

# Species Status Assessment

**Common Name:** Pin-striped slug moth **Date Updated:** January 15, 2024

**Scientific Name:** *Monoleuca semifascia*

**Updated By:**

**Class:** Insecta

**Family:** Limacodidae

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

In New York, *Monoleuca semifascia* inhabits the dwarf pine barrens of Long Island. The pin-striped slug moth was discovered on Long Island in 1993 and is extant and viable. The Long Island population is the first known to be north of New Jersey and the first discovery of this species in New York. The pin-striped slug moth ranges from New York and New Jersey, southward to Florida and Texas, with populations in Missouri and Arkansas. The short-term trend in New York is stable; individuals were most recently collected in 2005. In New York, the long-term trend is unknown; however, the habitat community that supports this species historically declined from development and fire suppression (New York Natural Heritage Program 2011).

## 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:

United States National Status: Not assessed

IUCN Red List: Not assessed

### Status Discussion:

The global status for this species was last reviewed in 1997 (as of 2015) and determined to be G4, apparently secure. This species is listed as critically imperiled in New York and Indiana; and imperiled in New Jersey and Arkansas (NatureServe 2012).

## II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown	Not specified		-
Northeastern US	Yes	Unknown	Unknown	Not specified		-
New York	Yes	Stable	Stable	2003		Yes
Connecticut	No	-	-			-
Massachusetts	No	-	-			-
New Jersey	Yes	Unknown	Unknown	Not specified	Not listed	Yes
Pennsylvania	No	-	-			-
Vermont	No	-	-			-
Ontario	No	-	-			-
Quebec	No	-	-			-

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*):

Intermittent surveys have been conducted in pine barren communities of Long Island over the last 10 years (as of 2015).

### **Trends Discussion** (*insert map of North American/regional distribution and status*):

The short term trend for this species is stable on Long Island. Surveys since 1993 have showed little changes in population size, with the exception of a sudden increase in 2005. The cause of this increase is unknown, but may be linked to recent forest fires. The long term population trend for this species is unknown, however the dwarf pine plains habitat is not as extensive as it was historically. This species ranges from New York and New Jersey, southward to Florida and Texas, and into parts of Missouri and Kansas (New York Natural Heritage Program 2011).

**Pin-striped Slug Moth (*Monoleuca semifascia*)**

iNaturalist Data (through 12 Jan 2024)

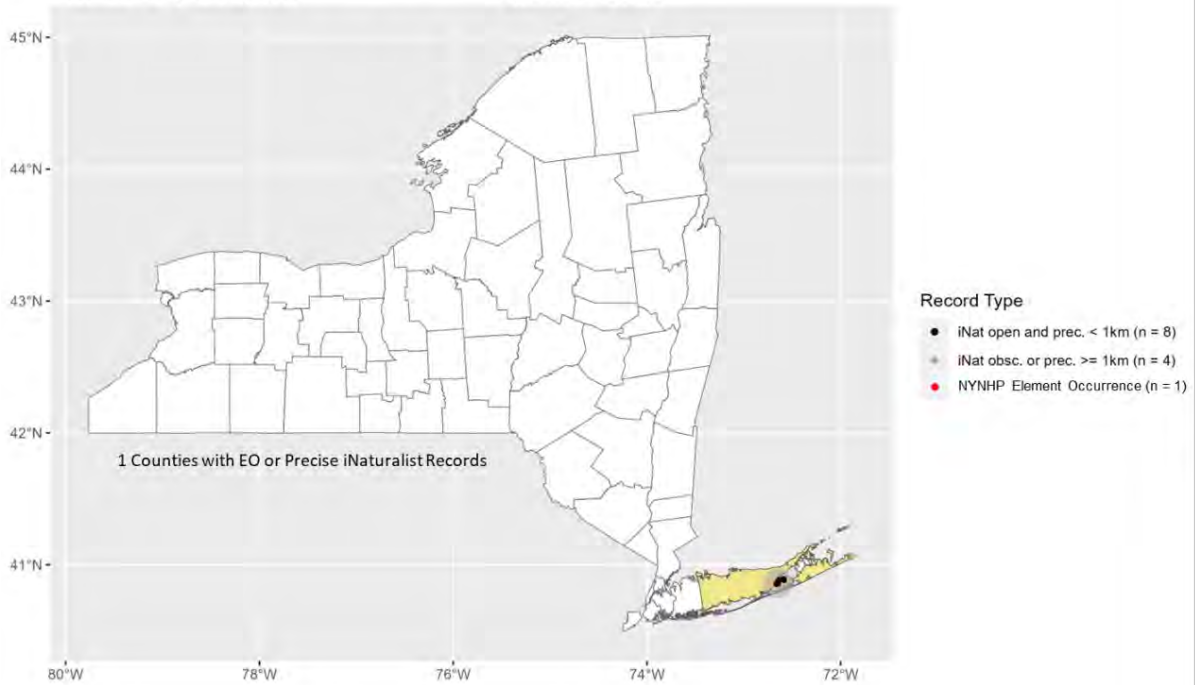
n = 12 records / 4 obscured or imprecise records

1 counties with precise records

Element Occurrence Data (Through 06 Oct 2023)

n = 1 element occurrences

1 counties with EO data



**Figure 1.** Occurrence location of *Monoleuca semifascia* in New York (New York Natural Heritage Program 2024, iNaturalist).

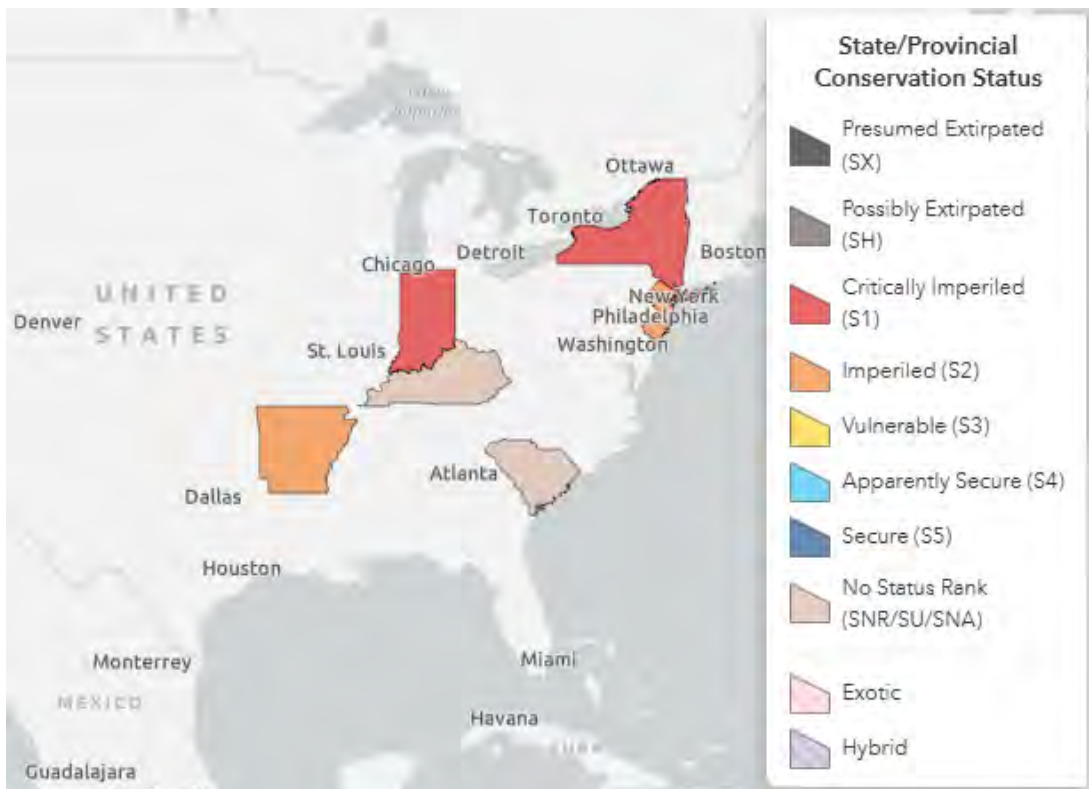


Figure 2. Conservation status of *Monoleuca semifascia* in North America (NatureServe 2025).

III. New York Rarity (provide map, numbers, and percent of state occupied)

Years	# of Records	# of Counties	% of State
Pre-2000	_____	_____1	_____<1
2000- 2023	_____	_____1	_____<1

Table 1. Records of pin-striped slug moth in New York.

Details of historic and current occurrence:

The 1993 collection of *Monoleuca semifascia* was the first documentation of the species in New York (New York Natural Heritage Program 2024). This species is uncommon throughout the Northeast (Covell 1984). *Monoleuca semifascia* is a southern, habitat specific, species and most likely does not occur in any other location in New York (New York Natural Heritage Program 2011). There are no historic occurrences of this species.

An extant and viable population has been surveyed in the dwarf pine barrens, Southampton, Suffolk County from 1993 to 2005 (New York Natural Heritage Program 2024).

## 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):

1. Oak-Pine Forest
2. Oak Forest
3. Pine Barrens

### Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/Community Trend	Time frame of Decline/Increase
Yes	No	Choose an item.	Unknown	

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:

This species exists in xeric sandy forests dominated by pitch pine (*Pinus rigida*) and scrub oak (*Quercus ilicifolia*). Larval host plants include Oak (*Quercus sp.*), cherry (*Prunus sp.*), pecan (*Carya illinoensis*), and persimmon (*Diospyros virginiana*) (Wagner et al. 2008, Opler et al. 2010). The site at which this species is monitored is an open canopy forest of pitch pine and scrub oak, The understory vegetation consists of black huckleberry (*Gaylussacia baccata*), blue ridge blueberry (*Vaccinium pallidum*), eastern teaberry (*Gaultheria procumbens*), and bearberry (*Arctostaphylos uva-ursi*). (New York Natural Heritage Program 2024).

## V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/Catadromous?
Yes	-	-	Yes	Yes	-

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):

The adult flight period lasts from June to July. Eggs are laid in clusters of 20 or more. Larvae are present from late July to September. This species typically has one annual brood. Larval host plants for *Monoleuca semifascia* include a variety of oak species and other woody plants (Wagner et al. 2008, New York Natural Heritage Program 2011, Butterflies and Moths of North America 2012).

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

Threats facing *Monoleuca semifascia* include habitat loss from development and fire suppression. The threat of development in the remaining habitat on Long Island may be low (New York Natural Heritage Program 2011). General threats identified to affect moths include habitat loss and degradation caused by development; 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 gypsy 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, over grazing of host plants by wild deer populations, and off-road vehicle use (NYSDEC 2005).

<b>Threat Level 1</b>	<b>Threat Level 2</b>	<b>Threat Level 3</b>	<b>Spatial Extent</b>	<b>Severity</b>	<b>Immediacy</b>	<b>Trend</b>	<b>Certainty</b>
1. Residential and Commercial	1.1 Housing & Urban Areas	(habitat loss)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
6. Human Intrusions & Disturbance	6.1 Recreational Activities	6.1.1 Motor vehicles (offroad)	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.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.1 Terrestrial animals (parasitoid flies)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.2 Problematic Native Plants & Animals	8.2.3 Localized increase in invertebrate grazing	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.6 Excess Energy	9.6.1 Light pollution	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.1 Habitat Shifting & Alteration	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

**Table 2.** Threats to *pin-striped slug moth*.

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

Yes: \_\_\_\_\_ No:   x   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:**

Forest fires are needed, on average, every 5-10 years to maintain open woodlands and barrens with pitch pine and scrub oak. Lack of fires will result in the succession of the habitat to a closed-canopy forest of tall oaks and other hardwoods. Conversely, a fire affecting an entire habitat could eliminate all life stages. An active fire management program is utilizing prescribed fire with appropriate mechanical treatments would benefit this species. The entire habitat should not be burned within one year. Areas of refugia are to be left unburned for the benefit of many species, ensuring any life stage can survive a fire (Little 1979, Jordan et al. 2003).

Conservation actions following ICUN taxonomy are categorized in the table below.

<b>Action Category</b>	<b>Action</b>	<b>Description</b>
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 pin-striped slug moth.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for other moths, and for *Monoleuca semifascia* in particular.

**Easement acquisition:**

- \* \_\_\_\_\_ Where appropriate, acquire easements to promote moth protection and conservation.

**Fact sheet:**

- \_ Create fact sheets covering moths.

**Habitat management:**

- \_ Determine best management regime for moth species, including fire and other forms of management.

**Habitat monitoring:**

- \_ Develop standardized measures of habitat parameters for each species of listed moth.
- \_ Investigate threats to food and host plants.
- \_ Monitor land development projects.

**Habitat research:**

- \_ Examine role of light pollution as threat to moths.
- \_ Determine host/ food plant.

**Life history research:**

- \_ Investigate the metapopulation dynamics of those species which warrant it.
- \_ Examine role of introduced parasites and predators in threats to moths.

**Other action:**

- \_ Develop standard definition of what is needed for "viable" populations of moths.
- \_ Research the role of pesticide use in threats to moths.

**Population monitoring:**

- \_ Inventory of species within historical range.
- \_ Develop standardized survey protocols for moths.

**Private fee acquisition:**

- \_ Where appropriate, encourage/assist private entities to acquire land for moth protection and conservation.

**State fee acquisition:**

- \_ Where appropriate, acquire land essential to moth protection and conservation.

**State land unit management plan:**

- \_ Incorporate needs of moths into state land management plans.

## VII. References

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<b>Originally prepared by</b>	Shawn Ferdinand
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