

Species Status Assessment

Common Name broad-lipped twayblade **Date Updated:** 2024-01-31
Scientific Name *Neottia convallarioides* **Updated By:** Rachael A. Renzi
Family Orchidaceae

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

Broad-lipped twayblade, or *Neottia convallarioides*, is a perennial herb in the orchid family. There are two other species of *Neottia* of conservation concern in New York state: *N. auriculata* and *N. bifolia*. *Neottia cordata* var. *cordata* is also uncommon in New York (Werier et al. 2023). *Neottia convallarioides*' global distribution is patchy, with scattered occurrences spreading as far north as the Aleutian Islands in Alaska and as far south as mountains in New Mexico and Florida. Despite this small orchid's irregular distribution, its presence is globally secure (NatureServe 2023). It is endangered in New York, as the occurrences here are at the southern edge of its range, at least in eastern North America (NatureServe 2023). It grows in moist, usually mossy, habitat, with records from northern swamps of the Tug Hill and Adirondack regions (NYNHP 2023). There remains one known population in New York, with about 300 plants (NYNHP 2023). Over 13 populations have not been seen since 1980 or earlier (NYNHP 2023). The plants occur in protected wetland habitat, so it is possible that the lack of extant populations is due to lack of observation rather than loss of habitat. Surveys to relocate historic populations and targeted surveys in suitable habitat should be conducted to determine the orchid's true distribution within the state.

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:

Neottia convallarioides is endangered in New York. There is one known population with about 300 plants (NYNHP 2023). A second population was reported around 1980 and is now considered historical (NYNHP 2023). There are 13 historical reports (NYNHP 2023). There are about 300 plants currently known to be growing in New York (NYNHP 2023). Plenty of suitable habitat remains to be searched (NYNHP 2024).

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	No	-	-	-		
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	No	-	-	-		
Vermont	Yes	Unknown	Unknown	Unknown	S3	
Ontario	Yes	Unknown	Unknown	Unknown	S4	
Quebec	No	-	-	-		

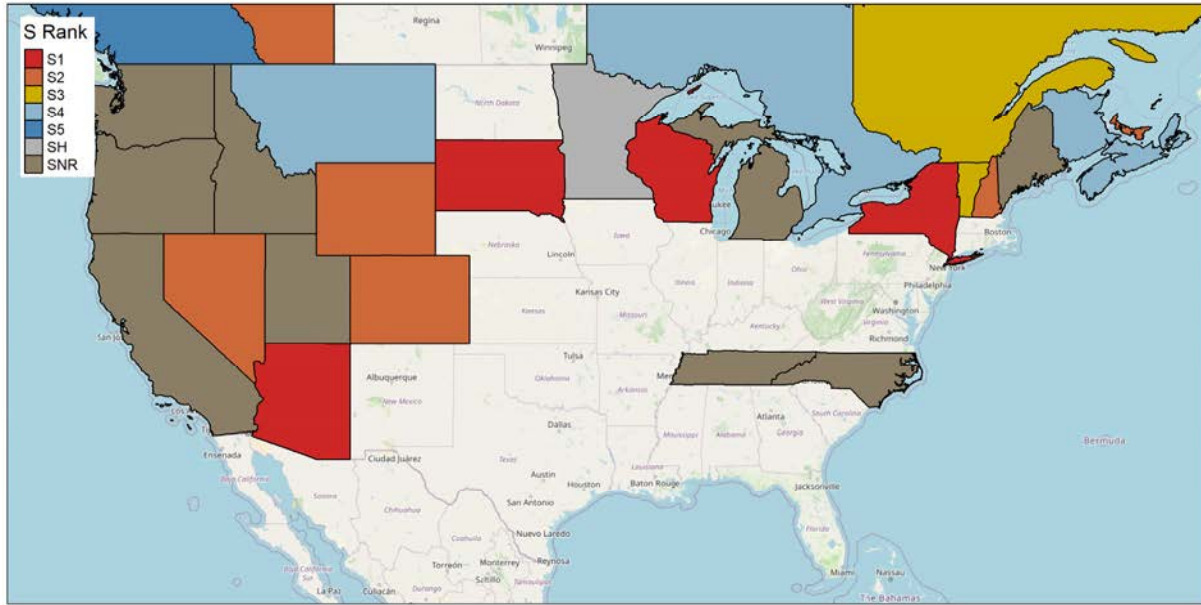


Figure 1: *Neottia convallarioides* North American distribution.

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

New York is at the southern edge of this orchid’s eastern North American range, where it has always been rare. Sightings are infrequent, but the habitat where this orchid is found is difficult to survey, contributing in part to a higher number of historical than extant populations (NYNHP 2024). The plant’s rarity, combined with boot-sucking, difficult-to-survey habitats makes both a long-term and short-term assessment difficult. In short, up-to-date data are lacking on the frequency and quality of populations of *Neottia convallarioides*. In the future, targeted surveys should attempt to locate additional populations in suitable, high-quality habitat within the Adirondacks and Tug Hill (NYNHP 2024). These populations would not necessarily indicate an increasing trend but reflect a better ability to locate populations that likely have been present all along (NYNHP 2024).

Details of historic and current occurrence

In New York, *Neottia convallarioides* appears to be restricted to the Adirondacks and Tug Hill region (NYNHP 2023). Currently, an estimated 300 plants are known to exist within New York. However, the orchid is small and may be easily overlooked (NTNHP 2024). More survey work is needed to determine its distribution within the Tug Hill and Adirondack regions. These regions are known to be colder than other areas of the state, occurring in northern reaches of the state. The two extant sites of *Neottia convallarioies* in New York comprise the southernmost extent of the species’ known range in eastern North America, where it reaches as far north as Newfoundland. The entire range is comprised of scattered and disjunct occurrences reaching as

far north as the Aleutians and as far south as mountain peaks in New Mexico. Despite its patchy distribution, NatureServe (2023) considers this orchid to be common, estimating a global abundance of 10,000 to over 1,000,000 individuals.

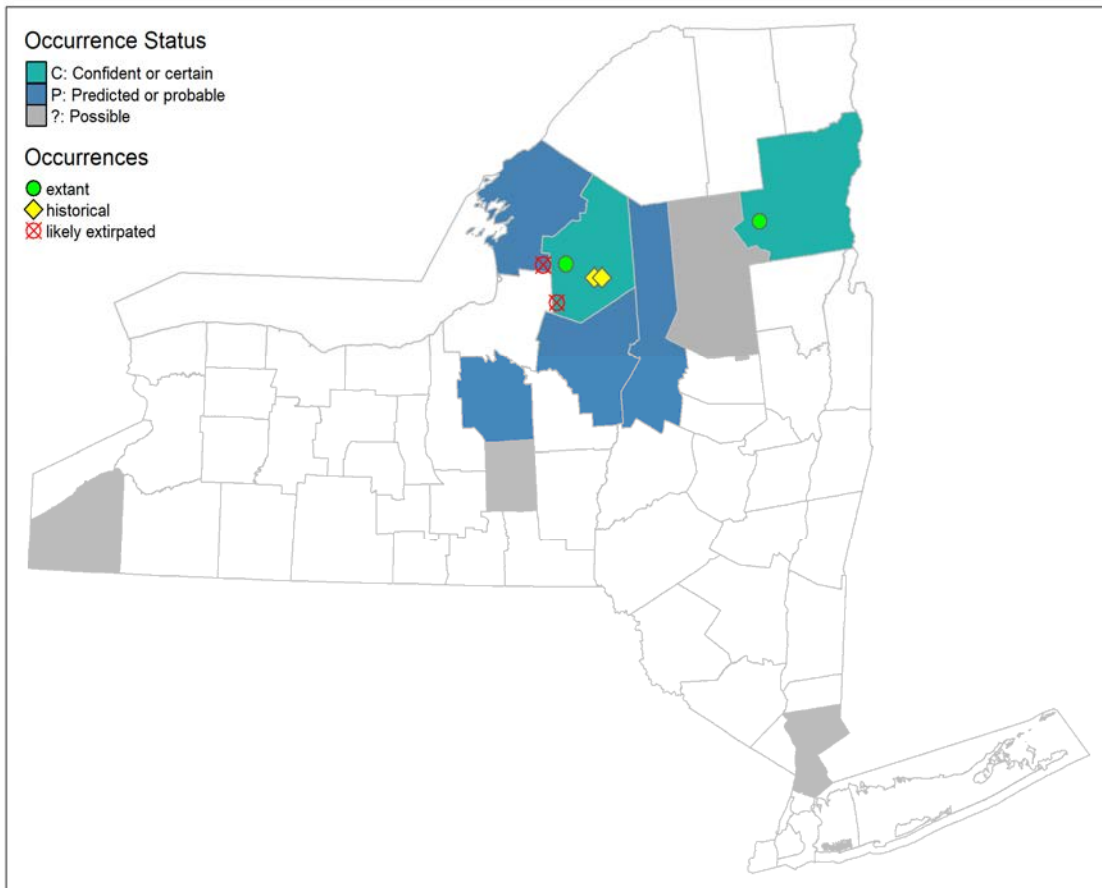


Figure 2: NYS distribution for *Neottia convallarioides*.

Table 1. Number of records (element occurrences) of *Neottia convallarioides* 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	6	9	0.9
1995-2004	1	1	0.1
2005-2014	1	1	0.1
2015-2023	0	0	0.0

Monitoring in New York

This orchid is not regularly monitored. Of the two extant populations, one was last documented via specimen in 1980. The other population was last seen in 2005 with permission from the landowner (NYNHP 2023).

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

NatureServe broad habitat types: Riparian (NatureServe 2023).

Northeastern Habitat Classification Macrogroup: Northern swamp.

NY Ecological Communities: Northern white cedar swamp, Rich hemlock-hardwood peat swamp, Hemlock-hardwood swamp (Edinger et al. 2014, NYNHP 2024).

Habitat or Community Type Trend in New York

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

Habitat Discussion:

This orchid is restricted to northern white cedar swamps in New York, particularly in mossy or seepy areas on sandy soils near streams, lake shores, or wet depressions (New York Natural Heritage Program 2005). Throughout North America, it grows in open woods to boggy meadows, usually in deep shade (Flora of North America 2002, Gleason and Cronquist 1991). It is especially characteristic of damp, mossy or peaty slopes (Fernald 1970, Voss 1972). The general habitat can be described as coniferous woods, hemlock-hardwood forests, cedar swamps, thickets, or shores (Fernald 1970, Voss 1972). It is primarily in permanently saturated, mucky seeps in cool, circumneutral, or mildly acidic soil or rich humus (Flora of North America 2002, Werier et al. 2023).

Associated species in New York include *Osmunda regalis*, *Osmunda cinnamomea*, *Onoclea sensibilis*, *Thalictrum pubescens*, *Coptis trifolia*, *Trientalis borealis*, *Galium*, *Veratrum viridi*, *Allium tricoccum*, *Duchesnea indica*, *Platanthera* sp., *Thuja occidentalis*, and mosses (NYNHP 2023).

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):

Neottia convallarioides is a perennial forb/herb. Although this small orchid can produce up to 20 flowers per inflorescence, it sometimes produces large colonies of plants by sending out runners. *N. convallarioides* flowers later than the other two rare orchids in New York, and fruits persist until October. A touch of the flower column triggers a squirt of a pollen-filled liquid that sticks to the pollinator insect's back. After the dust-like seeds mature and disperse they grow underground for 2-3 years before producing leaves (NYNHP 2024).

Table 2. Phenology of *Neottia convallarioides* in New York State (NYNHP 2023).

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

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

VI. Threats

Today there are few threats that impact this species. Run-off may have some impact, but this is not well studied. Much of the habitat where this plant might be found is either protected on public land or subject to wetland protection laws (NYNHP 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:

No direct management requirements are needed for this orchid except to protect the sites where populations occur, including protection to any waterways that may influence the populations.

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 *Neottia convallarioides*.

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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