

Species Status Assessment

Common Name Hudson River water nymph

Date Updated: 2024-1-30

Scientific Name *Najas muenscheri*

Updated By: Rachael A. Renzi

Family Hydrocharitaceae

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

Hudson River water nymph (*Najas muenscheri*) is an aquatic annual forb in the tape grass, or frog's bit, family (Hydrocharitaceae). *Najas muenscheri* is one of 8 species of the same genus in New York, though not the only listed as a species of concern (Werier et al. 2023). *Najas olivacea* and *N. marina* are state endangered. *N. muenscheri*, however, is endemic to the shallow tidal mud flats and pools in the Hudson River (NYNHP 2023, 2024). What was once a common plant in the Hudson River is now only known from two occurrences (NYNHP 2023). Thus, the total global count of *N. muenscheri* is only hundreds to thousands of plants (NYNHP 2023). Competition from the invasive *Trapa natans*, the European water chestnut, may have contributed to the plant's decreased distribution and range, but further research is needed to support this statement (NYNHP 2024). Many of the historic records of this plant have not been seen since 1965 or earlier, and field surveys are needed to confirm the absence of the plant throughout its historic range (NYNHP 2023).

I. Status

a. Current legal protected Status

i. Federal:

Candidate:

ii. New York:

Endangered

b. Natural Heritage Program

i. Global: G5T2

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:

Najas muenscheri is an Endangered globally rare New York State endemic (Ring 2023). It is only known from the southern part of the Hudson River. Historically this species was abundant in the Hudson River from Piermont just south of the Tappan Zee Bridge north to the junction with the Mohawk River near Waterford. Over this range, there are at least 20 distinct populations which have not been seen in over 70 years. There are 2 populations that are still known to be extant. One occurrence has thousands of plants, while the other has only dozens (NYNHP 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	No	-	-	-		
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	No	-	-	-		
Vermont	No	-	-	-		
Ontario	No	-	-	-		
Quebec	No	-	-	-		

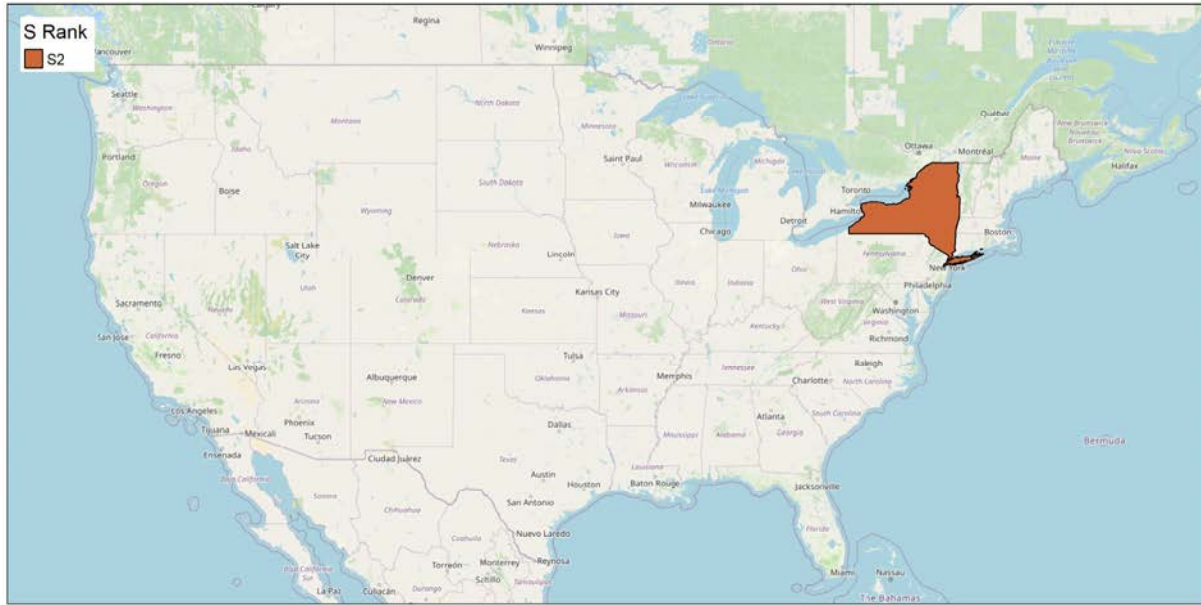


Figure 1: *Najas muenscheri* North American distribution.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
100%	Core	Unknown

III. NY Rarity and Trends

Trends Discussion:

Najas muenscheri is endemic to New York State. While it was considered a common plant here in 1944, the number of known occurrences has dwindled to two (NYNHP 2023). Given the scarcity of pre-1900 data on this plant, little is known of the long-term trends. However, 20 populations are now considered historic (NYNHP 2024). While *Najas muenscheri* was reportedly abundant in 1937, it is now only known from two sites (NYNHP 2024). It is likely that this taxon has been in decline over the last 100 years, possibly due to competition from invasive species. Field research is needed to confirm the absence of *Najas muenscheri* throughout its historic range in New York, especially since the southern estuaries of the Hudson River have been invaded by *Trapa natans* (NYNHP 2024). The number of extant populations has like dwindled due to loss of habitat by competition, but more evidence and field research are needed (NYNHP 2023, 2024).

Details of historic and current occurrence

This taxon is endemic to the lower regions of the Hudson River (NYNHP 2023, 2024, NatureServe 2023). It occurs, at least historically, from Piermont near the Tappan Zee Bridge north to the junction with the Mohawk River (Muenscher 1936, NYNHP 2024). *Najas muenscheri* was once considered common along the tidal mud flats of the Hudson River, but now is known from two locations (NYNHP 2023, 2024). One location, when last seen, had thousands of plants while the other had dozens (NYNHP 2023). New Jersey and Virginia

reports of this taxon are false according to Kartesz (1999) and the Flora of North America (2000). Muenscher (1944) reports this plant only from tidal flats of the lower Hudson River.

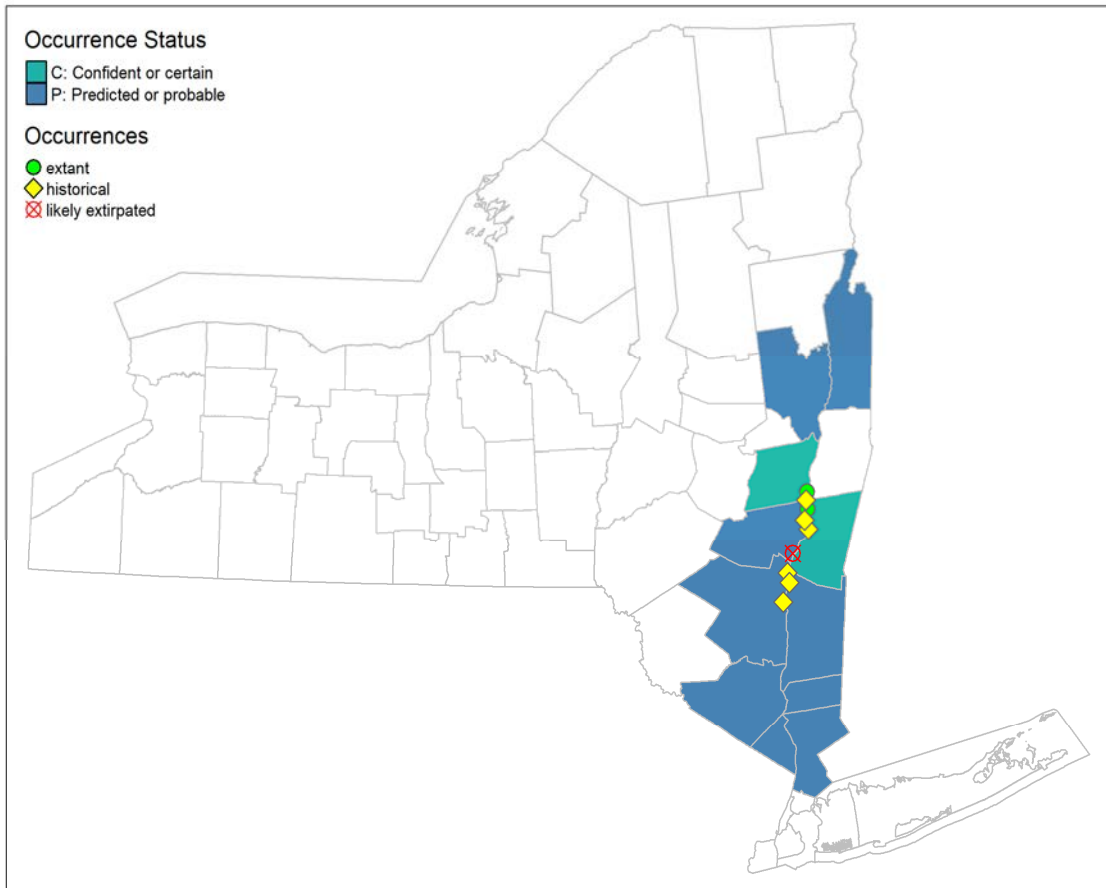


Figure 2: NYS distribution for *Najas muenscheri*.

Table 1: Number of records (element occurrences) of *Najas muenscheri* 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	8	7	0.7
1995-2004	2	2	0.2
2005-2014	1	1	0.1
2015-2023	0	0	0.0

Monitoring in New York

Most of the documented occurrences of *Najas muenscheri* have not been seen since 1965 or earlier. The extant populations were last surveyed in 2001 and 2016 but have not been regularly monitored (NYNHP 2023).

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

NatureServe Habitat Types: Estuarine tidal flats (NatureServe 2023).

Northeastern Habitat Classification Macrogroup: Tidal rivers.

NY Natural Heritage Communities: Brackish subtidal aquatic bed, Freshwater subtidal aquatic bed (Edinger et al. 2014, NYNHP 2023).

Habitat or Community Type Trend in New York

Declining: ✓ **Stable:** **Increasing:** **Unknown:**

Time Frame of Decline/Increase: 70 years

Habitat Specialist **Yes:** ✓ **No:**

Habitat Discussion:

This taxon occurs in shallow freshwater or pools of tidal mud flats of the Hudson River margins, on mucky or gravel and rock soils (Crow and Hellquist 2000; Fernald 1970; Haynes 2000; New York Natural Heritage Program 2007). It was once abundant in the shallow waters of tidal mud flats, near the low tide line between Piermont and Troy (Gleason and Cronquist 1991; Muenscher 1937).

NatureServe broad habitat type: Estuarine tidal flats

New York habitat type: Intertidal Mud and Sandflats (Edinger et al. 2014, 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):*

Najas muenscheri is an annual aquatic forb. Little is known about the biology of this taxon. Other species of *Najas* flowers bloom in summer, then seeds are dispersed via water (DiTomaso et al. n.d.).

Table 2. Phenology of *Najas muenscheri* in New York State (NYNHP 2023).

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

VI. Threats

Since its introduction in New York in 1884, the non-native invasive aquatic plant *Trapa natans* has become common in Hudson River estuaries (NYISI 2024). It threatens one of the two known extant populations of *Najas muenscheri* (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:

The non-native invasive species *Trapa natans* should be controlled in the estuaries and mud flats along the Hudson River.

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 *Najas muenscheri*.

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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