

# Species Status Assessment

<b>Common Name</b>	red pondweed	<b>Date Updated:</b>	2024-03-18
<b>Scientific Name</b>	<i>Potamogeton alpinus</i>	<b>Updated By:</b>	Rachael Renzi
<b>Family</b>	Potamogetonaceae		

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

Red pondweed is a perennial aquatic herb/forb in the pondweed family. It is one of 27 species of *Potamogeton* in NY, 26 of which are native to the state (Werier et al. 2023). It is distributed throughout much of the glaciated regions of the temperate Northern Hemisphere, with NY at the southern edge of its range in eastern North America (IPNI 2024; NatureServe 2023). Elsewhere in its range, *Potamogeton alpinus* can be found in fast-moving and slow-moving rivers and streams, but in NY it occurs mainly in Adirondack lakes (NYNHP 2023; FNA 2000; Todeskino & Wiegleb 1987). It can reproduce vegetatively or by germination from seed, though it is thought that vegetative reproduction is more common (Todeskino & Wiegleb 1987). Research on the rate of sexual and vegetative reproduction of *Potamogeton alpinus* in NY is needed. Further surveys are needed to assess the trends of this plant in NY, as over half of the eight extant populations in NY have only been visited once, and many more sites historical populations have not been checked in recent years (NYNHP 2023).

## I. Status

### a. Current legal protected Status

<b>i. Federal:</b>		<b>Candidate:</b>	
<b>ii. New York:</b>	<u>Threatened</u>		

### b. Natural Heritage Program

<b>i. Global:</b>	<u>G5</u>		
<b>ii. New York:</b>	<u>S1S2</u>	<b>Tracked by NYNHP?</b>	On Active Tracking List

### Other Ranks:

COSEWIC: Not listed in Canada  
IUCN Red List: Least Concern

## Status Discussion:

*Potamogeton alpinus* is Threatened in New York (Ring 2023). There are eight verified occurrences and seventeen historical occurrences. Two of these occurrences were found in 2022 (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	T	
Connecticut	Yes	Unknown	Unknown	Unknown	SNR	
Massachusetts	Yes	Unknown	Unknown	Unknown	SH	
New Jersey	No	-	-	-		
Pennsylvania	Yes	Unknown	Unknown	Unknown	S1	
Vermont	Yes	Unknown	Unknown	Unknown	SNR	
Ontario	Yes	Unknown	Unknown	Unknown	S5	
Quebec	No	-	-	-		

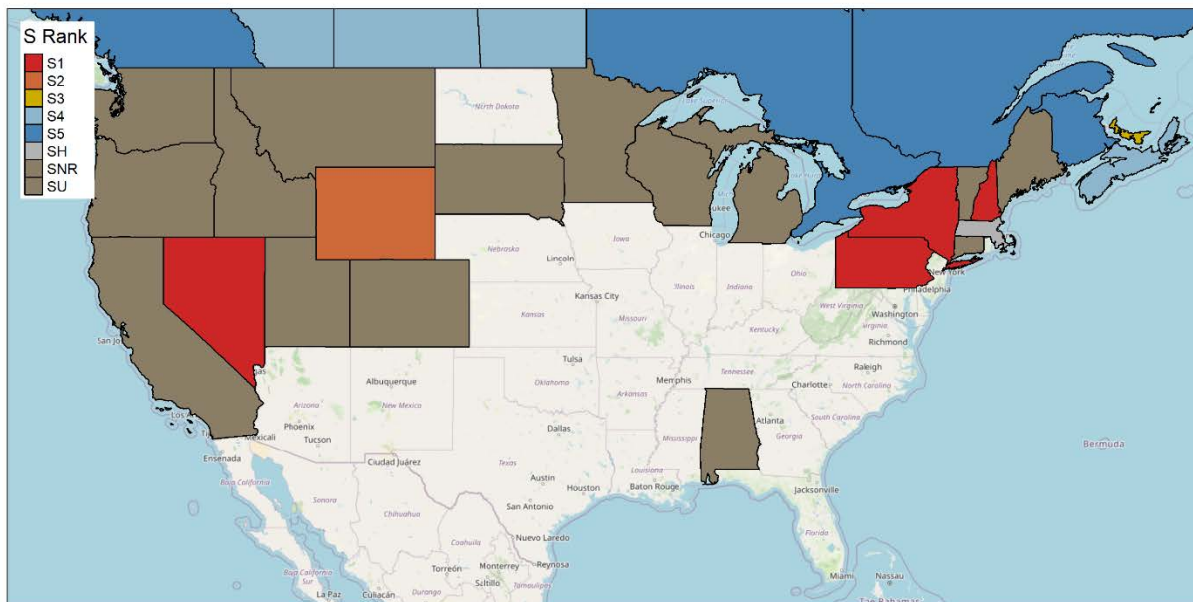


Figure 1. *Potamogeton alpinus* North American distribution.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	≥5,500km

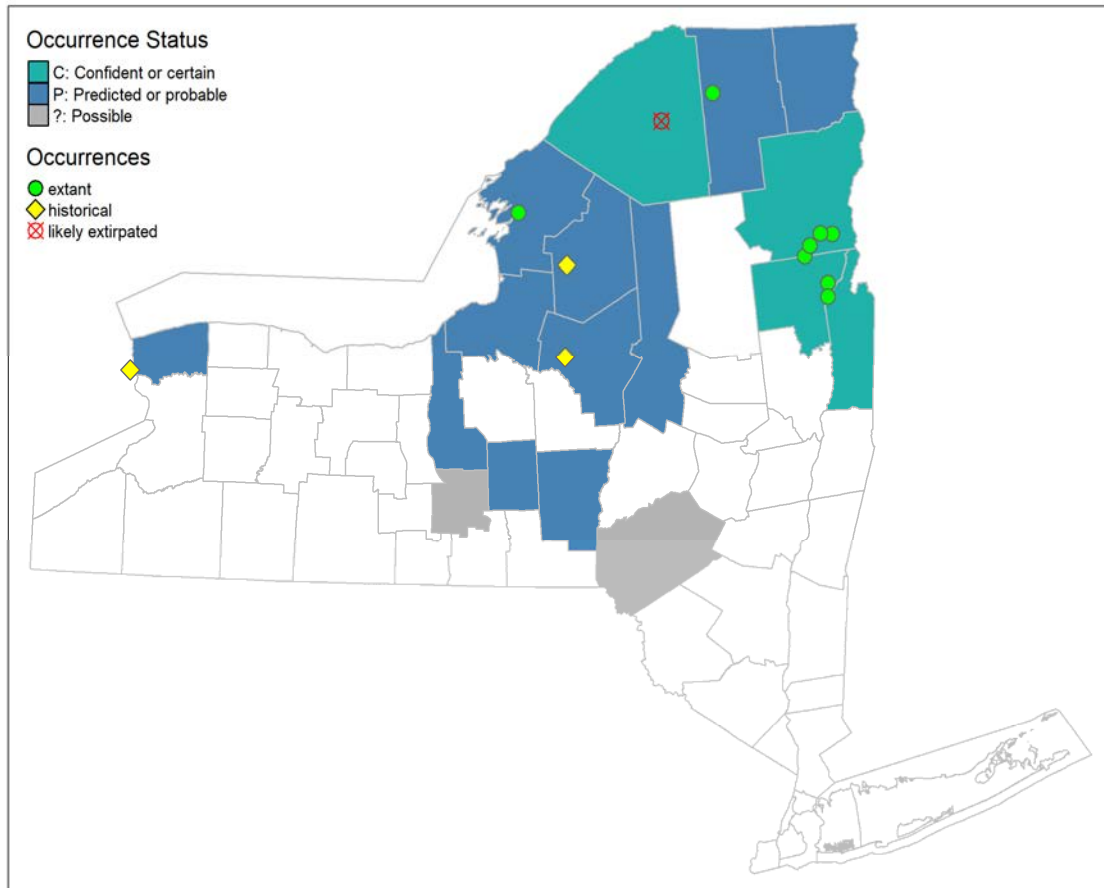
### III. NY Rarity and Trends

#### Trends Discussion

Five of the eight populations have only been visited once, and some visits lack an estimated number of plants. Two of these populations were discovered in 2022 (NYNHP 2023). Repeated visits to the populations are needed to determine trends for *Potamogeton alpinus* in New York.

#### Details of historic and current occurrence

*Potamogeton alpinus* has a circumboreal distribution including Eurasia, Greenland, Canada, and northern parts of the United States (Hultén and Fries 1986 in Robionek et al. 2015; IPNI 2024). New York is near the southern edge of the North American range for *Potamogeton alpinus*. The total NY population is estimated to be over 20,000 ramets, and there are seventeen historical populations. The latest data on the extant populations ranges from 1987 to 2022 (NYNHP 2023).



**Figure 2.** NYS distribution for *Potamogeton alpinus*.

**Table 1.** Number of records (element occurrences) of *Potamogeton alpinus* 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	9	12	1.2
1995-2004	1	1	0.1
2005-2014	0	0	0.0
2015-2023	2	2	0.2

### Monitoring in New York

Seven out of eight of the extant occurrences are in lakes or rivers within the Adirondack Park, owned by DEC. One is in a river in Jefferson County. Fewer than half of the populations have been visited more than once. Six of the populations were last seen in 1988 or earlier (NYNHP 2023). There is no regular monitoring program in place for any of the known populations.

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

Northeast Habitat Classification Macrogroups: Lakes, Large rivers, Medium rivers.

NY Ecological Communities: Oligotrophic dimictic lake, Confined river, Mesotrophic dimictic lake, Oligotrophic pond, Oxbow lake/pond, Unconfined river (Edinger et al. 2014).

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

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

#### **Habitat Discussion:**

In New York, *Potamogeton alpinus* has been found in shallow water near the shore of cold lakes, streams, and slow-moving rivers, generally in moderately acid and oligotrophic water bodies (NYNHP 2023). Elsewhere in its North American range, it has been found in moderately to strongly alkaline waters (Crow and Hellquist 2000) of ponds, lakes, and slow-moving streams (FNA 2000).

Associated species include *Chara spp.*, *Eriocaulon aquaticum*, *Nuphar variegata*, *Nymphaea odorata*, *Pontederia cordata*, *Potamogeton epihydrus*, *Potamogeton gramineus*, *Potamogeton perfoliatus*, *Potamogeton zosteriformis*, *Sagittaria cuneata*, *Sparganium spp.*, and *Vallisneria americana* (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):

*Potamogeton alpinus* is a perennial, aquatic herb species. There are multiple methods of reproduction, including germination from seed, vegetative reproduction from overwintering or summer turions, and reproduction from surviving roots or shoots (Todeskino & Wiegler 1987). These each serve different functions for reproduction within a population. For example, seeds and turions can overwinter, though the dispersal range is farther from the parent plant for seeds than it is for a turion (Todeskino & Wiegler 1987). Plants grown from turions also reach the surface at least 8 months sooner than those grown from seed in aquarium conditions (Todeskino & Wiegler 1987). Reproduction from turions appears more common than germination from seed, though *Potamogeton alpinus* shows a range of intraspecific variability and phenotypic plasticity (Todeskino & Wiegler 1987; Kaplan 2002). Research on the rate of vegetative and sexual reproduction of *P. alpinus* in NY is needed.

*Potamogeton alpinus* can grow in both slow-moving and fast-moving water, though in NY is often in lakes in the Adirondacks (Todeskino & Wiegler 1987; NYNHP 2023). It can take on different forms in these varying conditions. In fast-moving water, its floating leaves stabilize the plant, and decreased shoot diameter allows for more elasticity in a heavy flow (Robionek et al. 2015). It also reduces water pressure by increasing shoot density and elongating floating leaves (Robionek et al. 2015). In slow moving waters, *P. alpinus* avoids growing floating leaves in high light intensities to reduce stress and save resources (Robionek et al. 2015).

**Table 2.** Phenology of *Potamogeton alpinus* in New York State (NYNHP 2023).

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

## VI. Threats

Pollution may threaten the species in Lake George.

**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:**

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 *Potamogeton alpinus*.

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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