

Species Status Assessment

Common Name	alpine sweetgrass	Date Updated:	2023-03-07
Scientific Name	<i>Anthoxanthum monticola</i> <i>ssp. monticola</i>	Updated By:	Richard M. Ring
Family	Poaceae		

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

Alpine sweetgrass is a perennial species in the grass family. It is one of five species of *Anthoxanthum* known from New York, three of which are native. (The species was formerly considered part of the genus *Hierochloe*, and appears under the synonym *Hierochloe alpina* in some floras. (Werier *et al* 2024)). Subspecies *monticola* is the only subspecies of *Anthoxanthum monticola* found in NY. The species as a whole is boreal in its distribution, ranging from the Atlantic Arctic to Alaska and Canada, and south at alpine elevations. Subspecies *monticola* ranges from Greenland through eastern Canada and reaches its southern limit on mountain summits in New York and New England. In New York, it occurs only on alpine summits of the Adirondack high peaks (NYNHP 2023), mostly in alpine meadow natural communities. There are eleven known extant populations in New York. Recent surveys have not censused the entire populations of the extant sites, but there are an estimated 600 to 1000 plants (Howard *et al* 2021, NYNHP 2023). Damage from recreational use, and at least at one site, invasive species, are potential threats to this species, in New York, although ongoing stewardship efforts have facilitated recovery of these fragile habitats. Climate change will further reduce the amount of available habitat of this alpine, boreal species. Continued monitoring and stewardship activity is needed.

I. Status

a. Current legal protected Status

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

b. Natural Heritage Program

i. Global:	<u>G5T3T5</u>		
ii. New York:	<u>S2</u>	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:

Anthoxanthum monticola ssp. *monticola* is Threatened in New York (Ring 2023). There are eleven known extant populations and about half of these have fewer than 100 plants. All the historical collection sites currently have extant populations, and it has been discovered at some additional sites, all on the high peaks in the Adirondacks (Essex County) (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	Yes	Unknown	Unknown	Unknown	S1	
Ontario	Yes	Unknown	Unknown	Unknown	S1	
Quebec	No	-	-	-		

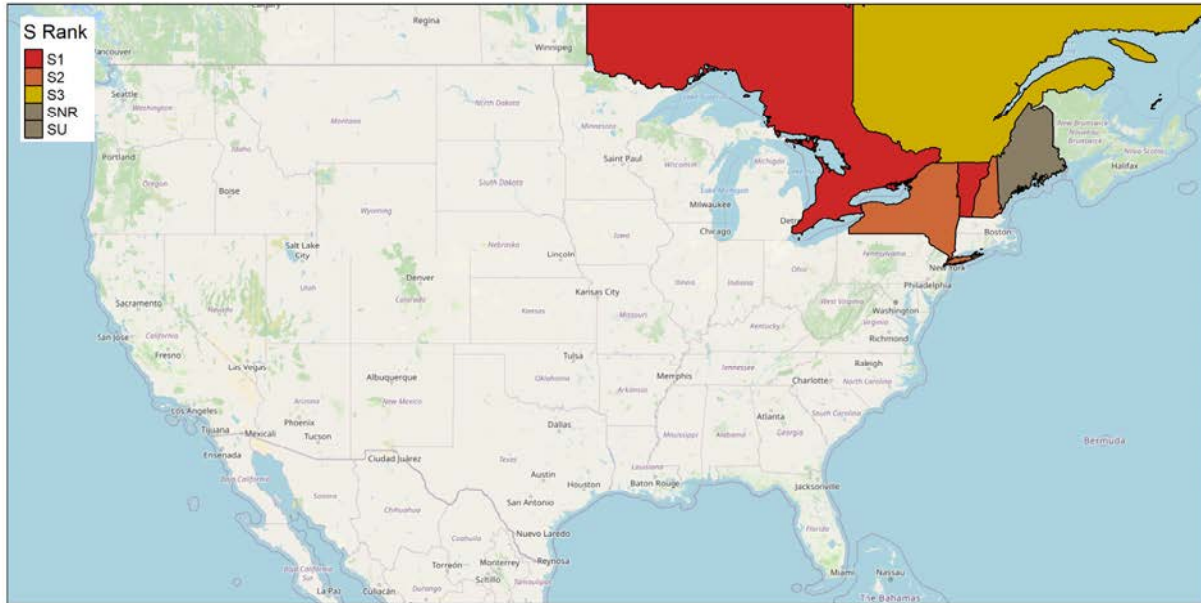


Figure 11: *Anthoxanthum monticola ssp. monticola* North American distribution.

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 known populations has grown from five historical sites prior to 1980, to eleven in the current day. Therefore, the short-term trend is upward in terms of number of populations, though this is more likely the result of additional inventories than actual spread of the species. Additionally, the available habitat and population size at Mount Marcy and the other most-visited peaks has likely increased since the 1990s, as a result of stewardship by the Adirondack Mountain Club's Summit Steward Program (NYNHP 2023). The long-term trend is also upward in terms of number of known populations. However, most sites have not been visited since 2013 or before, and many have never received complete surveys of the summit habitat for alpine sweetgrass. More surveys are needed to fully assess population trends for this species (NYNHP 2023).

Details of Historic and Current Occurrence

In NY, Alpine sweetgrass is limited to the alpine zone of the high peaks of the Adirondacks, in Essex County. It is a circumboreal species, more common at higher latitudes, and NY is near the southern edge of its range. The overall population size is likely less than 1000, but many of the populations have never been fully censused, so more surveys are needed to better estimate population sizes at most sites. Alpine sweetgrass is extant at all the historically documented sites, and has been documented at new sites over the last 30 years as a result of more intensive surveys (NYNHP 2023, Howard *et al* 2021).

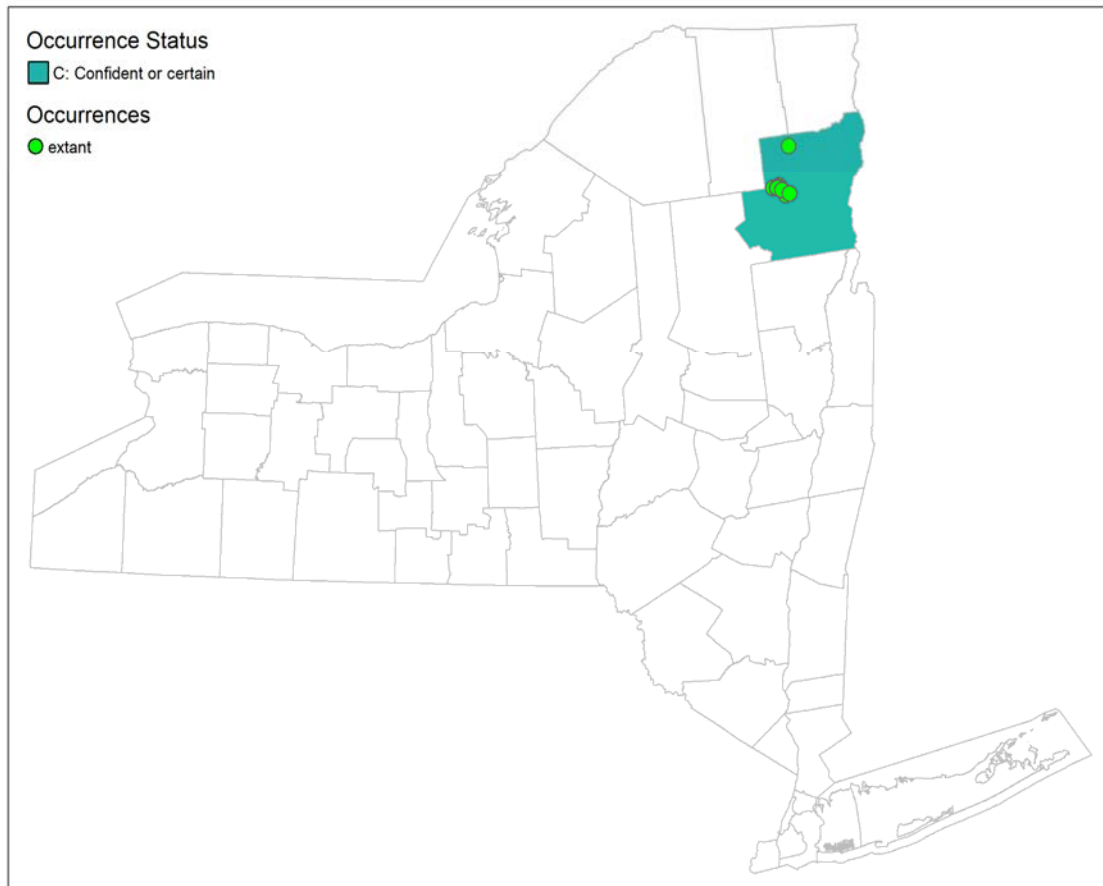


Figure 22: NYS distribution for *Anthoxanthum monticola* ssp. *monticola*

Table 1. Number of records (element occurrences) of *Anthoxanthum monticola* ssp. *monticola* 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	3	0.3
1995-2004	7	4	0.4
2005-2014	8	4	0.4
2015-2023	1	1	0.1

Monitoring in New York

There is some plot monitoring of alpine summits which have Alpine Sweetgrass, conducted by the Adirondack Mountain Society, about every six years. However, this does not include all

extant sites for Alpine Sweetgrass, or overall population estimates. All the known populations are owned by the NY Department of Environmental Conservation. The last known updates of six of the known extant sites is 2013; for the remainder, it is 2006 or before (NYNHP 2023).

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

NE Habitat Classification Macrogroup: Alpine, Cliff and Talus

NY Natural Heritage Communities: Cliff community, Open alpine community

Habitat or Community Type Trend in New York

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

Habitat Discussion:

In New York, alpine sweetgrass is restricted to ten of the highest summits in the Adirondacks, as well as one slightly lower, massive, exposed cliff face. These sites are alpine meadows, often on very thin soil with extensive exposed bedrock (New York Natural Heritage Program 2024). In New England it is also restricted to alpine areas (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):

Alpine sweetgrass is a perennial, cespitose (clump-forming) grass species. Like all grasses it is wind-pollinated; alpine sweetgrass and all of the genus *Anthoxanthum* is self-incompatible, meaning it must be pollinated by a genetically different individual to create fertile seeds (Packer 1974). The seeds have long awns (extended, sharp tips) which may assist in their dispersal by animals. Clumps of this species may survive for many years, although the life span of individual plants is unknown. Populations near the summits of Mount Marcy, Algonquin and Whiteface mountains have been documented for over 100 years (NYHP 2023).

Table 2. Phenology of *Anthoxanthum monticola* spp. *monticola* in New York (NYNHP 2023).

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

VI. Threats

At least two populations have been impacted by trampling from hikers. At one population erosion appears to be a problem. One other population is potentially threatened by rock climbing activities (NYNHP 2024). The warming climate is a threat to the persistence of the

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