

Species Status Assessment

Common Name: Boreal Pine Looper

Date Updated: 2024-10-09

Scientific Name: *Nepytia pellucidaria*

Updated By: Hollie Shaw

Class: Insecta

Family: Geometridae

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

Boreal Pine Looper was recently discovered at three locations in Paul Smiths. This included capturing a mating pair. The surrounding habitat includes red pine (*Pinus resinosa*). Prior to 2016, this species was considered extirpated from New York State (NYNHP 2023) with the last known collection from Albany before 1900 (Schweitzer et al. 2018). Forbes (1948) reported this species from Long Island, but it is now assumed this was *Nepytia* sp. 1 which was later described. The known foodplants are pines, including red pine and jack pine (*P. banksiana*). There are reports of white pine (*P. strobus*) being a foodplant in Canada. This species may have always been rare or very local in most of its range, however it is possible populations were impacted by *Compsilura concinnata*, an introduced Spongy Moth parasite (Schweitzer et al. 2018). There is currently one location in the New York Natural Heritage database (NYNHP 2023) and several records in iNaturalist that need further review (iNaturalist 2024). This species range seems to be restricted to the Adirondacks and a possible location in western New York.

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:** GU

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:

There are no known 20th century records in New York. It was rediscovered in 2016 (NYNHP 2023). Schweitzer et al. (2018) believes the Spongy Moth (*Lymantria dispar*) biocontrol agent, *Compsilura concinnata*, may have contributed to the “demise” of this species. There is currently

one location in the New York Natural Heritage database (NYNHP 2023) and several records in iNaturalist that need further review (iNaturalist 2024). This species range in New York seems to be restricted to the Adirondacks and a possible location in western New York.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Unknown	Unknown	Unknown		
Northeastern US	Yes	Unknown	Unknown	Unknown		No
New York	Yes	Unknown	Unknown	Unknown	U, S1	Yes
Connecticut	No	-	-	-		
Massachusetts	Yes	Unknown	Unknown	1972-2017		No
New Jersey	No	-	-	-		
Pennsylvania	Yes	Unknown	Unknown	Unknown	SNR	No
Vermont	No	-	-	-		
Ontario	Yes	Unknown	Unknown	Unknown	S4	
Quebec	Yes	Unknown	Unknown	Unknown	SNR	

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):

Trends Discussion

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

This species was rediscovered in New York in 2016 at a site in Paul Smiths. There are additional records in the Adirondack Park and one is western New York that need further review (iNaturalist 2024).

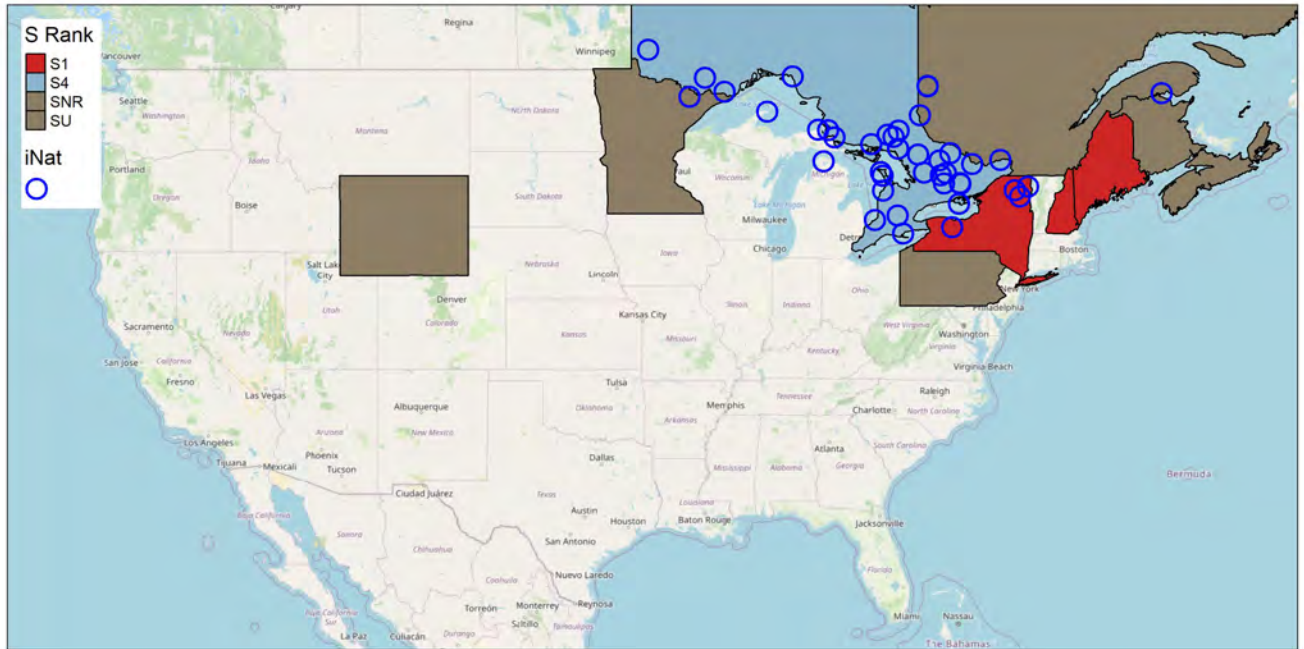


Figure 1. *Nepytia pellucidaria* North American distribution. Polygons show state or providence with the species present (NatureServe 2024). Points show research-grade iNaturalist observations.

III. New York Rarity

Boreal Pine Looper has been confirmed at one site in New York (NYNHP 2023) and is considered rare throughout its range (NatureServe 2024). There were very few reports throughout its range for 50 years until recently (NatureServe 2024).

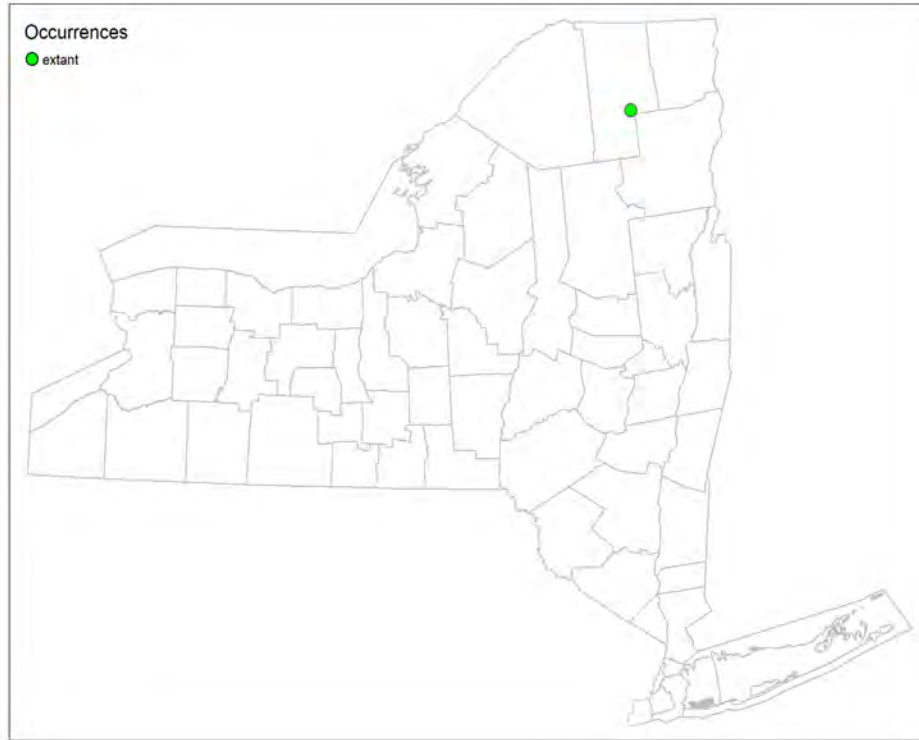


Figure 2. NYS distribution for *Nepytia pellucidaria* based on element occurrence data (NYNHP 2023).

Table 1. Number of observations of *Nepytia pellucidaria* 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.

Years	eocount	# of Counties	% of counties in State
Pre-2000	0	0	0.0
2000-2023	1	1	1.6

Details of historic and current occurrence:

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

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 (2024) broad habitat types: Conifer woodland and forest, and possibly mixed woodland or forest.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/ Increase
Unknown	Unknown	Stable	2016-present

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 occurs where pines are present, most often red pine, jack pine, pitch pine and possibly white pine. The habitat at the Paul Smiths site includes red pine.

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

In New England and New York, adults are typically found in mid to late September. Eggs overwinter and eggs hatch in the spring or early summer (Schweitzer et al. 2018).

VI. Threats

It is assumed that the Spongy Moth (*Lymantria dispar*) biocontrol agent, *Compsilura concinnata* may have contributed to the boreal pine looper decline (Schweitzer et al. 2018). Its range appears to be limited and elimination of suitable habitat at known sites could decrease or eliminate the population.

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 (Spongy Moth biocontrol agent <i>Compsilura concinnata</i>)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Nepytia pellucidaria*

iNaturalist.org. 2024. *Nepytia pellucidaria* records in Northeastern US and Canada. California Academy of Sciences, San Francisco, CA. <http://www.inaturalist.org>. Accessed [March 14, 2024].

New York Natural Heritage Program (NYNHP), State University of New York College of Environmental Science and Forestry. 2023. Element Occurrence and Element Dataset. Albany, New York. [Exported 12/14/2023].

NatureServe. 2024. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. [Accessed 2/14/2024].

Schweitzer, Dale F., M. C. Minno, and D. L. Wagner. 2018. Rare, declining, and poorly known butterflies and moths (Lepidoptera) of forests and woodlands in the eastern United States. U.S. Forest Service.

Originally prepared by	Hollie Shaw
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