Species Status Assessment

Common Name: Melsheimer's sack bearer **Date Updated:** 10/21/24

Scientific Name: *Cicinnus melsheimeri* **Updated By:** Annie Stupik

Class: Insecta

Family: Mimallonidae

Species Synopsis

Melsheimer's sack bearer (*Cicinnus melsheimeri*) is found from Massachusetts and southern Ontario southward to Florida and westward to Wisconsin and Texas. It feeds on oaks and is common in sandy oak-pine barrens habitat. Northward, it prefers to feed on scrub oak. In New York, the species is historically recorded from the Hempstead Plains and Yaphank. One extant occurrence is known from Southampton, Long Island (New York Natural Heritage Program 2012).

In New York State, this species is known only from the dwarf pine barrens of Long Island. It has been observed over multiple years at this site, which indicates that the population is viable and is reproducing. However, no other occurrences in New York State have been found (New York Natural Heritage Program 2012).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

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

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: N/A

-Northeast Regional SGCN: N/A

Status Discussion:

This species appears to be stable on Long Island. Surveys since 1999 have indicated very little change in the dwarf pine barrens population. Forest fires in the dwarf pine plains, especially the very large fire in 1995, resulted in an increase in habitat for this species and a corresponding increase in the population, particularly in burned areas (McGuinness 2006).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable			(blank)
Northeastern US	Yes	Declining	Declining			No

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
New York	Yes	Declining	Declining			(blank)
Connecticut	No data	Unknown	Extirpated			No
Massachusetts	Yes	Declining	Declining		Threatened	Yes
New Jersey	No	(blank)	(blank)			No
Pennsylvania	No data	(blank)	(blank)			(blank)
Vermont	No	(blank)	(blank)			(blank)
Ontario	Yes	Stable	Stable			(blank)
Quebec	Yes	Unknown	Unknown			(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

There is no monitoring currently conducted for this species in New York.

Trends Discussion

The long-term trend for this species in New York is unknown. The long-trend for this species is also tied to the long-term trend for the natural community it lives in. The acreage of dwarf pine plains in New York has declined from historical acreage due to settlement, development, and suppression of fires (New York Natural Heritage Program 2012). Distribution data for U.S. states and Canadian provinces is known to be incomplete or has not been reviewed for this taxon.

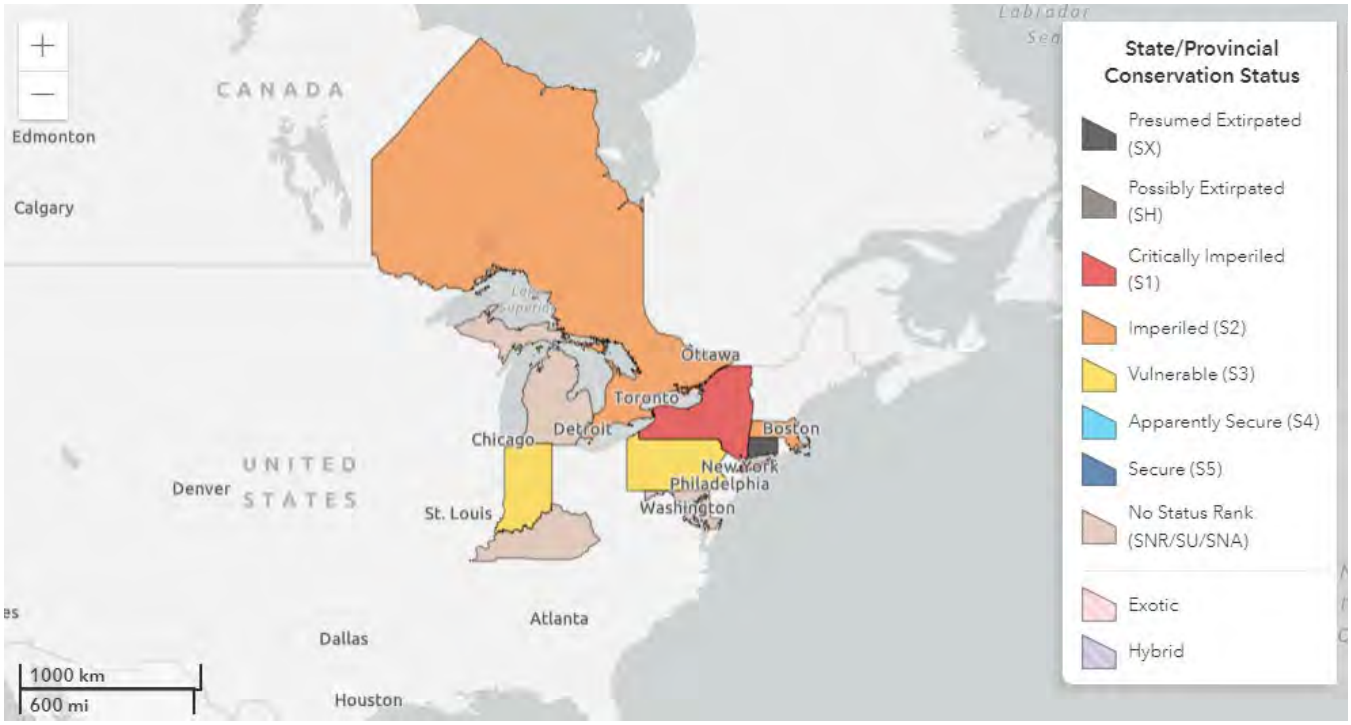

Figure 1. *Cicinnus melsheimeri* distribution/status in North America (NatureServe 2024).

Figure 2. *Cicinnus melsheimeri* occurrences in New York (NYNHP 2024).

III. New York Rarity

Long Island represents the northern part of its range, so this species has always been rare in New York State (New York Natural Heritage Program 2012).

Years	# of Records	# of Distinct Waterbodies/Locations	% of State
Pre-2000	1	1	<1
2000- 2023	2	2	<1

Table 1. Records of *Cicinnus melsheimeri* in New York.

Details of historic and current occurrence:

Several individuals recorded at two locations in Long Island (1999, 2005, and 2007). The most recent New York Record is from 2007.

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

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Unknown	Unknown	Unknown	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:

In New York, Melsheimer's sack bearer is found exclusively in the dwarf pine barrens of Long Island. This species is found in areas that are dominated by dwarf pitch pine and scrub oak. Its preferred food source is the scrub oak. The larva makes a leaf shelter for itself and moves it as it feeds on leaves. This species has a very small impact on the health of its host trees (New York Natural Heritage Program 2012).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Unknown	Unknown	Unknown	Unknown	Unknown	(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 *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Adult moths fly in June and early July, with peak flight normally in late June. Larvae feed on scrub oak (Quercus ilicifolia) from summer through fall, constructing a portable, protective shelter (“sack”) out of leaves and silk. Larvae overwinter and pupate in the spring (Nelson 2007).

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

Known threats include habitat loss due to development and fire suppression, although the threat of development for the remaining habitat on Long Island may be low. The suppression of fires in barrens and other dry places would cause a loss of habitat for the species and therefore a reduction in population size. This species requires open woodland or barrens with pitch pine and scrub oaks. Forest fires are needed, on average, every 5-10 years (Jordan et al. 2003) to maintain this type of habitat. Lack of fires will result in the succession of this community to a closed-canopy forest of tall oaks and other hardwoods (Little 1979, Jordan et al. 2003). Conversely, a fire affecting an entire occurrence could eliminate all life stages that are present.

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	7.1.2 Suppression in the fire regime	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Cicinnus melsheimeri.*

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 best management strategy for this species is the management of the natural community, or habitat, where this species occurs. Maintaining the Long Island pine barrens with their full suite of plant and animal species requires frequent (every few decades) disturbance to maintain open-canopy, shrub-dominated communities and to prevent succession to a closed-canopy hardwood forest (Jordan et al. 2003). Researchers have determined that "an active fire management program utilizing prescribed fire with appropriate mechanical treatments" is the preferred method (Jordan et al. 2003). Researchers have also determined that the size, type, intensity, and timing of fires (pyrodiversity) needs to be evaluated for each site to maximize benefits to the natural community and the species it supports (Jordan et al. 2003). The entire occupied habitat for a population should not be burned in a single year. For example, in places where prescribed burning is used, refugia (unburned areas) are needed for many species to ensure that any life stage can survive a fire. McGuinness (2006) found that this species was more abundant in burned areas than unburned areas.

Research is needed on the response of this species to natural and controlled burns. In addition, more surveys are needed with blacklight traps to determine the total extent of the occurrence (New York Natural Heritage Program 2012).

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

Action Category	Action	Description
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 *Cicinnus melsheimeri.*

VII. References

Jordan, M. J., W. A. Patterson III, A. G. Windisch. 2003. Conceptual ecological models for the Long Island pitch pine barrens: implications for managing rare plant communities. Forest Ecology and Management 185, 151-168.

Little, S. 1979. Fire and plant succession in the New Jersey pine barrens. pp. 297-313 in Forman, R.T.T. (ed.) Pine Barrens: Ecosystem and Landscape. Academic Press, Inc. Orlando, Florida, USA.

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NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 18 January2013.

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