

Species Status Assessment

Common Name	violet wood sorrel	Date Updated:	2024-01-31
Scientific Name	<i>Oxalis violacea</i>	Updated By:	Rachael A. Renzi
Family	Oxalidaceae		

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

Violet wood sorrel (*Oxalis violacea*) is a perennial herb in the wood-sorrel family. It is one of six species of the genus *Oxalis* in New York (Werier et al. 2023). It is one of five considered native to the state (Werier et al. 2023). *O. violacea* is near the northeastern edge of its range in NY and is rare or nonexistent elsewhere in New England. Its range continues south to Florida and Mexico, and west to North Dakota (NatureServe 2023). NatureServe (2023) considers the plant to be globally secure.

In NY, there are 14 extant populations. Most of them occur in the Hudson Valley, but some also occur on Long Island; 30 historical records occur from elsewhere in the state, and many from heavily developed areas. It is likely that these historical records from Long Island and New York City have been extirpated. Nine of the extant occurrences are on protected land, either state-owned or municipal. These populations should not face threat from development, rather competition from the invasive garlic mustard threatens their existence. *O. violacea* grows on rich soils on steep rocky slopes or summits, often along openings, like trails or ledges. Those near trails may also be at risk from trampling (NYNHP 2023, 2024).

Another issue for the plant may be fire suppression, as it was found to grow vigorously after vernal fire (Mione 2003, Bernhardt 1990). Additional research on the ecological requirements for *Oxalis violacea* is needed. Though the extant populations seem secure, more long-term monitoring is needed to establish a trend.

I. Status

a. Current legal protected Status

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

b. Natural Heritage Program

i. Global:	<u>G5</u>		
ii. New York:	<u>S2S3</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:

Oxalis violacea is Threatened in New York (Ring 2023). There are 14 existing populations, most of which contain hundreds of plants (NYNHP 2023, 2024). Six populations contain over 1000 plants, but the plants generally occur in patches with 50 plants or more (NYNHP 2023, 2024). There are 30 historical records but most of these are from areas of the Lower Hudson region and Long Island that have been developed. It is not expected that these historical occurrences would still exist (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	Yes	Unknown	Unknown	Unknown	S3	
Massachusetts	Yes	Unknown	Unknown	Unknown	S1	
New Jersey	Yes	Unknown	Unknown	Unknown	S4	
Pennsylvania	Yes	Unknown	Unknown	Unknown	SNR	
Vermont	No	-	-	-		
Ontario	No	-	-	-		
Quebec	No	-	-	-		

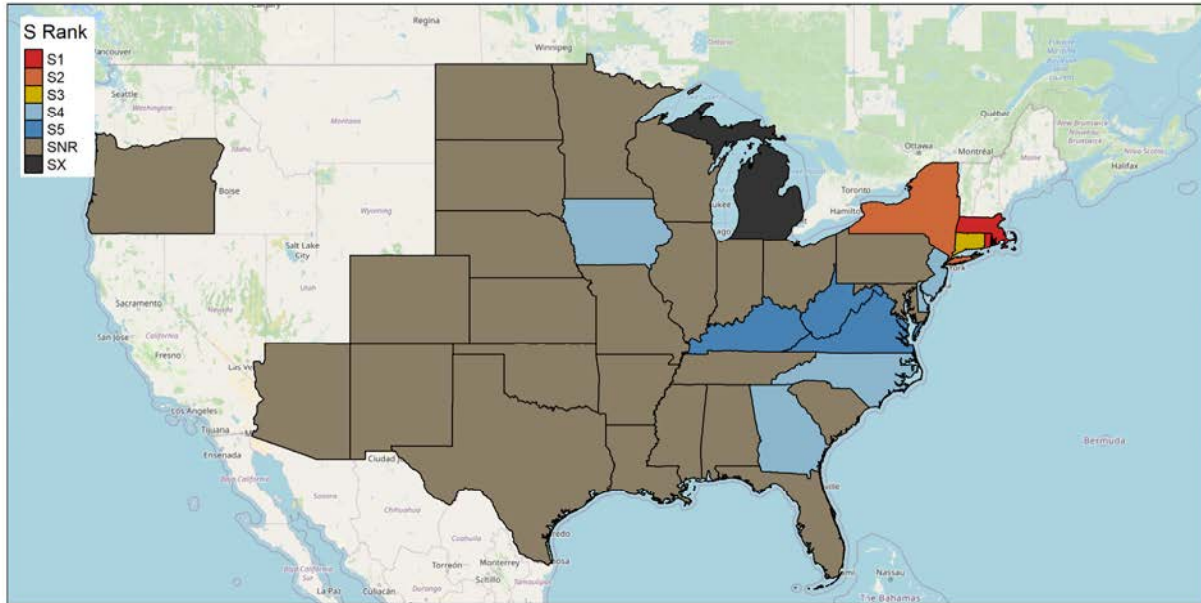


Figure 1. Oxalis violacea North American distribution.

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

Oxalis violacea grows from Massachusetts to North Dakota, south to Florida, Texas, and Mexico (NatureServe 2023). *Oxalis violacea* is near its northeastern range in NY, and is rare in NH, MA, and RI (NatureServe 2023). There are historic records of the plant in VT, but no populations are known to exist today (Mione 2002). Across its range, it is considered stable (NatureServe 2023). In NY, the plants grow mainly in the Hudson Valley, but also occur on Long Island (NYNHP 2023, 2024). Due to development, many historical populations are likely extirpated in NY (NYNHP 2023, 2024). Visits to two populations in 1998, one in Bronx County, and the other in Dutchess County, found no plants (NYNHP 2023, 2024). The remaining 14 populations are local in distribution but are often isolated (NYNHP 2023, 2024). These appear stable, but more surveys are needed to establish trends.

Details of historic and current occurrence

Most of the known current locations for *Oxalis violacea* are from the Hudson Valley from Columbia County south, but it is also found on Long Island (NYNHP 2023, 2024). At the 14 extant populations, there are tens of thousands of plants total (NYNHP 2023, 2024). There are historical records from Cattaraugus, Chemung, and Tioga counties in the western part of the state (NYNHP 2023, 2024). Visits to two historical sites, one in Dutchess County near Poughkeepsie and one in Bronx County, found no plants (NYNHP 2023, 2024).

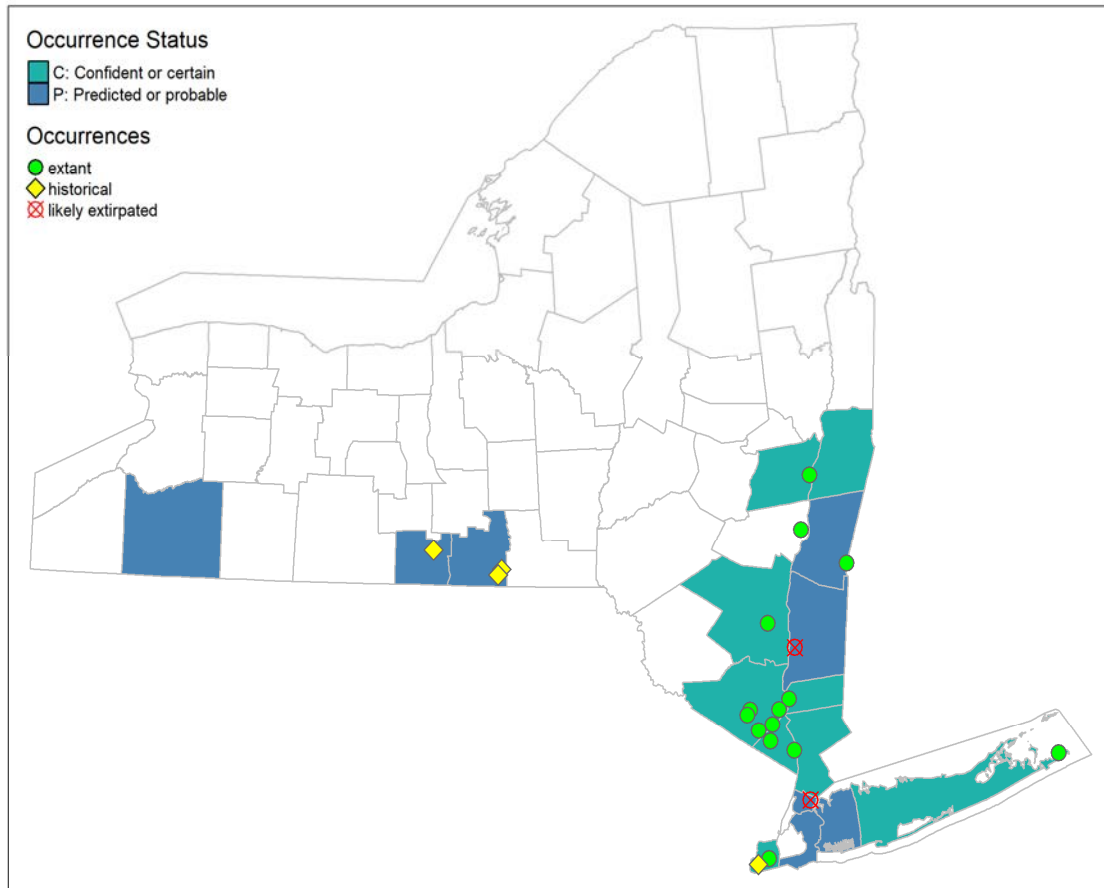


Figure 2. NYS distribution for *Oxalis violacea*

Table 1. Number of records (element occurrences) of *Oxalis violacea* 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	14	1.4
1995-2004	6	7	0.7
2005-2014	4	4	0.4
2015-2023	4	4	0.4

Monitoring in New York

Six populations occur on State Park land, which are monitored on a 10-year cycle. Ten have been visited in 2000 or later. However, those not on park land are not monitored on a regular basis. Other populations occur on municipal, federal, private, and state-owned land (NYNHP 2023).

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

Northeast Habitat Classification Macrogroups: Cliff and talus, Mixed northern hardwoods, Outcrop and summit scrub.

NY Ecological Communities: Appalachian oak-hickory forest, Calcareous talus slope woodland, Chestnut oak forest, Red cedar rocky summit (Edinger et al. 2014, NYNHP 2023, 2024).

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 *Oxalis violacea* has been found primarily on steep rocky slopes and open summits, generally on rocky, often rich soils (NYNHP 2023, 2024). The most common surrounding forest type is oak-hickory, and at many sites the plants were found along trails, ledges, or other openings (NYNHP 2023, 2024) Throughout its range, it has been found in dry uplands, woods, shaded slopes, gravelly banks, and prairies (Gleason and Cronquist 1991; Fernald 1950).

NY Flora Atlas habitat description: Dry to dry-mesic woodlands, rocky summits, and edges of forests (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):

Oxalis violacea is a perennial herb that reproduces by stolons and seeds. Vegetative bulbils are another form of vegetative reproduction (Mione 2003). Vernal fires were found to encourage flowering (Bernhardt 1990). The style lengths of flowers are different between colonies; there are short-styled and long-styled colonies (Trelease 1882). Cross-pollination between colonies is likely carried out by bees (Bernhardt 1990).

Table 2. Phenology of *Oxalis violacea* in New York State (NYNHP 2023).

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

VI. Threats

Understory habitat is affected by the invasion of garlic mustard (NYNHP 2023, 2024, Mione 2003). For those growing along trails or on outcrops, the plants may also be trampled (NYNHP

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