

Species Status Assessment

Common Name: A geometrid moth

Date Updated: March 2025

Scientific Name: *Euchlaena madusaria* **Minor Edits by:** NYSDEC Wildlife Section

Class: Insecta

Family: Geometridae

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

Euchlaena madusaria is known by two common names: sandplain euchlaena moth and scrub echlaena moth. It ranges from southern British Columbia to Nova Scotia, southward to Florida, Missouri and Oregon (McGuffin 1981). In New York, the short-term trends are stable, with populations on Long Island proven extant and viable. The long-term trends of this species are unknown (New York Natural Heritage Program 2013). This species inhabits dry woodland and scrublands within barrens and other sandy areas. Larval host plants include oak (*Quercus sp.*) and lowbush blueberry (*Vaccinium angustifolium* and *V. pallidum*) (Nelson 2007).

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: Species of Greatest Conservation Need

-IUCN Red List: N/A

-Northeast Regional SGCN: N/a

Status Discussion:

The sandplain euchlaena moth is listed as apparently globally secure. The conservation status in New Hampshire is S1. This species has yet to be assessed in Connecticut, Rhode Island, Alberta and Ontario, Canada (NatureServe 2012).

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 data	-	-			Yes
Massachusetts	No data	-	-			Yes
New Jersey	Yes	Stable	Stable			-
Pennsylvania	No data	-	-			-
Vermont	No	-	-			-
Ontario	No data	-	-			-
Quebec	No data	-	-			-

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.

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

Euchlaena madusaria ranges from southern British Columbia, eastward to Nova Scotia and southward to Florida, Missouri and Oregon (McGuffin 1981). Short-term trends of this species are stable. A population on Long Island has proven to be extant and viable. The long-term trend in New York is unknown (New York Natural Heritage Program 2013).

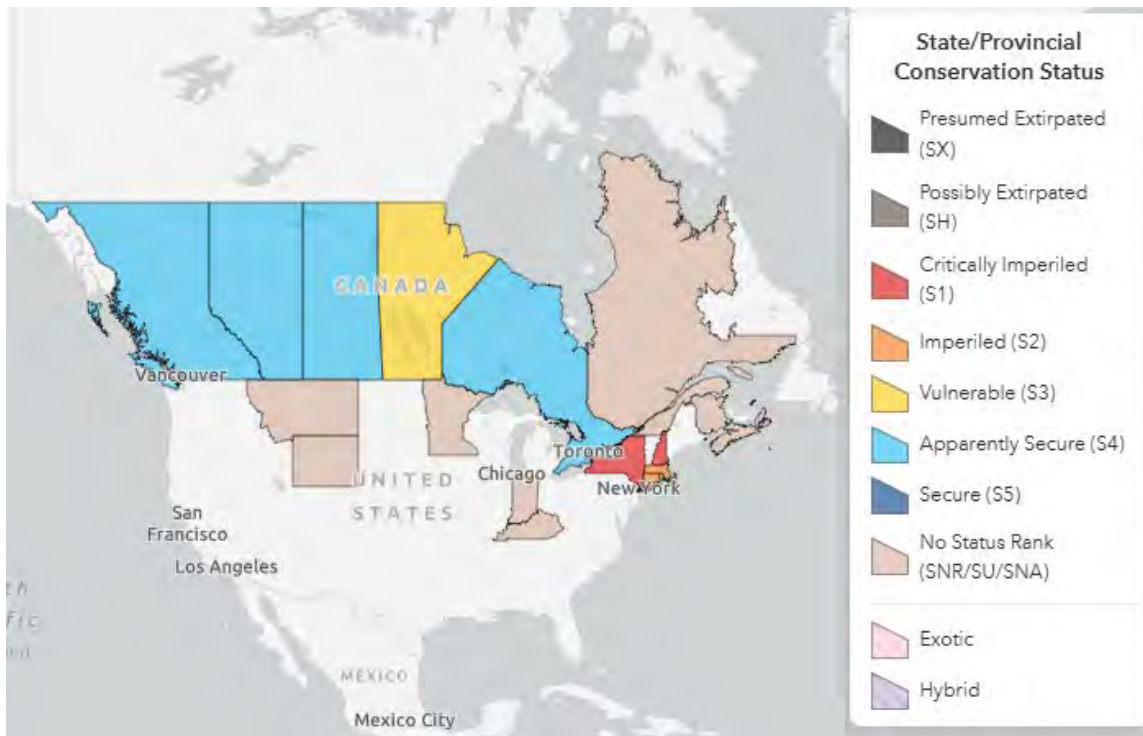


Figure 1. Conservation Status of *Euchlaena madusaria* in North America (NatureServe 2025).

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

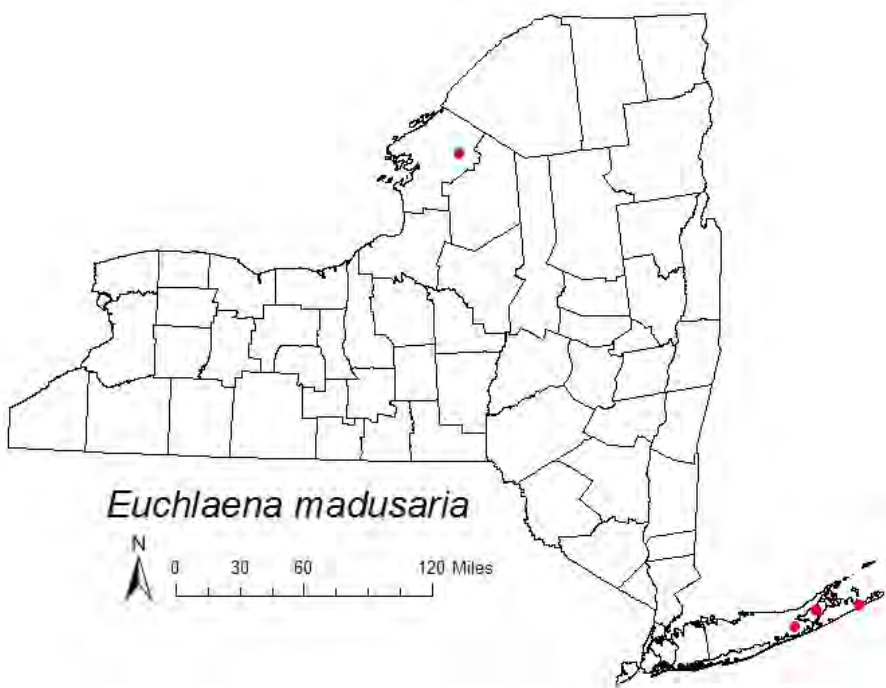


Figure 2. Occurrence locations of *Euchlaena madusaria* in New York (New York Natural Heritage Program 2013). Map created by Shawn Ferdinand, NYSDEC.

Details of historic and current occurrence:

Forbes (1948) reported this species at Yaphank, Suffolk County but did not provide a date.

Euchlaena madusaria was collected on Robins Island, Suffolk County in 1997. Four adult moths were captured in 1997 and 3 more adults were captured in 2005 in the dwarf pine barrens in Southampton, Suffolk County. Additional moths were collected in 2007 at Napeague State Park, Suffolk County. In 2012, a single individual was collected at Fort Drum Military Installation, Jefferson County (New York Nature Explorer 2009, New York Natural Heritage Program 2013).

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
- b. Oak-pine forest
- c. Oak forest

Habitat or Community Type Trend in New York

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

Euchlaena madusaria inhabits dry woodlands and adjacent scrublands in sandy or barrens areas. In New York, this species has been found in pitch pine-oak-heath woodlands, maritime heathlands, and dwarf pine plains (Nelson 2007, New York Natural Heritage Program 2013). Western populations inhabit dry woodlands in the montane, prairie, and southern boreal region (University of Alberta E.H. Strickland Entomological Museum 2013). Larval host plants include lowbush blueberry and a variety of oak species.

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):

Euchlaena madusaria produces two broods per year. Adult flight stages are in late May through late June and August. Adults lay up to 225 eggs, which hatch in about 10 days. Larvae are most likely polyphagous, but prefer lowbush blueberries and a variety of oak species. The second generation of larvae overwinters and completes development in the spring (McGuffin 1981, Nelson 2007).

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

Threats facing *Euchlaena madusaria* are fragmentation and habitat loss from residential and commercial development. Fire suppression can further affect habitat loss by allowing forests to mature and close canopies and alter understory vegetation. Periodic controlled burns or mechanical removal of vegetation are needed to maintain the natural community at the dwarf pine barrens. Additional threats to this species include invasion by exotic plants, introduced generalist parasitoids, off-road vehicles, and light pollution (Boettner et al. 2000, Nelson 2007, New York Natural Heritage Program 2013). There are broad scale studies that have shown artificial lighting to be a partial cause in changes in moth behavior and predation rates, which could affect population levels (Frank 2006). General threats known to affect moths include 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).

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)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
6. Human Intrusions & Disturbance	6.1 Recreational Activities	-	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 2. Threats to *Euchlaena madusaria*.

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:

One of the populations on Long Island is found on Robins Island, privately owned by the Moore Charitable Foundation, which is dedicated to the preservation of wildlife habitat. The two other populations known on Long Island occur on state owned lands and are protected from development. The populations collected in Napeague State Park, Suffolk County are on state owned lands and are protected from development. The sandplain euchaena moths collected on the Fort Drum Military Installation, Jefferson County are on one federally owned land, and are protected from development.

This species should be monitored using black light traps in June and August. Periodic controlled burns and mechanical removal of vegetation are needed to maintain dwarf pine barren communities. Restricting ATV use and minimizing light pollution around occupied areas would benefit this species (New York Natural Heritage Program 2013).

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 *Euchlaena madusaria*.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for other moths, and for *Euchlaena madusaria* 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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