

Species Status Assessment

Common Name: Fringed Dart Moth

Date Updated: March 2025

Scientific Name: *Eucoptocnemis fimbriaris* **Minor Edits 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):

This fringed dart moth ranges from New Hampshire to Florida and westward to Indiana and Texas (Covell 1984). In New York, it inhabits maritime grassland and pine barrens on Long Island. Extensive monitoring has found 5 populations in Suffolk County, with one population known to be viable. The long term trend of this species is declining due to habitat loss from development and fire suppression. This species is known to be uncommon/rare in the northern parts of its range (New York Natural Heritage Program 2011). Additional research is needed to determine the larval foodplant of this species and understand habitat requirements.

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 to indicate a need for change in SGCN status

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Not listed

b. Natural Heritage Program

i. **Global:** G4

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

Other Ranks:

-NYS 2025 SGCN Status: SGCN

-IUCN Red List: N/A

-Northeast Regional SGCN: Watchlist

Status Discussion:

This species is listed as possibly extirpated in New Hampshire; critically imperiled in Connecticut, New York and Indiana; and has not been assessed in Massachusetts, Wisconsin and Michigan (NatureServe 2012). One population on Long Island has repeatedly been surveyed and appears to be stable and viable (New York Natural Heritage Program 2011).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable			-
Northeastern US	Yes	Stable	Stable			-
New York	Yes	Declining	Unknown			Yes
Connecticut	Yes	Stable	Stable		SC	Yes
Massachusetts	Yes	Stable	Stable			-
New Jersey	Yes	Stable	Stable			-
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

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

The long term trend of this species has been in decline due to habitat loss. The short term population trend is stable. In consecutive years, adults captured a black light traps have shown a population on Long Island to be extant and viable (New York Natural Heritage Program 2011).

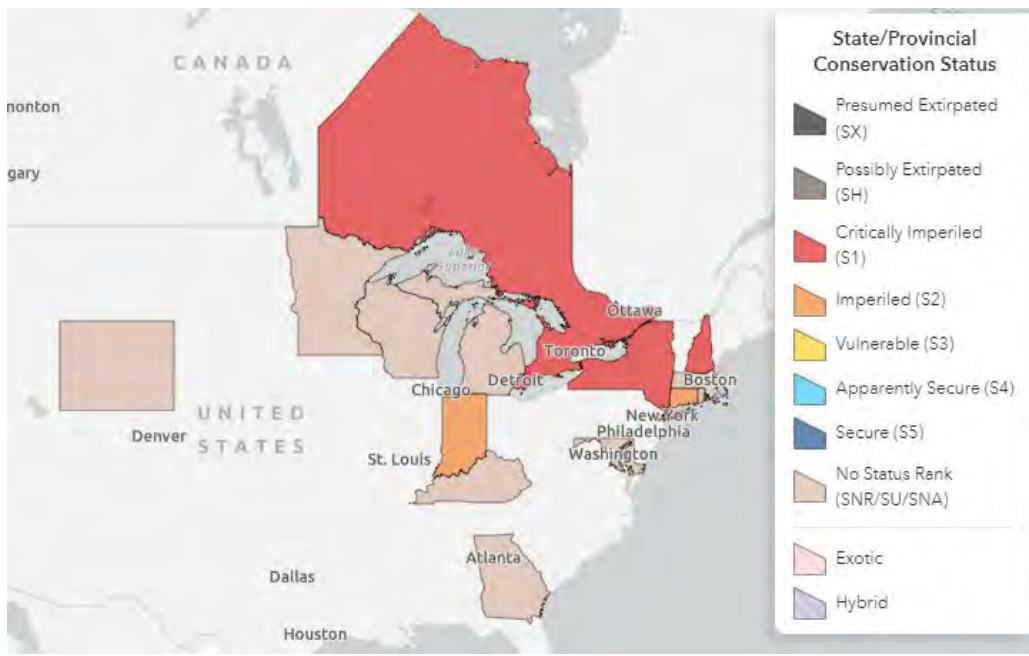


Figure 1. Conservation status of *Eucrotoenemis fimbriaris* in North America (NatureServe 2024).

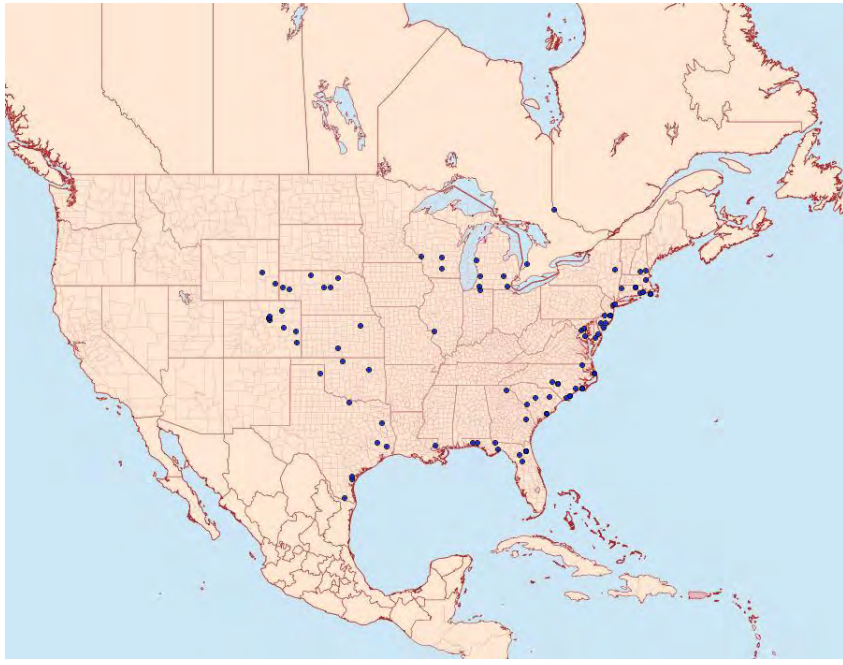
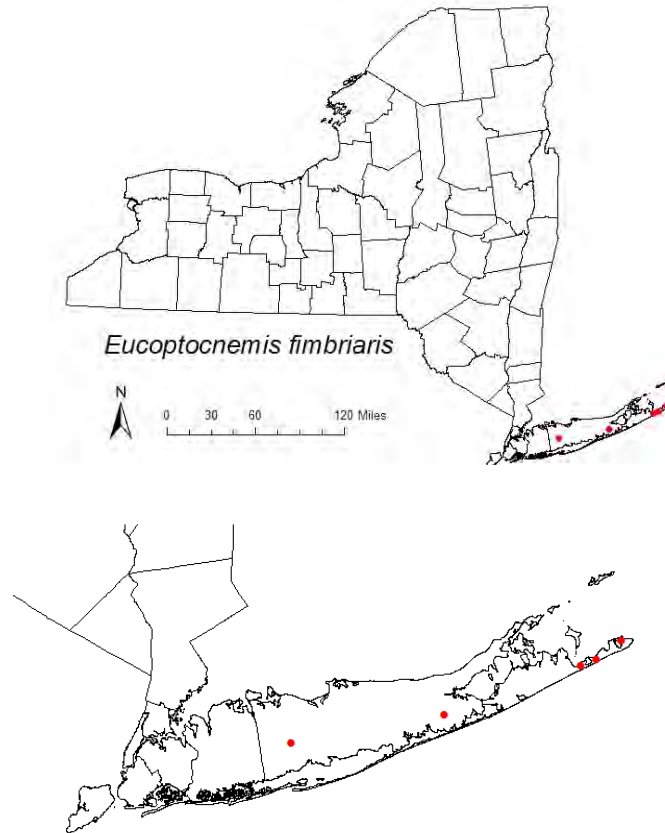


Figure 2. States and provinces with current records of occurrence of *E. fimbriaris*. Map data is collected from museum specimens and photographs. Some records may not be represented (North American Moth Photographers Group 2012).

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



Figures 3 and 4. Occurrence locations of *E. fimbriaris* in New York (New York Natural Heritage Program 2013). Map created by Shawn Ferdinand, NYSDEC.

Details of historic and current occurrence:

There is one historical record of this species from Brooklyn, Kings County in 1901 and from Orient, Suffolk County in 1936 (Lafontaine 2004, New York Natural Heritage Program 2012). There is also a historic specimen from Saratoga (expert meeting).

In 1992, one specimen was collected in Edgewood Oak Brush Plain Preserve, Suffolk County. In 1995, 17 adults and in 2000, 20 adults were observed in Montauk County Park, Suffolk County. In 2005, two individuals were collected in dwarf pine barrens in the town of Southampton, Suffolk County. Between 23 May and 17 October 2007, specimens were collected at Napeague State Park and Hither Hills State Park, Suffolk County (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. Maritime dunes
- c. Coastal coniferous barrens
- d. Native barrens and savannah

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:

This species inhabits sandy, grassy areas. In New York this species occupies areas of maritime grasslands, maritime heathlands, pitch pine-oak-heath woodlands, and pitch pine-scrub oak barrens. Identification of the larval foodplant, which is currently unknown, will better define the description of this species' preferred habitat (New York Natural Heritage Program 2011).

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 life history of this noctuid moth is not fully understood. Adult moths lay one brood of eggs per year. Larvae tunnel underground during the day. The larvae overwinter and pupate in a chamber underground. Larval foodplants are unknown, but most likely feed on a variety of forbs and low plants such as grasses and herbs. The flight season of adults is from mid-September to mid-October (Covell 1984, Wagner et al. 2008).

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

Development and fire suppression have degraded habitat for this species. Recreational activities in parks—where all of New York’s populations occur—can destroy larval foodplant species (New York Natural Heritage Program 2011). Broad scale studies 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 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, and over grazing of host plants by wild deer populations (NYSDEC 2005).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
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.

Table 1. Threats to *Eucptocnemis fimbriaris*.

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:

Although this species does not have any legal protection, most occurrences in New York are in state-owned parks and nature preserves, and are thus protected from development.

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

This species has been captured previously using black light traps (New York Natural Heritage Program 2013).

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 *Eucoptocnemis fimbriaris* (add more lines as needed).

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

NatureServe. 2024. NatureServe Explorer. Page last published 11/1/24.

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.860971/Eucoptocnemis_fimbriaris. Accessed December 5, 2024.

Ferdinand, Shawn. 2013. *Eucoptocnemis fimbriaris* Status Assessment for the 2015 New York State Wildlife Action Plan. NYSDEC. Albany, New York.

Boettner, G.H., J.S. Elkington, and C.J. Boettner. 2000. Impacts of an introduced generalist parasitoid on three native species of saturniid moths. *Conservation Biology* 14: 1798–1806

Covell, Charles V. 1984. *A field guide to the moths of eastern North America*. Houghton Mifflin Company, Boston.

Frank, K.D. 2006 Effects of artificial night light on moths. *Ecological Consequences of Artificial Night Lighting* (eds C. Rich & T. Longcore), pp.345–364. Washington, Island Press.

Lafontaine, J. D. 2004. Noctuoidea. Noctuidae (Part), Noctuinae (Part-Noctuini). In Dominick, R. B. et al. (eds.), *The Moths of America North of Mexico*. Fasc. 27.1, Wedge Entomological Foundation, Washington DC.

- NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 8 March 2013.
- New York State Department of Environmental Conservation. 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>.
- New York Natural Heritage Program. 2011. Online Conservation Guide for *Eucloptocnemis fimbriaris*. Available from: <http://www.acris.nynhp.org/guide.php?id=8157>. Accessed 7 March 2013.
- New York Natural Heritage Program. 2013. Biodiversity database. Albany, NY. Accessed 7 March 2013.
- North American Moth Photographers Group. 2012. Mississippi Entomological Museum at Mississippi State University, MS. <http://mothphotographersgroup.msstate.edu/MainMenu.shtml>. Accessed 11 March 2013.
- Schweitzer, D.F. 2004. Gypsy Moth (*Lymantria dispar*): Impacts and Options for Biodiversity-Oriented Land Managers. NatureServe: Arlington, Virginia. 59 pp.
- Wagner, D.L., D.F. Schweitzer, J.B. Sullivan, and R.C. Reardon. 2008. Owllet Caterpillars of Eastern North America (Lepidoptera: Noctuidae).

Originally prepared by	Shawn Ferdinand
Date first prepared	March 8, 2013
First revision	Samantha Hoff (February 10, 2014)
Last revision	