Species Status Assessment

Common Name: Masked marvel **Date Updated:** 22 October 2024

Scientific Name: *Chytonix sensilis* **Updated By:** Annie Stupik

Class: Insecta

Family: Noctuidae

Species Synopsis

Previously, there was ambiguity regarding the taxonomic distinction between *Chytonix sensilis* and the similar *Chytonix ruperti*. They are now considered synonymous (Lafontaine and Schmidt 2011; Pohl, Patterson, and Pelham 2016). Common names include masked marvel and barrens Chytonix. The historic distribution of this species spanned from Maine to Florida and westward into Michigan. This species prefers habitat with sandy soils and pitch pine (*Pinus rigida*)- scrub oak (*Quercus ilicifolia*) but has been found to thrive in areas with acidic rocks such as granite. Larva feed on fungus and can be found on leaf litter or woody debris (New York Natural Heritage Program 2011). Further research is required to understand species distribution, trends, and life cycle. It is thought to be a fire sensitive species, with population increases in areas that have been burned within the last decade (McCabe 1995).

In New York, *Chytonix sensilis* has been recorded in Albany, Clinton, Monroe, Jefferson, and Suffolk Counties. Occurrence records have increased with survey efforts in appropriate habitat; thus, it is likely that more populations are present in Long Island (New York Natural Heritage Program 2024). Major threats to Chytonix sensilis are thought to be development within crucial habitat and the control of natural fires (New York Natural Heritage Program 2011).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** _____

ii. **New York:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** S1S3 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List:

-Northeast Regional SGCN: Watchlist [Assessment Priority]

Status Discussion:

Increased surveying efforts in New York have led to more known occurrences. There may be more populations on Long Island than what is currently known (New York Natural Heritage Program 2024). *Chytonix sensilis* is legally endangered in Connecticut and considered imperiled in New Hampshire, Connecticut, Massachusetts, and New York, though more data is needed to better assess trends (NatureServe 2024). It is on the Watchlist (Assessment Priority) for Regional SGCN (USGS 2023). Across mid and western Canada, however, the species is ranked as apparently secure (NatureServe 2024).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining			(blank)
Northeastern US	Yes	Declining	Declining			No
New York	Yes	Unknown	Unknown			(blank)
Connecticut	Unknown	Unknown	Unknown		Endangered	Yes
Massachusetts	No data	Unknown	Unknown			Yes
New Jersey	No data	Unknown	Unknown			Yes
Pennsylvania	No data	Unknown	Unknown			Yes
Vermont	No	N/A	N/A			No
Ontario	No data	Unknown	Unknown			(blank)
Quebec	Yes	Stable	Stable			(blank)

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York

Intermittent surveys have been conducted in pine barren communities of Long Island from the 1980s through the 2010s.

Trends Discussion

Due to wildfire and prescribed burning, short-term trends for this species should have increased in Long Island and Albany Pine Bush since the 1990s. However, long term trends show a moderate decline in population from the destruction of habitat due to development (New York Natural Heritage Program 2011).

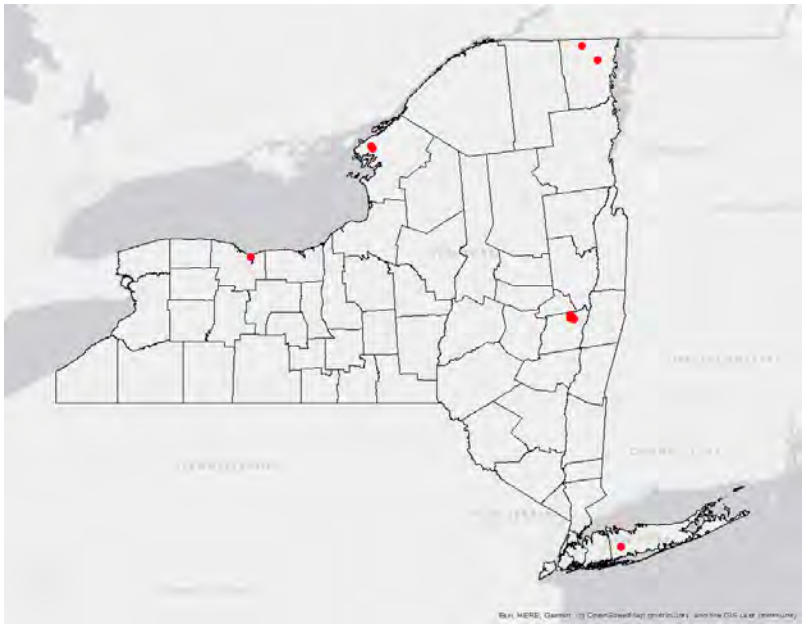

Figure 1. *Chytonix sensilis* distribution/status in New York (New York Natural Heritage Program 2024).

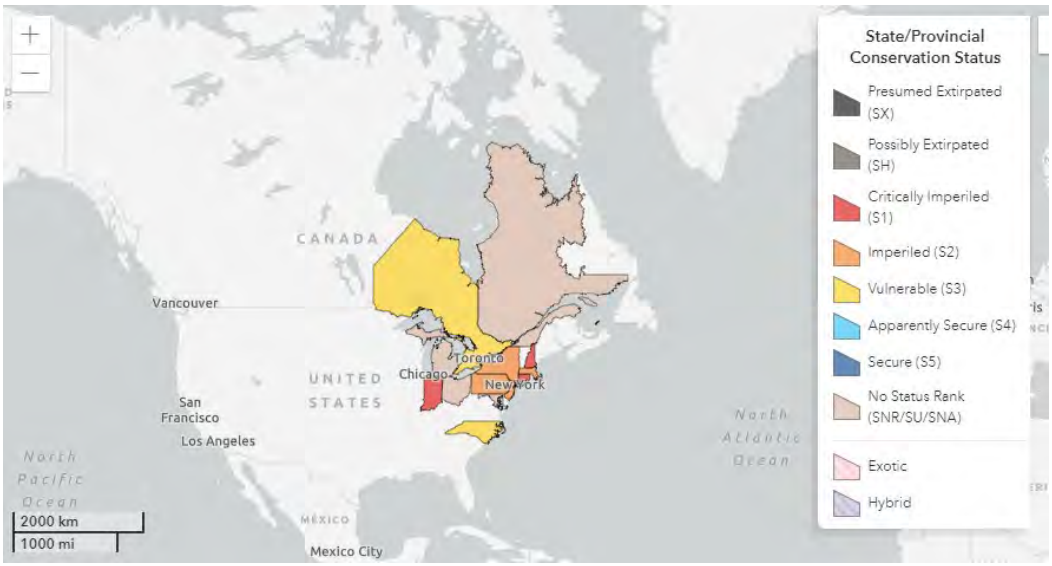

Figure 2. *Chytonix sensilis* distribution/status in North America (NatureServe 2024)

III. New York Rarity

Years	# of Records	# of Distinct Waterbodies/Locations	% of State
Pre-2000	8	4	
2000- 2023	5	2	

Table 1. Records of *Chytonix sensilis* in New York.

Details of historic and current occurrence:

This species was recorded in Albany County in 1984 (New York Nature Explorer 2009). In 1990 this species was documented in the Albany Pine Bush Preserve, Albany County. Another recorded occurrence was reported in 1992 in Edgewood Oak Brush Plains Preserve, within the town of Babylon, Suffolk County. In Clinton County, this species was documented in 1995 in the town of Altona and in 2003 in Gadway Sandstone Pavement Barrens Preserve, in the town of Mooers. In 2015 and 2016 it was recorded across several sites within the Albany Pine Bush.

New York's Contribution to Species North American Range:

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

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

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

a. Pine Barrens

b. Native barrens and savanna

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	No	Declining	

Column options
Habitat Specialist, Indicator Species and Pollinator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Chytonix sensilis can be found in dry sites with pitch pine (*Pinus rigida*)-scrub oak (*Quercus ilicifolia*) structure, such as those found in Albany Pine Bush and Long Island. This species can also occur in sandstone pavement barrens similar to that found Clinton County. Most of its range occurs over sandy soils, but it has been found to occur on acidic rocks such as granite (New York Nature Heritage Program 2011).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Unknown	(blank)	(blank)	(blank)	(blank)	(blank)

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion

The larvae are likely to be present during July and adult flight periods last from mid-July until early October. Larva feed primarily on fungus and can be found within understory leaf liter or upon dead wood material. Further research of this species' life cycle is needed (New York Natural Heritage Program 2011).

VI. Threats *(from NY 2015 SWAP or newly described):*

There is insufficient knowledge on *Chytonix sensilis* life cycles. This species appears to be fire dependent. Populations are affected by development within habitat areas, such as in Albany Pine Bush and Long Island. The threat noted in the 1995 occurrence in Altona, Clinton County was ATV use, which could degrade natural community (New York Natural Heritage Program 2011).

General threats identified to affect moth species include habitat loss and degradation caused by habitat fragmentation; alteration of natural fire regimes; natural succession of shrubland, woodland, and barrens habitats; land clearing; coastal erosion; and sea level rise. Past use of chemical biocides to control spongy moth and other pest insects continues to kill native Lepidoptera (Schweitzer 2004). Introduced parasitoid flies have been known to negatively affect native Lepidoptera (Boettner et al. 2000). Other threats may include invasive species, light pollution affecting reproductive success, and over grazing of host plants by wild deer populations (NYSDEC 2005).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas	(Habitat loss/ degradation)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.1 Fire & Fire Suppression	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.3 Other Ecosystem Modifications	7.3.2 Vegetation succession	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides (spongy moth spraying)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Chytonix sensilis*.

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

Yes: _____ **No:** _ü_ **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:

Further research on *Chytonix sensilis* is required to better assess threats specific to this species. A better understanding of its dependence on and response to fire could guide management actions. This species should be trapped using black lights in xeric sites in late July and early August (New York Natural Heritage Program 2013).

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct Habitat Management	Site Management
A.2 Direct Species Management	A.2.0.0.0 Direct Species Management	Invasive/problematic species control
B.3 Outreach	B.3.0.0.0 Outreach	Awareness and Communications
C.6 Design and Plan Conservation	C.6.0.0.0 Design and Plan Conservation	Site/Area Protection
C.6 Design and Plan Conservation	C.6.0.0.0 Design and Plan Conservation	Resource/Habitat Protection
C.7 Legislative and Regulatory Framework or Tools	C.7.0.0.0 Legislative and Regulatory Framework or Tools	Policies and Regulations

Table 3. Recommended conservation actions for *Chytonix sensilis*.

VII. References

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