Species Status Assessment

Common Name	Fogg's goosefoot	**Date Updated:**	2024-01-12
Scientific Name	*Chenopodium foggii*	**Updated By:**	Kyle J. Webster
Family	Amaranthaceae		

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

Fogg's goosefoot (*Chenopodium foggii*) is an annual forb/herb in the Amaranth Family (Amaranthaceae) that is endemic to the Northeastern US and Canada. It ranges from Ontario and Quebec, to Maine, New Hampshire, Vermont, Massachusetts, New York, and Pennsylvania. It is reported from Connecticut, Virginia, and North Carolina, but those occurrences have not been confirmed (NatureServe 2023). *Chenopodium* has been subject to much taxonomic disagreement, however authors recognize approximately 100 species globally, 34 of which occur in North America (FNA 2003, Wahl 1952). *Chenopodium foggii* was first recognized as a distinct species by Wahl (1952). There are nine species of *Chenopodium* in NY, of which three are native (Werier et al. 2023).

In New York, *Chenopodium foggii* occurs on rocky outcrops and summits, talus slopes, red cedar rock summits, and oak-hickory woods on thin soils over calcareous bedrock (Edinger et al. 2014, NYNHP 2023). Four extant populations are known from Chemung, Essex, and Warren County, with reports of it from Renssalaer, Washington, and Orange County (NYNHP 2023).

The short and long-term trends of this species are not known given its recent discovery in the state. More time, surveys, and herbarium review are needed to understand the trends in NY.

I. Status

a. Current legal protected Status

i. Federal: **Candidate:**

ii. New York: Unlisted

b. Natural Heritage Program

i. Global: G2G3

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:

There are four extant populations of *Chenopodium foggii* in NY. All four known populations are on protected lands, but they are typically small in number and extent. This species was only recently recognized by field botanists in New York, with the first populations reported from New York in 1952 (Wahl 1952), but not documented in the field until 2019 (NYNHP 2023). *Chenopodium foggii* often occurs in low abundance and is difficult to identify in the field. It is possible there are more populations than currently documented, however, given its scattered distribution elsewhere in its range, it is likely to remain rare 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	E	
Connecticut	Yes	Unknown	Unknown	Unknown	SNR	
Massachusetts	Yes	Unknown	Unknown	Unknown	S1	
New Jersey	No	-	-	-		
Pennsylvania	Yes	Unknown	Unknown	Unknown	S1	
Vermont	Yes	Unknown	Unknown	Unknown	S1	
Ontario	Yes	Unknown	Unknown	Unknown	S2	
Quebec	No	-	-	-		

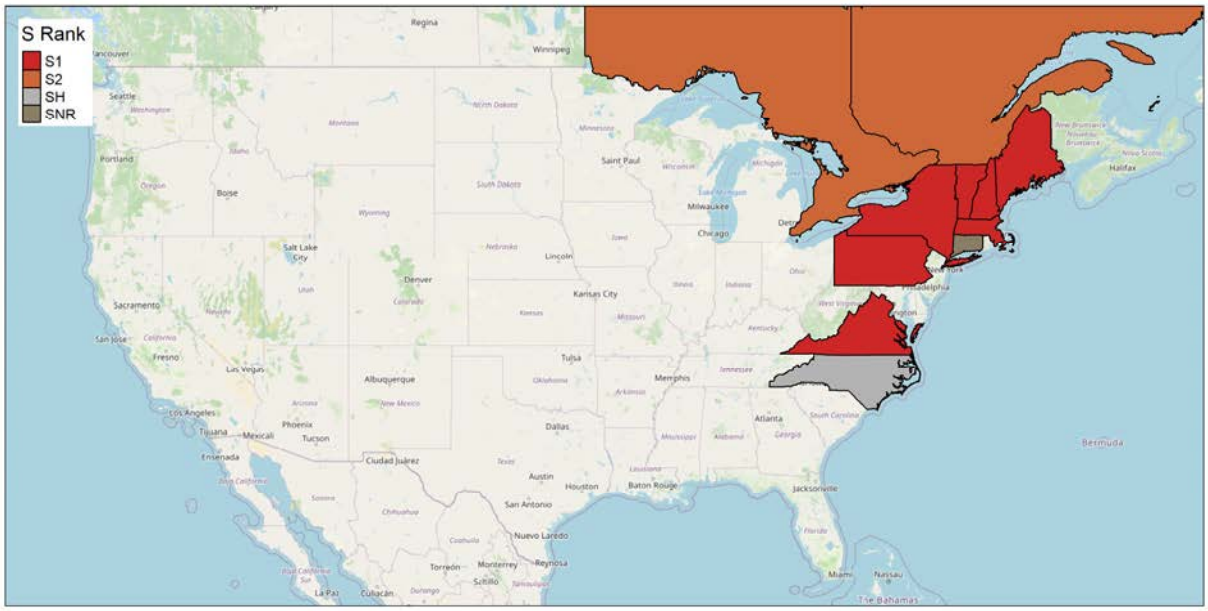

Figure 11: Chenopodium foggii North American distribution.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	Unknown

III. NY Rarity and Trends

Trends Discussion

The short and long-term trends of *Chenopodium foggii* are not known given its recent discovery in the state. More time, surveys, and herbarium review are needed to understand the trends of *Chenopodium foggii* in New York.

Details of historic and current occurrence

Chenopodium foggii was first reported in Rensselaer and Westchester Counties by Wahl (1952). These records have not been relocated and are not reflected in Figure 1 and Table 1. Werier et al. (2023) used an Orange County record collected in 1994 by J.G. Barbour as a voucher for the species occurrence in New York, though this record has also not been relocated. Currently, *Chenopodium foggii* is only known to be extant at four populations in Chemung, Essex, and Warren Counties (NYNHP 2023).

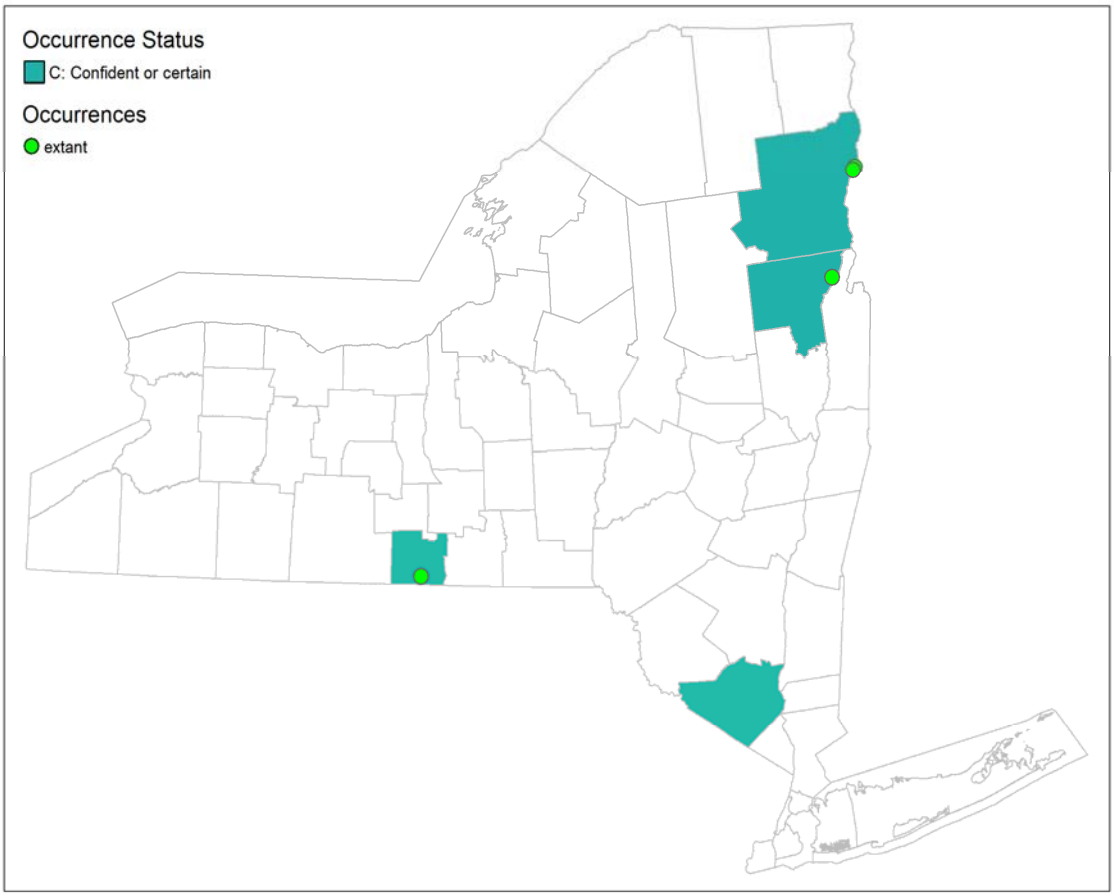

Figure 22: *NYS distribution of* Chenopodium foggii*.*

Table 1. *Number of records (element occurrences) of* Chenopodium foggii *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	0	0	0.0
1995-2004	0	0	0.0
2005-2014	0	0	0.0
2015-2023	4	3	0.3

Monitoring in New York

There are four extant populations in New York. One population occurs on NYS Parks lands, and three occur on NYS DEC lands. The population on NYS Parks lands is monitored on a ten-year rotation. None of the other populations have been regularly monitored. The extant records were last seen between 2019 and 2022 (NYNHP 2023).

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

NatureServe broad habitat types: Forest/Woodland, Woodland - Hardwood, Forest Edge, Sand/dune, Bare rock/talus/scree, Forest - Hardwood, Forest - Mixed, Woodland - Mixed

NY Natural Heritage Communities: Red cedar rocky summit, Appalachian oak-hickory forest.

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, *Chenopodium foggii* occurs on rocky outcrops and summits, talus slopes, red cedar rock summits, and oak-hickory woods on thin soils over calcareous bedrock (Edinger et al. 2014, NYNHP 2023). In New England this species occurs on high-pH bedrock, outcrops, cliff bases, ledges, and woodlands (Native Plant Trust 2024). Peter (2023) notes it occurring with sparse vegetation on shallow xeric soils, over circumneutral to calcareous bedrock in open woodlands.

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):*

Chenopodium foggii is a wind pollinated annual forb/herb (NYNHP 2023, Werier et al. 2023). Peters (2023) reports that increased rainfall during the growing season led to more robust plants and increased population sizes. It is assumed that *Chenopodium foggii* has a long seed bank persistence, but this has not been studied. The seeds have no specialized structures for dispersal, and may be primarily dispersed by gravity, although the fruit are edible and other similar species of *Chenopodium* are none to be dispersed by birds (Dodds 2023). Almost no natural history or demography studies are available regarding *Chenopodium foggii*. More research is needed.

Table 2. *Phenology of* Chenopodium foggii *in New York State (NYNHP 2023).*

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

VI. Threats

Natural succession may threaten this species, but it is thought to be capable of persisting in the seed bank for long periods of time. Small population size may also threaten this species.

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:

Prescribed fire may benefit this species in habitats that are fire dependent. More surveys should be conducted to better understand the distribution and habitat preferences of this species. More research is needed regarding the seed bank longevity and disturbance regimes required for *Chenopodium foggii's* long-term persistence.

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 2. *Recommended conservation actions for* Chenopodium foggii*.*

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:

NatureServe. 2023. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer. [Accessed 12/14/2023].

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Additional references:

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Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero (editors). 2014. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.

Native Plant Trust. 2024. Chenopodium foggii — Fogg's goosefoot. Go Botany 3.9. Framingham, Massachusetts. Available from: https://gobotany.nativeplanttrust.org/species/chenopodium/foggii/ [Accessed 1/16/2024].

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