Species Status Assessment

Common Name	yellow giant hyssop	**Date Updated:**	2023-12-20
Scientific Name	*Agastache nepetoides*	**Updated By:**	Richard Ring
Family	Lamiaceae		

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

Agastache nepetoides (Yellow Giant Hyssop) is a perennial herb species in the mint family. It is one of just three species of *Agastache* in New York (Werier *et al* 2023). It occurs throughout most of the eastern US, and in NY has been found in most regions of the state. The number of occurrences and overall population size seems to have been increasing in recent decades, most known populations are still quite small (NYNHP 2023). In NY, Yellow Giant Hyssop has been found growing forest edges and openings, or trailsides and roadsides, often within or adjacent to rich forests or flood plains. Many historical collection sites have not been checked by NYNHP to determine of the species or habitat is still present. The habitats preferred by Yellow Giant Hyssop are particularly vulnerable to invasion by weedy species, both native and exotic (NYNHP 2024).

I. Status

a. Current legal protected Status

i. Federal: **Candidate:**

ii. New York: Threatened

b. Natural Heritage Program

i. Global: G5

ii. New York: S2S3 **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:

Agastache nepetoides is Threatened in New York (Ring 2023). There are sixteen existing populations but most of them are small, and many are in areas threatened by invasive species or human disturbance. There are about 10 historical occurrences which need further survey

work. According to the most recent surveys the total population size in the state is estimated to be around 250 plants, with only three populations having more than 50 individuals. The populations are scattered through most regions of the state, though not within the Adirondacks or Catskills.

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	S1	
Massachusetts	Yes	Unknown	Unknown	Unknown	SNR	
New Jersey	Yes	Unknown	Unknown	Unknown	S2	
Pennsylvania	Yes	Unknown	Unknown	Unknown	SNR	
Vermont	Yes	Unknown	Unknown	Unknown	S1	
Ontario	Yes	Unknown	Unknown	Unknown	S4	
Quebec	No	-	-	-		

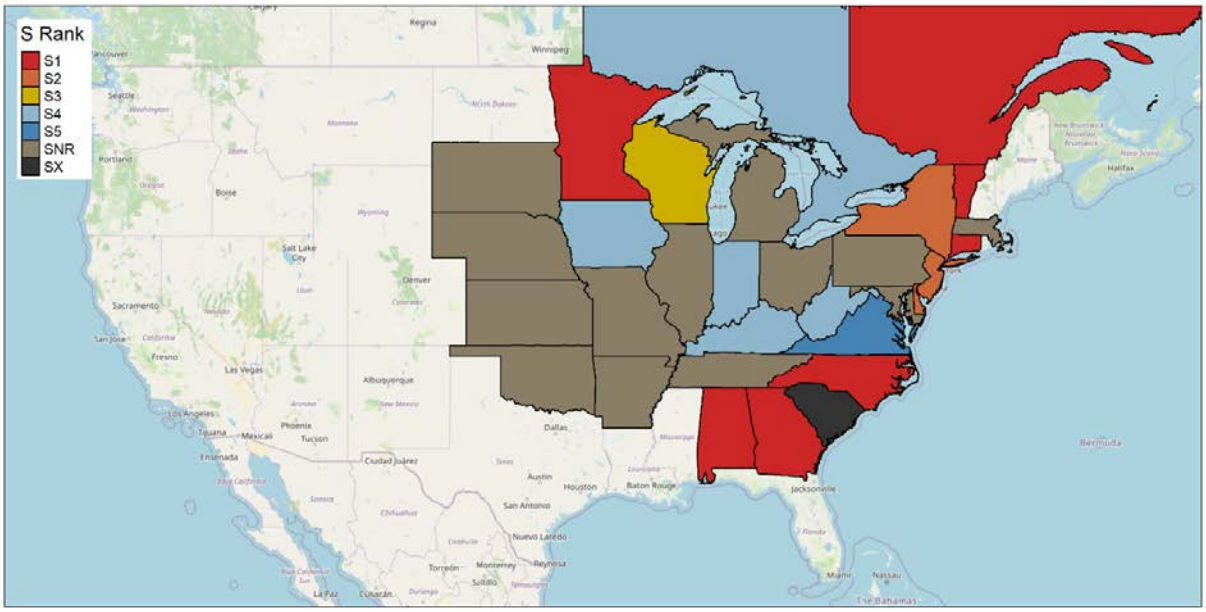


Figure 1: Agastache nepetoides *North American distribution*.

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

Short Term Trends (<100 years)

Five of the extant populations were first documented after the year 2000 – the short term trend is that the number of populations, and overall population size, is apparently increasing, although the overall population is still small (NYNHP 2023).

Long Term trends: More surveys are needed to determine the long-term trends, as many of the historically known populations have not been searched for. There are only two known collections prior to 1900 (NYNHP 2023).

Details of historic and current occurrence:

This herb species has been found throughout much of NY state, excluding the Adirondacks, the Catskills, and the southern tier of counties. A particularly high number of collections have been reported within close proximity to New York City, Buffalo/Niagara Falls, or Ithaca.

There are estimated to be approximately 250 individuals divided among the 16 known extant populations, up from a total of just 28 known individuals in 1988 (NYNHP 2024).

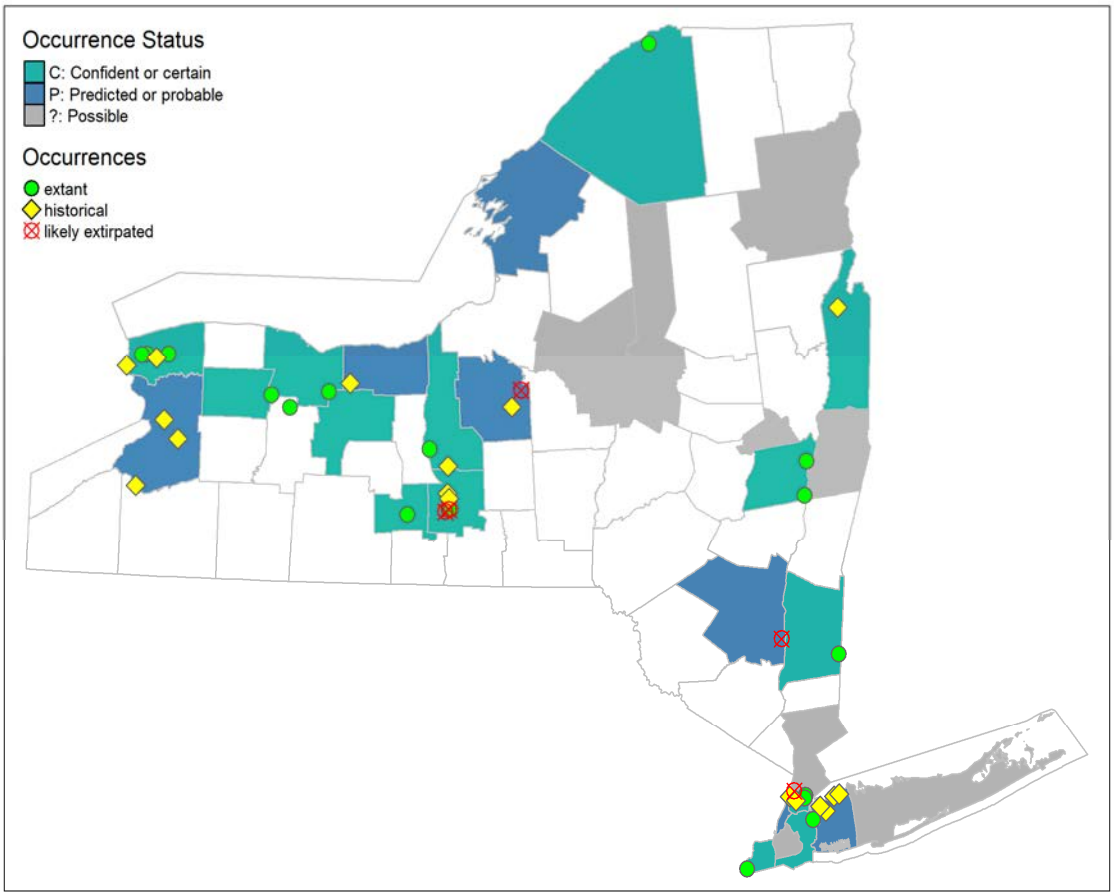


Figure 2 1: *NYS distribution for* Agastache nepetoides.

Table 1. *Number of records (element occurrences) of Agastache nepetoides 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	32	35	3.6
1995-2004	6	6	0.6
2005-2014	7	7	0.7
2015-2023	6	6	0.6

Monitoring in New York

Four of the extant populations are located in NY State Parks and are thus subject to regular monitoring on five to ten year intervals.

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

Northeastern Habitat Classification Macrogroup: Central Oak – Pine, Eastern North American Cliff & Rock Vegetation (?), Northern Hardwood and Conifer Uncertain cross for Limestone Woodland

NY Natural Heritage Communities: Beech-maple mesic forest, Maple-basswood rich mesic forest, Calcareous red cedar barrens, Calcareous talus slope woodland, Limestone woodland

Habitat or Community Type Trend in New York

Declining: **Stable:** **Increasing:** **Unknown:** ✓

Time Frame of Decline/Increase:

Habitat Specialist **Yes:** **No:** ✓

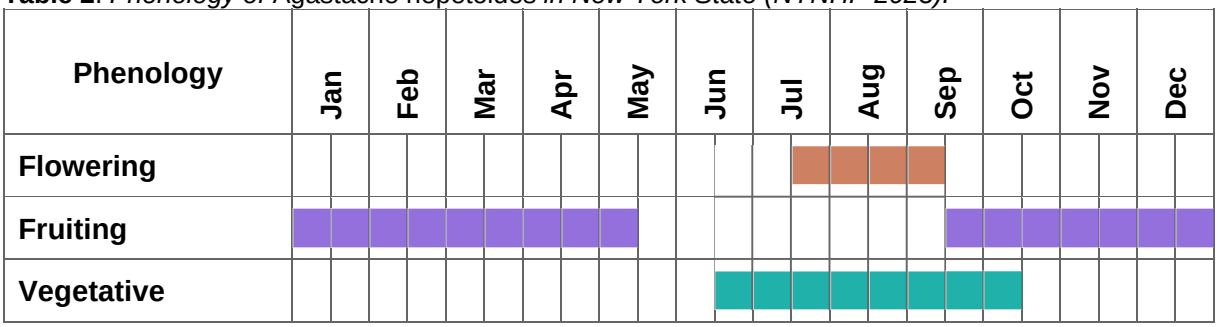
Habitat Discussion:

In New York this species has been found in a diversity of habitats, including weedy or early-successional areas such as roadsides, railroads, and thickets. Many of the known sites for Yellow Giant-hyssop are on limestone-derived soils, and support plant species commonly found on rich sites. Yellow Giant Hyssop has thus been associated both with calciphilic native herbs as well as common roadside and trailside weeds, both native and exotic (New York Natural Heritage Program 2024). Upland in more or less open deciduous woods (oak, beech-maple); also meadows, fencerows, thickets, and lowland woods (Voss 1996). Open woods (Gleason and Cronquist 1991). Rich thickets and borders of woods (Fernald 1970).

V. Species Demographics and Life History

Agastache nepetoides (Yellow Giant Hyssop) is a perennial herb species in the mint family. It is one of just three species of *Agastache* in NY, and the only one with yellow flowers. It flowers in its second or third year of growth (Michigan State University 2024), from mid-summer into autumn, and is pollinated by bees and butterflies. The fruit are small nutlets (Gleason and Cronquist 1991). It also can reproduce asexually via rhizomes (underground stems). Yellow Giant Hyssop is not preferred by deer, and may be limited more by dispersal ability than by light competition or herbivory (Brudvig *et al* 2011).

Table 2. *Phenology of* Agastache nepetoides *in New York State (NYNHP 2023).*



VI. Threats

Succession may be a threat to this species which often occupies and prefers edges and forest openings. Competition from exotic invasive weeds such as mugwort (*Artemesia vulgaris*) has been identified as a threat to some NY populations. Habitat destruction and destruction of plants by herbicides and improper mowing regimes are also threats which have reduced occurrences around metropolitan areas (NYNHP 2024).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes:	No:	✓	Unknown:

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The preferred habitat management techniques are not known for this species. Is not known why it prefers certain disturbed areas over others. However, preventing succession by woody plants and controlling invasive species should help preserve known populations. Maintenance of open habitat conditions by mowing or burning outside of *Agastache nepetoides'* growing season may be beneficial at some sites.

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 Agastache nepetoides*.

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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Werier, David, Kyle Webster, Troy Weldy, Andrew Nelson, Richard Mitchell, and Robert Ingalls. 2023 New York Flora Atlas. [S. M. Landry and K. N. Campbell (original application development), USF Water Institute. University of South Florida]. New York Flora Association, Albany, New York. [Accessed 11/21/2023].

Additional references:

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