

# Species Status Assessment

**Common Name:** Black-bordered lemon moth **Date Updated:** March 2025

**Scientific Name:** *Marimatha nigrofimbria* **Updated By:** NYSDEC Wildlife Section

**Class:** Insecta

**Family:** Noctuidae

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

The black-bordered lemon moth was formerly classified in the genus *Thioptera*. This species is found from southern New York and Massachusetts to Florida, west to Texas and Arizona, and from the Midwest in Ohio, Missouri, Kansas, and Oklahoma (Covell 1984, NYSDEC 2010, NatureServe 2012, Pogue 2012). Its habitat requirements are not well understood. In New York, this species has been captured at two locations on Long Island in 2007 (NYNHP 2013). Prior to that, this moth was not known in the state.

DEC is not aware of any additional data or new information on population trends or threats to this species since the last SWAP revision in 2015. This species was listed as SPCN in 2015, but with the removal of this status in the 2025 revision it has been changed to SGCN.

## I. Status

### a. Current legal protected Status

i. **Federal:** Not listed \_\_\_\_\_ **Candidate:** \_\_\_\_\_

ii. **New York:** Not listed \_\_\_\_\_

### b. Natural Heritage Program

i. **Global:** G5 \_\_\_\_\_

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

### Other Ranks:

-NYS 2025 SGCN status: SGCN

-IUCN Red List: N/A

-Northeast Regional SGCN: N/a

### Status Discussion:

Status information is unknown for this species.

## II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown			-
Northeastern US	Yes	Unknown	Unknown			-
New York	Yes	Unknown	Unknown			Yes
Connecticut	No	-	-			-
Massachusetts	No data	-	-			-
New Jersey	No data	-	-			-
Pennsylvania	No data	-	-			-
Vermont	No	-	-			-
Ontario	No data	-	-			-
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

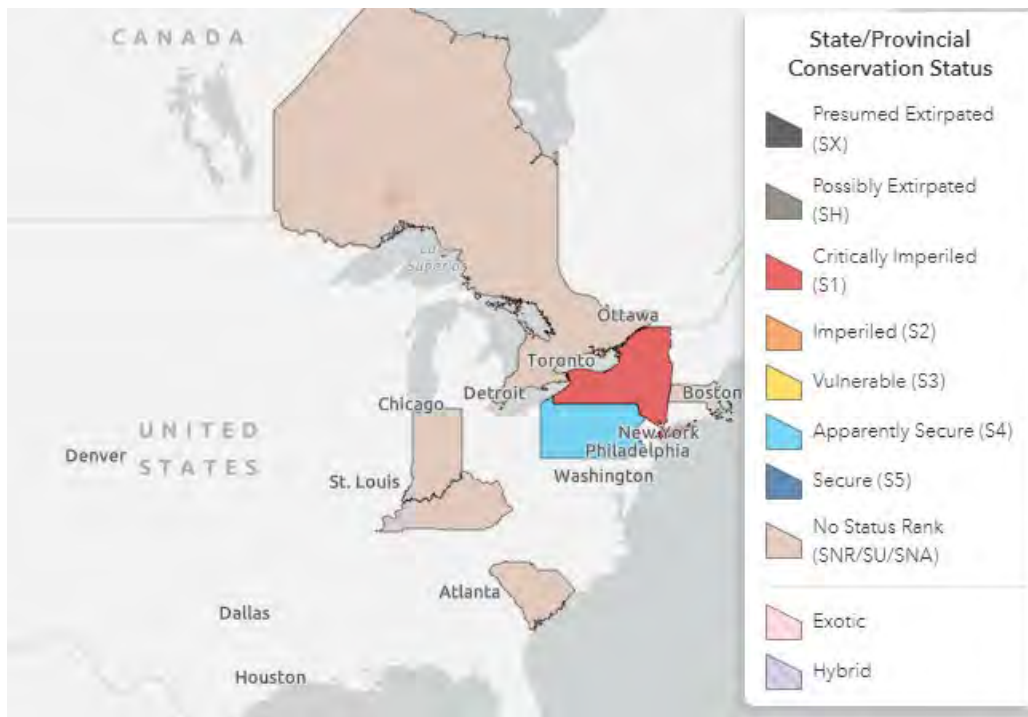
**SGCN?:** Yes; No; Unknown; (blank) or Choose an item

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

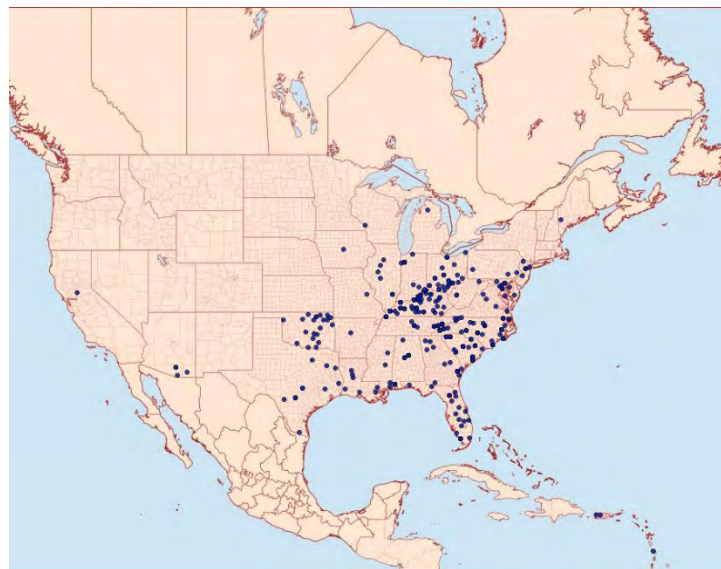
There are currently no monitoring or survey activities for this species.

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

Short and long term trends for this species cannot be determined due to its rarity (NYNHP 2013). The two captures from an extant population on Long Island in 2007 represent the first records of this species in the state (NYNHP 2013).

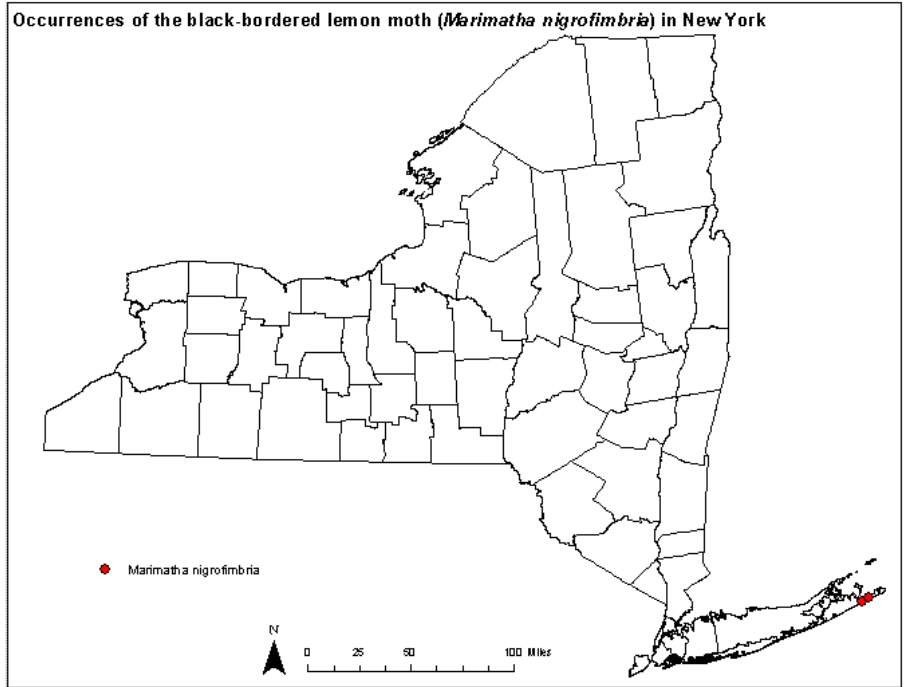


**Figure 1.** Conservation status of *Marimatha nigrofimbria* in North America (NatureServe 2024).



**Figure 2:** Occurrences of black-bordered lemon moth in North America (MPG 2010).  
\*may not account for all occurrences.

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



**Figure 3:** New York occurrences of black-bordered lemon moth (NYNHP 2013).

**Details of historic and current occurrence:**

There were no records of this species in New York prior to 2007.

There are two current records of this species from 2007 on Long Island (NYNHP 2013). One capture was at the Hither Hills Uplands at Hither Hills State Park in East Hampton, Suffolk County (NYNHP 2013). The other capture, also in East Hampton, was at Napeague Beach at Napeague State Park (NHNYP 2013). Both locations were surveyed with blacklight traps.

**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%	Disjunct	Unknown

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. Maritime dunes
- b. Old field managed grasslands

## Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/Community Trend	Time frame of Decline/Increase
No	No	-	Stable	

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:

The black-bordered lemon moth's preferred habitat is poorly understood. Based on the two captures in New York, it seems to be associated with maritime dunes, grasslands, and heathlands (NYNHP 2013). Known foodplants are crabgrass and morning glories; laboratory experiments also show this species will feed on panic grass and bluegrass (NYNHP 2013).

## 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):

Information about the demographics and life history of this species is sparse. It is thought that it flies between June and September (Covell 1984). When the larvae of this species are handled 'roughly' they wriggle violently and regurgitate a yellow-green fluid (Wagner et al. 2011).

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

Threats specific to this species have not been identified in the literature. General threats known 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	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	(over-browsing by deer)	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 1.** Threats to *Marimartha nigrofimbria*

**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:**

This species was collected on state owned which is dedicated to the preservation of wildlife habitat.

**Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:**

Minimizing lighting to maintain dark sky conditions would be beneficial (NYNHP 2012). When lighting is necessary, it's best to use lights that emit red or yellow light because insects are generally not attracted to those colors (NYNHP 2012). Insecticide use should be avoided when possible if rare species are present (NYNHP 2012). When insecticide is needed, careful planning along with consistent rare species monitoring can result in successful eradication of the target species without eliminating rare species (NYNHP 2012).

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.7 Legislative and Regulatory Framework or Tools	C.7.1.3.0 Create, amend, or influence regulation	
C.7 Legislative and Regulatory Framework or Tools	C.7.2.1.0 Create or amend policies	

**Table 3.** Recommended conservation actions for *Marimatha nigrofimbria* (add more lines as needed).

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for other moths, and for the black-bordered lemon moth 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>Date first prepared</b>	March 18, 2013
<b>First revision</b>	July 18, 2013
<b>Last revision</b>	