural Heritage Program

i. Global: G5
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:

Allium cernuum is Threatened in New York (Ring 2023). There are 5 existing populations and an additional 22 historical occurrences collected from the 1880s to the 1950s. The 5 extant populations each have hundreds to thousands of plants, with an estimated 2000 to 4000 total, although recent complete census information is lacking for the largest populations. Nodding Onion is currently known from only Chemung and Schuyler counties in southwestern NY, with historical collections known from several other western NY counties. Most of the historical sites have not been resurveyed. The species may have been negatively impacted by succession of open habitats to more closed forest.

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

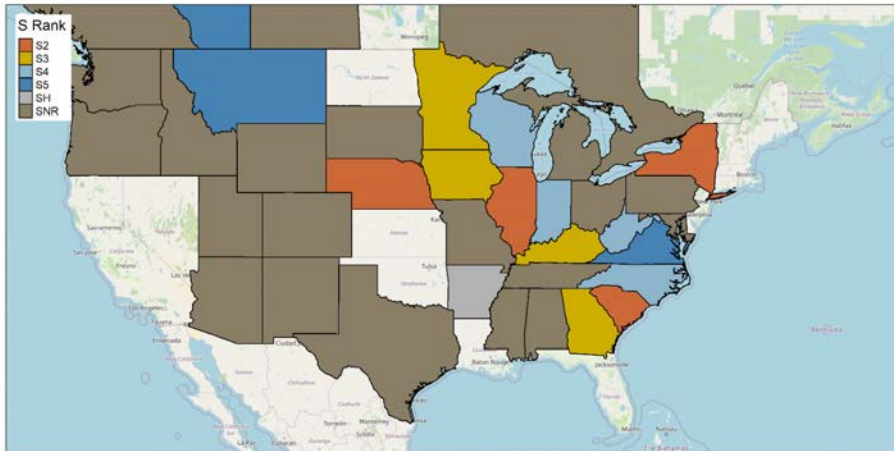


Figure 1: 1 *Allium cernuum* North American distribution.

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

Short Term Trends (<100 years)

Only one of the extant populations has been surveyed since 2001, so the trend from recent decades is largely unknown. The extant populations which were surveyed repeatedly appeared to be stable (NYNHP 2023).

Long term Trends

There are very few collections prior to 1920, and most of the historical locations have not been resurveyed, so the long term trends are unknown (NYNHP 2023).

Details of historic and current occurrence:

Nodding Onion reaches the northeastern edge of its range in NY state. Within the state it is currently known from only Chemung and Schuyler Counties, with historical records from a few other counties in south central and western NY. There are an estimated 2000 to 4000 combined individuals total, but only one population has been surveyed since 2001, and new surveys are needed to fully assess population size and the security of the known populations. Most of the 22 historical collection sites have not been surveyed by NYNHP (NYNHP 2023).

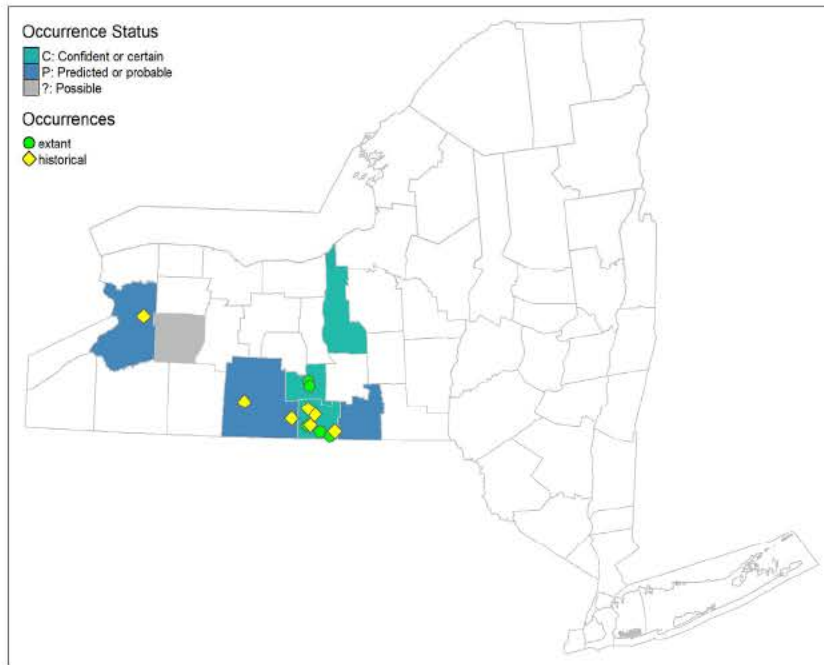


Figure 2 2: NYS distribution for *Allium cernuum*

Table 1. Number of records (element occurrences) of *Allium cernuum* 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.

	# of Records	# of distinct quads	% of quads in State
Pre-1995	11	14	1.4
1995-2004	2	2	0.2
2005-2014	1	1	0.1
2015-2023	1	1	0.1

Commented [SE(1)]: Based on a review of the Eos in Biotics I had 12 Eos Pre95, 4 1995-2004 and the other numbers agreed.

Monitoring in New York

One of extant NY populations is located in a State Park and is regularly monitored (every 5 to 10 years) – all other populations are not monitored and the last known observations are from 2001 or before (NYNHP 2023).

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

VI. Threats

Some populations occur along roadsides and are subject to road salt and future road improvements. Most of the known extant sites are not on protected lands, but no particular threats were noted during surveys. Over time, succession and increasing shade may threaten populations of nodding onion in NY (NYNHP 2023).

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

Yes: No: ✓ Unknown:

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

Roadside management should avoid nearby populations; additional surveys of both extant and historical sites should be undertaken to better assess the status and trends of nodding onion in NY. Protection action and/or habitat management to maintain somewhat open habitats may be needed at some sites.

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 *Allium cernuum*.

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:

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].

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].

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:

Brooks, Lorraine. 2006. Plant data sheet for *Allium cernuum*. University of Washington. (<https://depts.washington.edu/propplnt/Plants/allium%20cernuum.htm>, accessed 2/20/2024).

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.

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.

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.

McNeal D. W. and T. D. Jacobsen. *Allium* L. Pages 224-276 in Flora of North America Editorial Committee. 2002. Flora of North America North of Mexico. Vol. 26. Magnoliophyta: Liliidae: Liliales and Orchidales. Oxford Univ. Press, New York. xxvi + 723 pp.

Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Department of Natural Resources, St. Paul, Minnesota. (Accessed 20 February 2024).

New York Natural Heritage Program. 2024. Online Conservation Guide for *Allium cernuum*. Available from: <https://guides.nynhp.org/nodding-wild-onion/> [Accessed 02/20/2024].

Reznicek, A.A., E. G. Voss, & B. S. Walters. February 2011. University of Michigan. Web. 2-18-2013. <http://www.michiganflora.net/home.aspx>.

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.