Species Status Assessment

Common Name:	Clemens' Sphinx	**Date Updated:**	2024-12-11
Scientific Name:	*Sphinx luscitiosa*	**Updated By:**	Hollie Shaw
Class:	Insecta		
Family:	Sphingidae		

Species Synopsis

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

Sphinx luscitiosa is sexually dimorphic: males have dark gray-brown forewings and yellow-black hindwings; females have blue-gray forewings and tan and black hindwing. Adults of both sexes can be identified by the solid black line around the outer margins of both wings and the "yellowish ground color" of the hindwings (Pacific Northwest Moths 2024).

This boreal species is found in Nova Scotia and New Brunswick west to Alberta, the Northwest Territory, and Yukon Territory in Canada south to New Jersey in the United States. There are sparse records from Missouri, north-central Nebraska, and parts of the Rocky Mountains. It is routinely found in Michigan (Tuttle 2007). In New York, it is historically known from the northern part of the state (Clinton, Franklin, and Essex Counties) south to Long Island, and the southern tier (White et al. 2022).

In New York, population and distribution seem to be declining, although trends are not completely known. NatureServe (2024) states that declines are noted throughout the Northeast. However, males are not attracted to light and may be overlooked during trapping efforts (NatureServe 2024). It is historically known from 16 counties in New York. The last known location is from the Albany Pine Bush in 1987 (White et al. 2022).

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: G5

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
Northeast Regional SGCN: Not listed

Status Discussion:

S. luscitiosa is ranked S1 (critically imperiled) in New York. The populations in the northeast, including New York, has declined. This species has not been observed since 1987.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Unknown	Unknown	Unknown		n/a
Northeastern US	Yes	Unknown	Unknown	Unknown		No
New York	Yes	Unknown	Unknown	Unknown	U	Yes
Connecticut	No	Unknown	Unknown	Unknown	SH	No
Massachusetts	No	Unknown	Unknown	Unknown	SH, reported in Mass Moths website	No
New Jersey	No	Unknown	Unknown	Unknown	SX	No
Pennsylvania	No	Unknown	Unknown	Unknown	SNR	No
Vermont	No	-	-	-	Not listed, but reported in iNaturaist at two locations	No
Ontario	No	Unknown	Unknown	Unknown	S4	n/a
Quebec	No	Unknown	Unknown	Unknown	SNR	n/a

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

(specify any monitoring activities or regular surveys that are conducted in New York):

The Empire State Native Pollinator Survey (ESNPS) was conducted from 2017-2021, but there are no organized, regular monitoring or survey activities directed toward this species or to sites where they have been documented. Some regular monitoring may occur at protected sites that Heritage staff revisit if they occur on state properties, as part of OPRHP or State Lands inventory work.

Trends Discussion

(insert map of North American/regional distribution and status):

Little is known about trends for this species. Many *Sphinx* spp. populations have declined in the Northeast (Wagner 2012). There are historical records from 16 counties. The most recent observations are from the Albany Pine Bush in 1982 and 1987 (White et al. 2022). There are no other known observations in recent years.

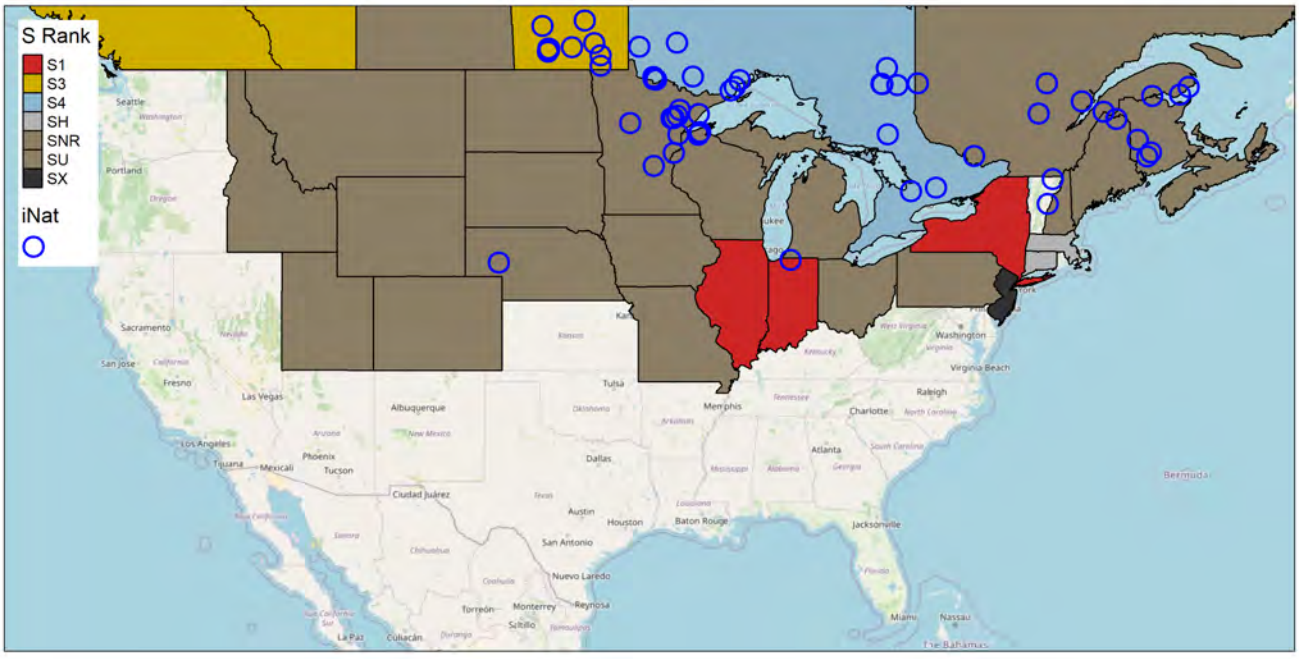

Figure 1. *Sphinx luscitiosa* North American distribution. Points show research-grade iNaturalist observations.

Figure 2. *Sphinx luscitiosa* regional distribution as reported at https://northeastwildlifediversity.org/rsgcn .

III. New York Rarity

(provide map, numbers, and percent of state occupied)

Years	Observations	# of Counties	% of counties in State
Pre-2000	30	16	11.3
2000-2023	0	0	0

Table 1. Number of observations of *Sphinx luscitiosa* grouped by the dates known to be extant (repeat observations (element occurrences) include the years spanning first observation to last observation) and the number and percent of total of counties these observations fall within for New York State.

Details of historic and current occurrence:

Most *S. luscitiosa* observations were documents prior to 1980. Two specimens were collected in 1982 and 1987 from the Albany Pine Bush and one specimen was collected from Freeville in Tompkins County in 1980 (ESNPS).

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):

NatureServe broad habitat types: Shrubland/chaparral, Bog/fen, Scrub-shrub wetland

Habitat or Community Type Trend in New York

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

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

Habitat Discussion:

This species likely occurs in open, shrubby habitats such as barrens, bogs, and burn scars (NatureServe 2024). Tuttle (2007) stated that this species is mostly found in boreal habitats with their primary larval food plants: poplar (*Populus* spp.), birch (*Betula* spp.), and willow (Salix spp.). In the west, they are often found in riparian habitats. Other food plants include: andromedea (Andromedea spp.), blueberry (Vaccinium spp.), bayberry (Myrica spp.), and inkberry (Ilex glabra) (Tuttle 2007).

V. Species Demographics and Life History

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	Yes	No

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 *S. luscitiosa* are typically found from early June to mid-July (Tuttle 2007). Larvae pupate and overwinter underground (Lotts and Naberhaus 2024).

VI. Threats

Sphinx moths and other large moth species have been in decline in the Northeast for decades (Wagner 2012). *Compsilura concinnata* was introduced to control spongy moth (Lymantria dispar*)* populations but contributed to the decline of many other moth species. The first generation of this tachinid parasitizes spongy moth larvae. After that, it parasitized native larvae. Other current threats include habitat loss by destruction or succession, over-grazing by deer, and climate change (Wagner 2012).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.1 Terrestrial animals (introduced *Compsilura concinnata* for spongy moth control)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Sphinx luscitiosa*

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:

Survey work is needed to determine the status and range of this species in New York. Long-term monitoring is suggested at occupied sites. If needed, habitat management may be needed to ensure that food plants are present, and the habitat is maintained. New York is near the southern edge of *S. luscitiosa* range indicating that climate change may affect the survival of this species.

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Site/Area management
A.1 Direct Habitat Management	A.1.1.0.0 Manage plants, animals, fungi, or bacteria	Invasive/Problematic species control
B.3 Outreach	B.3.1.4.0 Public outreach and information	Awareness & Communications
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Site/Area Protection
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Resource/Habitat Protection
C.6 Design and Plan Conservation	C.6.5.1.3 Develop a conservation, management, or restoration plan for protected private lands	Habitat/Natural process restoration
C.9 Education and Training	C.9.2.0.0 Training and individual skill development	Training

Table 3. Recommended conservation actions for *Sphinx luscitiosa*.

VII. References

This SSA drew heavily from these resources:

iNaturalist.org. 2024. *Sphinx franckii* records in North America. California Academy of Sciences, San Francisco, CA. http://www.inaturalist.org. Accessed November 8, 2024.

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Tuttle, J. P. 2007. The hawk moths of North America: A natural history study of the Sphingidae of the United States and Canada. The Wedge Entomological Research Foundation, Washington, D. C. 253 pp. +23 plates.

Wagner, D.L. 2012. Moth decline in the northeastern United States. News of the Lepidopterists' Society 54(2):52-56.

White, Erin L., Matthew D. Schlesinger, and Timothy G. Howard. 2022. The Empire State Native Pollinator Survey (2017-2021). New York Natural Heritage Program. Albany, NY.