Species Status Assessment

Common Name	yellow mountain saxifrage	**Date Updated:**	2024-03-21
Scientific Name	*Saxifraga aizoides*	**Updated By:**	Elizabeth Spencer
Family	Saxifragaceae		

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

Yellow mountain saxifrage (*Saxifraga aizoides*) is a perennial herb in the Saxifrage Family (Saxifragaceae). The plant is circumboreal generally, occurring in North America, and Europe. Along its southern range in Europe is occupies subalpine settings and scattered disjunct lower elevation settings believed to be glacial refugia (Lutz 2000). Within North America, it may be found south to Vermont, western New York, northern Michigan, and British Columbia (Natureserve 2023). There are 3 species of *Saxifraga* in New York, all of which are native (Werier et al. 2023). *Saxifraga* has received some different taxonomic treatments, but no major disagreements linger. It has a global distribution spanning North America, South America, Eurasia, and North Africa in mostly montane, arctic and north-temperate areas. Authors recognize approximately 390 species globally, 25 of which occur in North America (FNA 2009).

In New York, *Saxifraga aizoides* plant has a limited range, and specialized habitat. It occurs in seepage areas on open limey-shale cliffs or within the mist of a nearby waterfall. These sites have been lumped under the cliff community designation, but they may be best described as vertical marly fens. With only eight populations documented, it has likely always been rare in New York where it is at the southern limit of its range in North America. Of the known populations, six are extant, one is possibly extirpated, and another is historical. The extant and possibly extirpated populations are known from the Tug Hill and Finger Lakes regions in Jefferson, Livingston, Oneida, Oswego and Tompkins Counties. The historical population is from the southern Tug Hill (NYNHP 2023).

The status of *Saxifraga aizoides* in New York is uncertain over the long-term. Only one new population has been documented since 1977 and survey efforts have not been consistent. Just a quarter of the populations have been surveyed in the last decade. Those surveys suggest there may be a decline in the number of individuals over the short-term in some populations. More surveys are also needed to understand the short-term trends of *Saxifraga aizoides* (Ring 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:

Saxifraga aizoides is Threatened in New York (Ring 2023). This plant has a limited range, and specialized habitat. It has likely always been rare in New York where it is at the southern limit of its range in North America. There are eight known populations with six extant, one possibly extirpated and one historical. Three of these extant populations are on well-protected cliffs while another is only partially protected. Some cliffs may be subject to natural or artificial sloughing while all are potentially vulnerable to catastrophic storm damage. When not in flower the plant may be easily overlooked in areas surveyed remotely via binoculars or scopes. One population consists of an estimated 17,500 plus individuals. The two next largest have an estimated 650 to 1000 plus individuals in surveys not covering privately owned areas. The remaining extant populations range from ten to 100 plants. The historical site has never been censused (NYNHP 2023). More surveys are needed to understand the short-term trends of *Saxifraga aizoides in New York.*

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

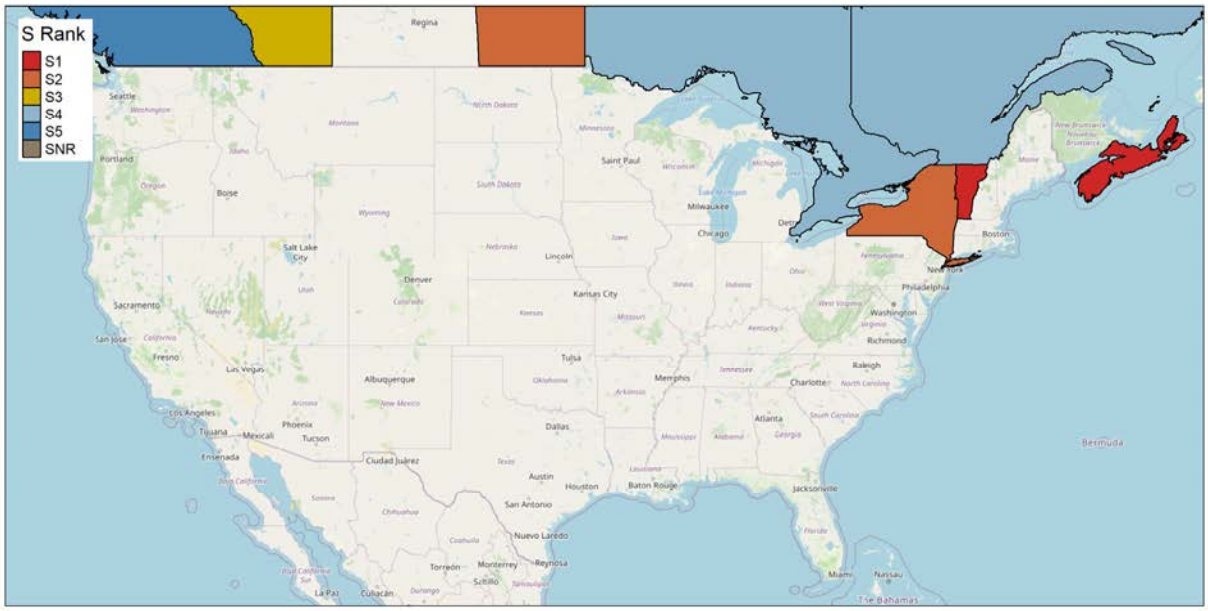

Figure 1: Saxifraga aizoides *North American distribution.*

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

The number of *Saxifraga aizoides* populations in New York has remained stable over the long-term. Short-term trends (<100 years**)** are uncertain due to the variability in survey effort among the individual visits and sites. There are eight known populations with six extant, one possibly extirpated and one historical. The monitoring results at the one of the largest populations indicate it may be experiencing decline, via the loss of some sizable subpopulations. In addition, its component subpopulations on private land have not revisited since 2007. Three of the extant populations have been visited in 2011, 2015 and 2021. The remaining three were last visited between 1991 and 1993. The potentially extirpated population was last seen in 2002 but not detected during a through resurvey in 2012.There is only one historical population and additional surveys are needed to assess its status since it was last visited was 1931 (NYNHP 2023).

Details of historic and current occurrence

Yellow Mountain Saxifrage is limited within the state to central New York, ranging from the Tug Hill Region west to the Genessee River Gorge and south to Taughannock Ravine in the southern Finger Lakes. This plant is usually associated with the spray zone of waterfalls or within seepage areas of cliffs made up of fosilliferous shale.

There are 10,000’s of individuals with most of the plants concentrated in two of the eight populations. The next closest population is in northern Vermont

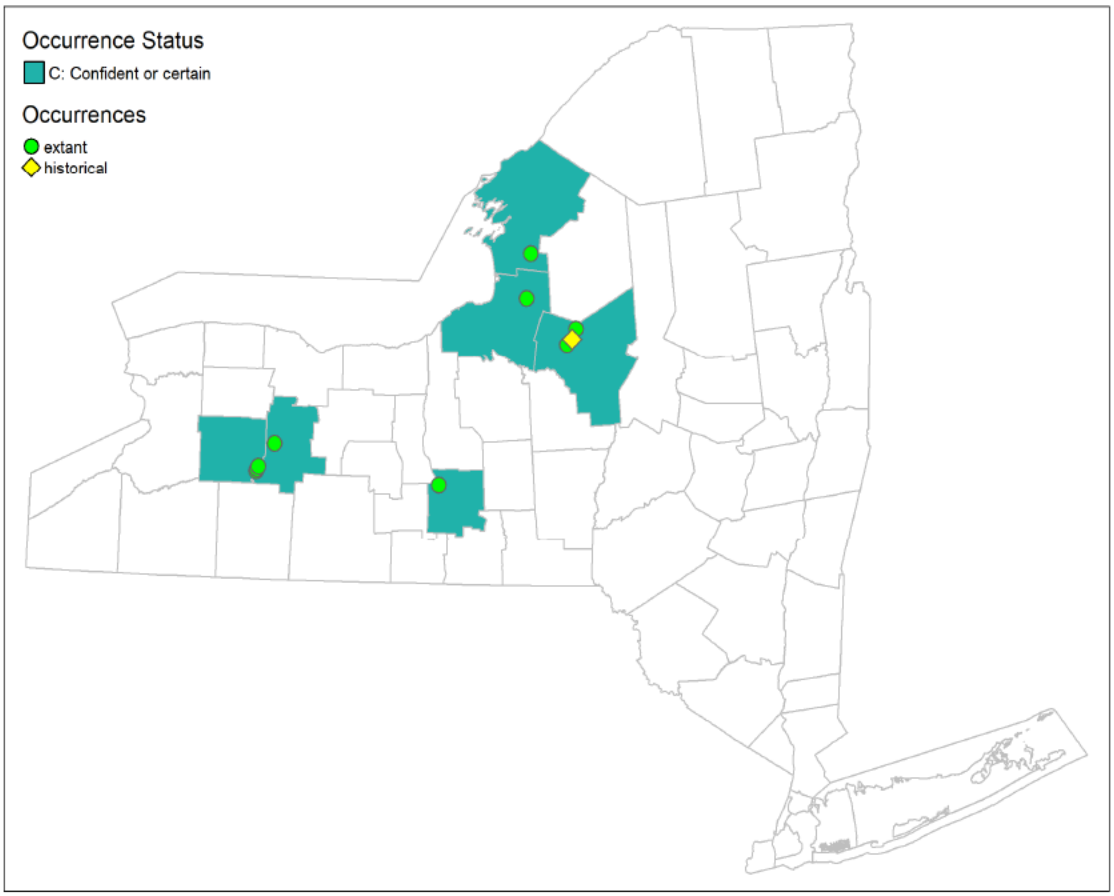

Figure 2: *NYS distribution for* Saxifraga aizoides

Table 1. *Number of records (element occurrences) of* Saxifraga aizoides *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	3	3	0.3
2005-2014	3	3	0.3
2015-2023	2	2	0.2

Monitoring in New York

Two of the eight populations occur on State Parks and are monitored on a ten year cycle. An additional two populations occur on State Forest lands, these are monitored on a five year cycle. One extant population has not been seen since 2002 despite surveys for it. The two of the remaining three extant populations were last seen in 1993, while the third was last seen in 1991. The remaining population is historical and has not been revisited since 1931 (NYNHP 2023).

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

Northeastern Terrestrial Habitat Classication Macrogroup: Cliff and Talus.

NY Natural Heritage Communities: Cliff community, Shale cliff and talus community, Calcareous 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:

A plant of seepage areas, *Saxifraga aizoides* grows on open limey-shale cliffs and ledges or in mist of a nearby waterfall. These sites have been lumped under the cliff community designation, but they may be best described as vertical marly fens. The sites are usually surrounded by birch, hemlock, and maple. (New York Natural Heritage Program 2024). On calcareous gravels or cool and damp soils (Fernald 1950). It often grows in association with the other rare plants, *Primula mistassinica* and *Pinguicula vulgaris (*Werier et al. 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):*

Saxifraga aizoides is a perennial forb/herb (NYNHP 2023, Werier et al. 2023)., It is pollinated by flies, syrphids, beetles and via self-pollination. Higher rates of seed set and germination have been documented in the insect pollinated plants (Meier and Holderegger 1998, Raffl et al. 2007). Individual plants and clones often exhibit vigorous annual vegetative growth, with Individual rooted shoots documented to persist for several years (Kobiv 2016). An unpublished study from the Alps demonstrated that viable seeds persist in the soil for at least five years (Raffl et al. 2007). Dispersal occurs via water or gravity for both seeds and vegetative material, while the seeds are also redistributed by wind. (Kobiv 2016 and Raffl 2007)

Populations studied in Europe have been confirmed to be functioning as meta-populations which may be the case in the larger NY populations as well (Kobiv 2016 and NYNHP 2023). More research is needed on the North America populations.

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

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

VI. Threats

Even though the sites supporting most of the populations are inaccessible and less subject to direct human disturbance, the threats to these plants seem to be increasing. Since 2015, at a couple of sites where plants occur on lower portions of cliff outcroppings, invasive plants (*Tussilago farfara* and *Reynoutria* spp.) pose an imminent threat as they colonize and spread from source populations within the population boundaries or from adjacent areas. Changes in the amount of groundwater available to the occupied sites could affect them in the future (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:

Control of the invasive species invading or imminently threatening existing populations is a priority to reduce competition for both light and space. Sites should be monitored for changes in groundwater availability (NYNHP 2023).

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 aizoides.

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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