

Species Status Assessment

Common Name	white mountain saxifrage	Date Updated:	2024-03-24
Scientific Name	<i>Saxifraga paniculata</i> <i>ssp. paniculata</i>	Updated By:	Elizabeth Spencer
Family	Saxifragaceae		

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

White mountain saxifrage (*Saxifraga paniculata* ssp. *paniculata*) is a perennial herb in the Saxifrage family (Saxifragaceae). The plant is circumboreal occurring in North America, and Europe in montane, and arctic areas. Within eastern North America, it may be found south to northern New England, northern New York, the Atlantic Provinces, Ontario and Quebec (FNA 2009). The name *Saxifraga paniculata* ssp. *paniculata* was applied based on Reisch's 2008 study which found the genetics of the North America plants were not distinct from those in Europe as was previously thought. There are 3 species of *Saxifraga* in New York, all of which are native (Werier et al. 2023). Authors recognize approximately 390 species of *Saxifraga* globally, 25 of which occur in North America (FNA 2009).

With only two extant populations documented *Saxifraga paniculata* ssp. *paniculata* is endangered in New York where it has only been documented in Essex County. It has likely always been rare in New York where it is at the southern limit of its range in North America. (NYNHP 2023).

In New York, white mountain saxifrage occurs on dry to seasonally seepy cliff communities and possibly calcareous cliff inclusions on vertical to near vertical cliff faces, associated ledges and cracks (sometimes in association with mosses on thin soils within the cracks) on anorthosite bedrock. In addition, one group of plants occurs on loose soil at a cliff base (Edinger et al. 2014, NYNHP 2023).

Impacts from recreational use, changes in the climate that shift the microclimate, and the possible introduction of the invasive species, are potential threats to this species. The short and long-term trends of this species are not known, although a second extant population was found in 2021. The censuses have been inconsistent among the surveys for the population first documented in 1926 and last thoroughly surveyed in 2006. The second population has only been visited once. Based on the most comprehensive past surveys the populations had 10,000 and 278 reproductive plants respectively (NYNHP 2023). More complete surveys of both populations over time are needed to understand the trends in NY.

I. Status

a. Current legal protected Status

i. Federal:

Candidate:

ii. New York:

Endangered

b. Natural Heritage Program

i. Global:

G5TNR

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:

Saxifraga paniculata ssp. paniculata is Endangered in New York (Ring 2023). There are only two verified occurrences in New York, from an isolated cliff face in the Adirondacks. There are 5 historical occurrences, dating back to the 1920s, and all from Essex County.

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	S1	
Ontario	Yes	Unknown	Unknown	Unknown	S4	
Quebec	No	-	-	-		

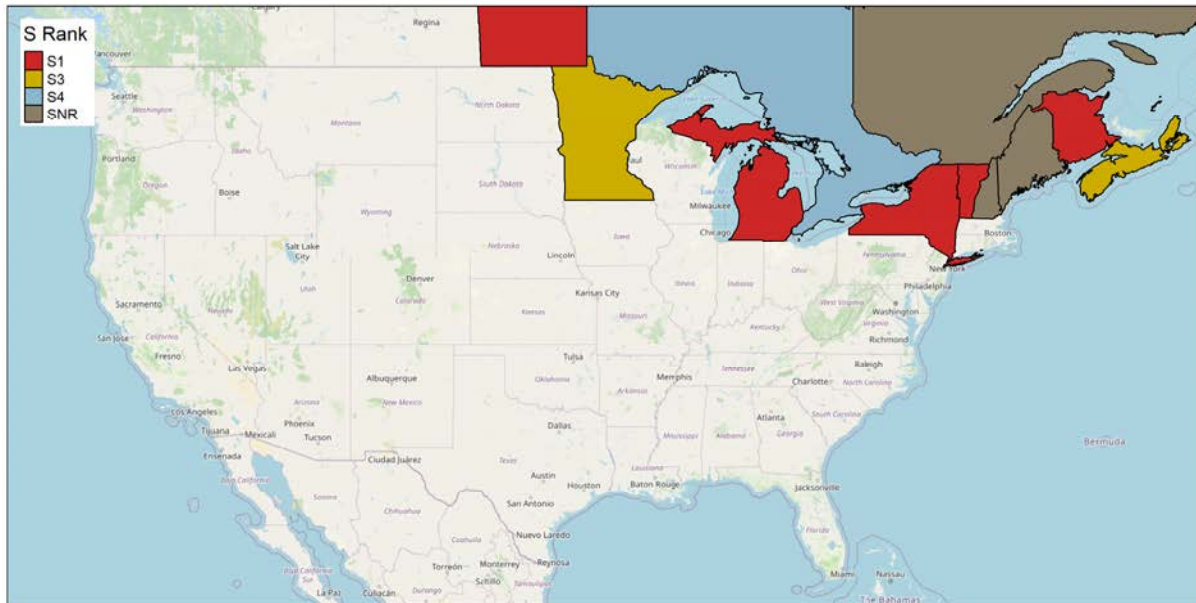


Figure 1: *Saxifraga paniculata* ssp. *paniculata* North American distribution. This map uses NatureServe information for *Saxifraga paniculata*.

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

The short and long-term trends of *Saxifraga paniculata* ssp. *paniculata* are unclear due to the inconsistent efforts among recent censuses. Given the discovery of a second population in 2021, the short-term trend could be suspected to be increasing in New York. More time and surveys are needed to understand the trends of *Saxifraga paniculata* ssp. *paniculata* in New York.

Details of historic and current occurrence

Saxifraga paniculata ssp. *paniculata* has only been reported from Essex County where the two verified populations have been found on protected, state-owned forest preserve lands within the Adirondacks. It was first documented by House in 1923, with a second population discovered in 2021 (NYNHP 2023). The original population has been revisited in 1946, 1949, 1990, 2006 and 2023. The early surveys (pre-1990) did not include detailed censuses, and the most recent survey only visited a portion of the occurrence. The second population was found by Werier in 2021 and has only been visited and censused once. The habitat is difficult to access due to its steepness. An additional five historical records from the 1920s are known but they lack detailed data.

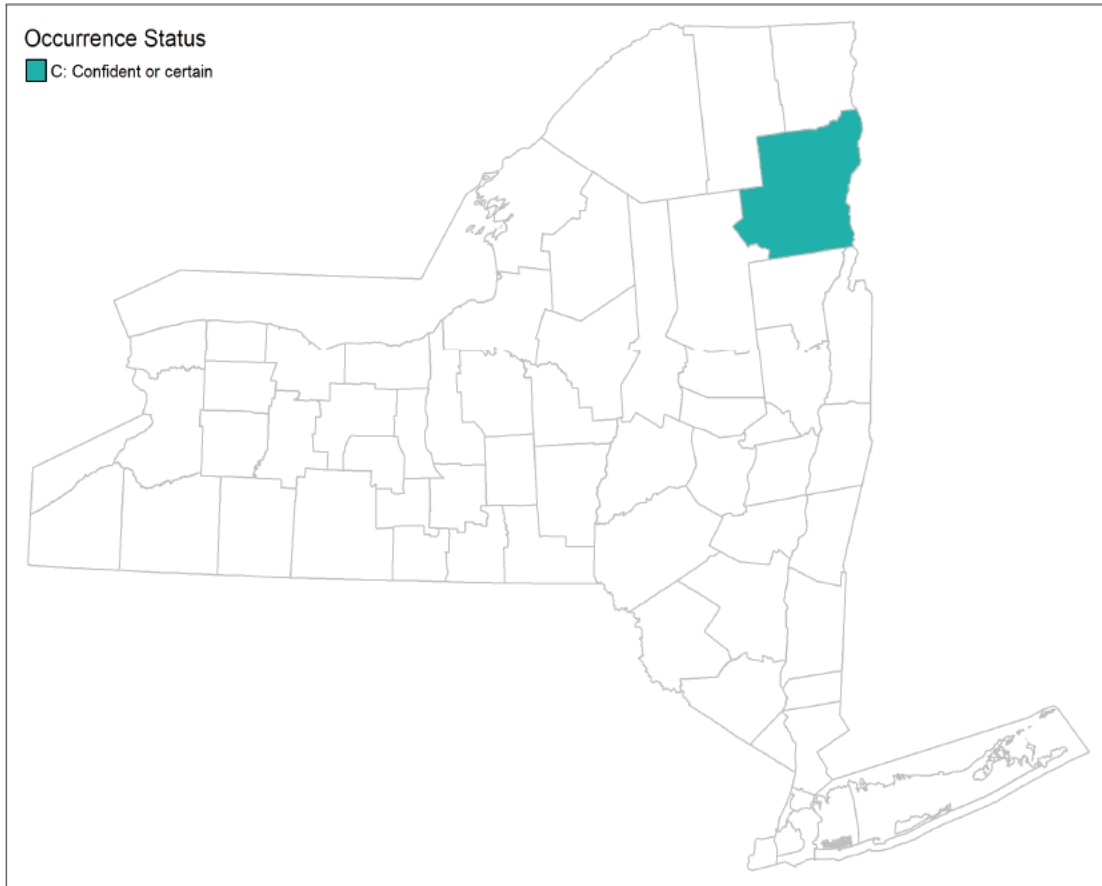


Figure 2: NYS distribution for *Saxifraga paniculata* ssp. *paniculata*.

Table 1. Number of records (element occurrences) of *Saxifraga paniculata* ssp. *paniculata* 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	1	1	0.1
1995-2004	0	0	0
2005-2014	0	0	0
2015-2023	2	2	0.2

Monitoring in New York

Although one of the two extant populations has been surveyed multiple times, no regular monitoring of the two known population has occurred to date. Both occur on protected forest preserve lands in the Adirondacks and were last surveyed in 2021 and 2023.

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

Northeastern Terrestrial Habitat Macrogroup: Cliff and Talus

NY Natural Heritage Communities: Calcareous cliff community, Cliff community (Edinger et al. 2014).

Habitat or Community Type Trend in New York

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

Habitat Discussion:

The two verified sites for New York white mountain-saxifrage are on an immense south to southeast-facing cliff face with a nearly vertical exposure, and west to northwest facing on cliffs, ledges, and eroded soils at the base of cliffs. The plants are growing in the open from rock ledges, and cracks, in the primarily anorthosite rock face, at times in association with mosses co-occurring in the cracks. The moisture regime is seepy to seasonally dry (New York Natural Heritage Program 2023, Werier et al. 2024). Crevices in basic rock along Lake Superior (Voss 1985). Exposed, calcareous gravel and rocks (Haines and Vining 1998).

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):

Saxifraga paniculata ssp. *paniculata* is a perennial forb/herb, that lives at least two years (Native Plant Trust 2024). It is stoloniferous and will spread by forming new vegetative clumps at the stolon ends (MNFI 2008). It also reproduces sexually. Warning (1909) found the plant to be markedly protandrous (producing and dispersing pollen before the stigmas become receptive) which greatly favors outcrossing, which is also seen in the other rare *Saxifraga* in New York. Self-pollination does also occur but is less common. Flies, bees and moths have been noted as its pollinators (North America Pollinator Protection Campaign and Pollinator Partnership 2017). Williams and Rupp (1966) report that dispersal happens via either seeds or vegetatively via detachment of rosettes, which easily re-root. No studies specifically address white mountain saxifrage's persistence in the seedbank, but an unpublished study from the Alps demonstrated that viable seeds of another cliff dwelling species in New York, *Saxifraga aizoides*, persist in the soil for at least five years (Raffl et al. 2007).

Table 2. Phenology of *Saxifraga paniculata* ssp. *paniculata* New York State (NYNHP 2023).

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

VI. Threats

Damage to the cliff face by rock climbers, and, over time, climate change, are potential threats to this cliff-dwelling, boreal species. Given the recreational visitation of the sites supporting the populations, another threat could come from the introduction of invasive species that could compete with the plants for light and space.

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:

Monitor the impacts of recreation and climbing (in particular) to the populations and their habitat. Educate the climbing community about the impacts of vegetation removal from white mountain saxifrage habitats. Monitor the sites for the introduction and spread of invasive species.

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 *Saxifraga paniculata* ssp. *paniculata*.

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

Conservation Actions	
Action Category	Action
Land/water management	2.2. Invasive/problematic species control
Land/water management	2.3. Habitat & natural process restoration
Education & awareness	4.3. Awareness & communications

VII. References

This SSA drew heavily from these resources:

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