Species Status Assessment

Common Name	bearberry willow	**Date Updated:**	2024-03-07
Scientific Name	*Salix uva-ursi*	**Updated By:**	Rachael A. Renzi
Family	Salicaceae		

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

Bearberry willow is a perennial shrub in the willow family. It is one of 25 species in the genus *Salix* in NY, but one of the 19 considered native to the state (Werier et al. 2023). *S. uva-ursi* is an arctic-alpine North American endemic, occurring from Nunavut east to Greenland and south to Quebec and the mountains of northern New England and New York (Argus 2005). There are 11 known populations, all of which are known from the exposed alpine regions of the High Peaks in the Adirondacks (NYNHP 2023, 2024). Due to this area's popularity with hikers, some *Salix uva-ursi* populations are at risk from trampling (NYNHP 2023, 2024). While four of the populations are known to have persisted for at least 100 years, little is known about the changes in population sizes over the years (NYNHP 2023). The plants themselves can live for upwards of 100 years (Opała-Owczarek et al. 2020). In Canada, it was found that climate change may be to blame for slower growth rates of these plants in the last few decades (Opała-Owczarek et al. 2020). In NY, consistent surveys of the populations of *Salix uva-ursi* are needed to appropriately assess trends.

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:

Salix uva-ursi is Threatened in New York (Ring 2023). There are 11 known populations of *Salix uva-ursi* in NY, all of which are known from the High Peaks in the Adirondacks (NYNHP 2023, 2024). One population (which is close to another one and may be considered only a sub-population) is believed to be extirpated (NYNHP 2023). Some populations are threatened by trampling from hiker traffic (NYNHP 2023, 2024).

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	No	-	-	-		
Quebec	No	-	-	-		

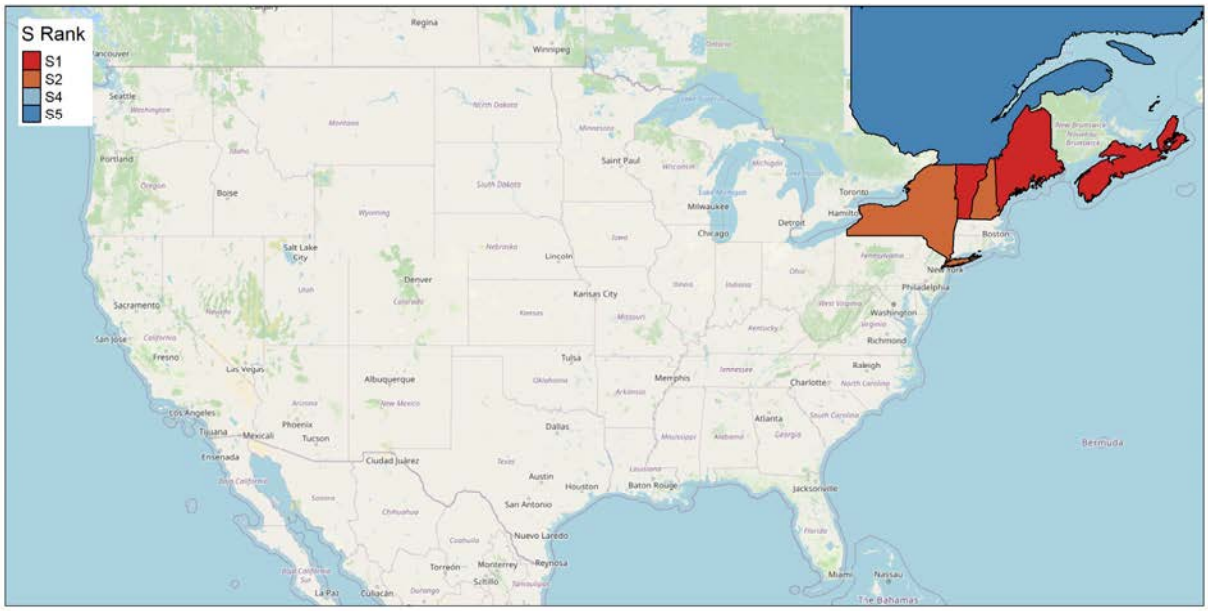

Figure 1: Salix uva-ursi North American distribution.

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

One population or sub-population appears to have become extirpated within the past 35 years (NYNHP 2023). Consistent surveys are needed to determine short-term trends within populations. Four of the eleven extant populations are known to have been extant for the past 100 years (NYNHP 2023). This indicates a long-term stability for some of the populations, but the long-term trends of the rest are unknown.

Details of historic and current occurrence

In New York, this species is only known from the High Peaks region of the Adirondacks in Essex County, with an estimated total of about 1000 plants (NYNHP 2023, 2024). *Salix uva-ursi* is an arctic-alpine North American endemic. It occurs from Nunavut east to Greenland and south to Quebec and the mountains of northern New England and New York (Argus 2005).

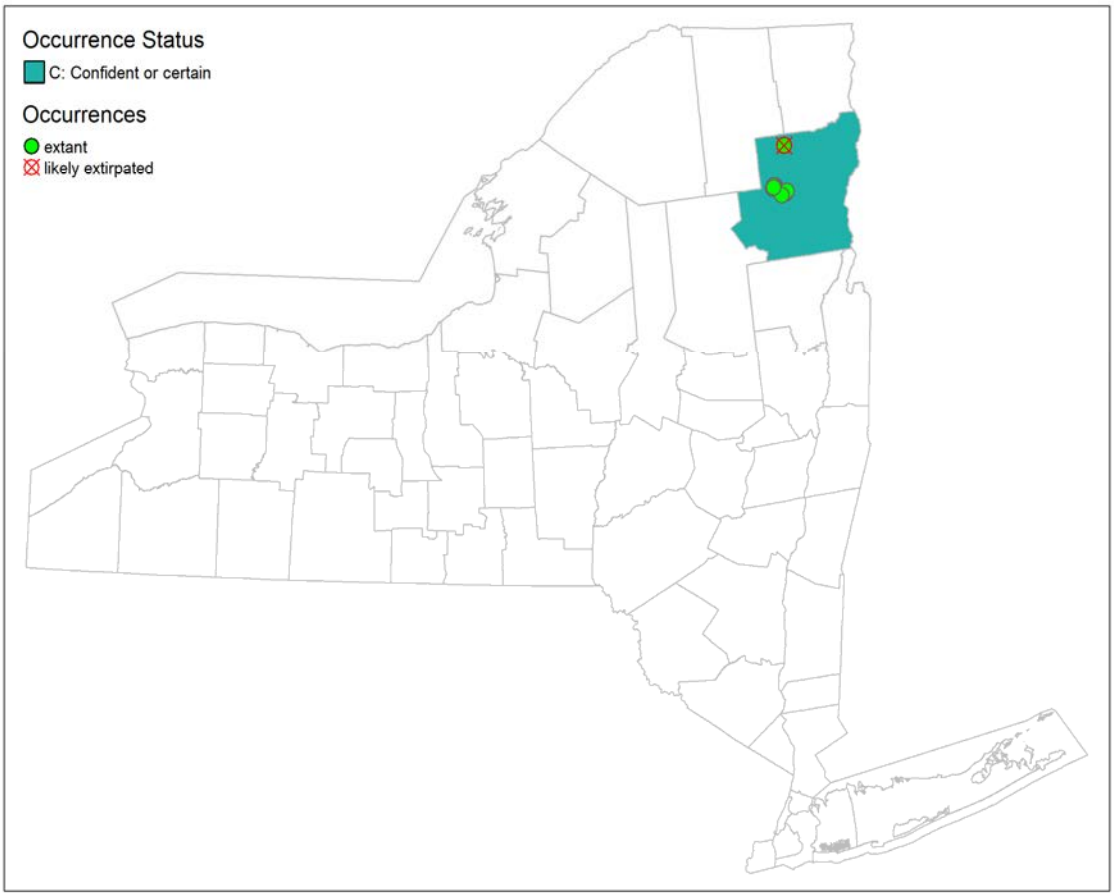

Figure 2: *NYS distribution for* Salix uva-ursi.

Table 1. *Number of records (element occurrences) of* Salix uva-ursi *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	11	4	0.4
1995-2004	11	4	0.4
2005-2014	11	4	0.4
2015-2023	1	1	0.1

Monitoring in New York

Three of the populations have been visited more than 10 times in the last 100 years, and another has been known to be extant since before 1899 (NYNHP 2023). All but one of the populations have been visited more than once, often by Summit Stewards in the Adirondack Park Preserve (NYNHP 2023).

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

Northeasten Habitat Classification Macrogroup: Alpine

NY Ecological Communities: Open alpine community (Edinger et al. 2014, NYNHP 2023).

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, the species occurs exclusively in alpine areas on the highest summits of the mountains in the Adirondacks (Werier et al. 2023). It grows in open alpine meadows, sometimes adjacent to krummholz, and on or near rock ledges; it also occurs along trails in these habitats (NYNHP 2023, 2024). In New England and NY, it can be found on “Xerophytic lichen-heath tundra on wind-exposed places, rocky barrens on hills and ridges, solifluction slopes, polygonal tundra, frost boils, talus slopes at bases of snowpatches, marine terraces and bare gravel beaches, sand dunes, bare, dry exposed shallow soil; on fine sand, sandy-gravel, stony, and rocky materials derived from granite, gneiss, schist, hematite, serpentine, and dolomitic shale substrates” (Argus 2005). Gleason and Cronquist (1991) describe its general habitat as exposed rocky places.

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):*

Salix uva-ursi is a matted dwarf perennial shrub that forms colonies by layering (Argus 2020). Though others in its genus are commonly trees and shrubs, *S. uva-ursi* is only 1-5 cm tall (NYNHP 2024). Growing in exposed, windy areas, the plant holds onto its dried leaves for several years, likely as a means of protection, and takes advantage of the wind to disperse its few seeds (Bélisle & Maillette 1988). The average age of 26 shrubs studied in the southeastern coast of Hudson Bay, was 89 years old, with a max of 105 years old (Opała-Owczarek et al. 2020). This dendrochronological study determined a decline in growth in recent decades, potentially correlated to increased temperatures without an increase in precipitation (Opała-Owczarek et al. 2020). However, growth varies from year to year, often due to climactic conditions and snowpack (Opała-Owczarek et al. 2020).

Table 2. *Phenology of* Salix uva-ursi *in New York State (NYNHP 2023).*

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

VI. Threats

At many sites, trampling by hiker traffic threatens at least parts of the populations (NYNHP 2023, 2024). Climate change, specifically, increased temperatures without a relative increase in precipitation, may negatively affect the growth of the plants (Opała-Owczarek et al. 2020).

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 Summit Steward program which works to inform hikers of the fragile nature of alpine plants is a critical program which is helping to reduce trampling of alpine vegetation. This program and other efforts designed to reduce trampling of alpine meadows are needed.

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* Salix uva-ursi.

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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Opała-Owczarek, Magdalena, Piotr Owczarek, Ewa Łupikasza, Stéphane Boudreau & Krzysztof Migała. 2020. Influence of climatic conditions on growth rings of *Salix uva-ursi* Pursh from the southeastern shore of Hudson Bay, Subarctic Canada, Arctic, Antarctic, and Alpine Research, 52:1, 87-102, DOI: 10.1080/15230430.2020.1722397

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