Species Status Assessment

Common Name: Acadian swordgrass moth **Date Updated:** March 2025

Scientific Name: *Xylena thoracica* **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 species is widely distributed across North America and can be found in pitch pine–scrub oak barrens, and bogs in the northern extant of its range (Wagner et al. 2003). It was historically found throughout the Hudson Valley and in Long Island Bay; however, it now only occurs in Clinton and Franklin counties (NYSDEC 2005). There is little information regarding recent trends in species distribution or abundance.

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:** No

ii. **New York:** Not listed

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1S2 **Tracked by NYNHP?:**

Other Ranks:

-NYS 2025 SGCN Status: SGCN

-IUCN Red List: N/A

-Northeast Regional SGCN: N/A

Status Discussion:

The Acadian swordgrass moth is rare in New York, occurring in only four known locations.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	-			-

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

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):*

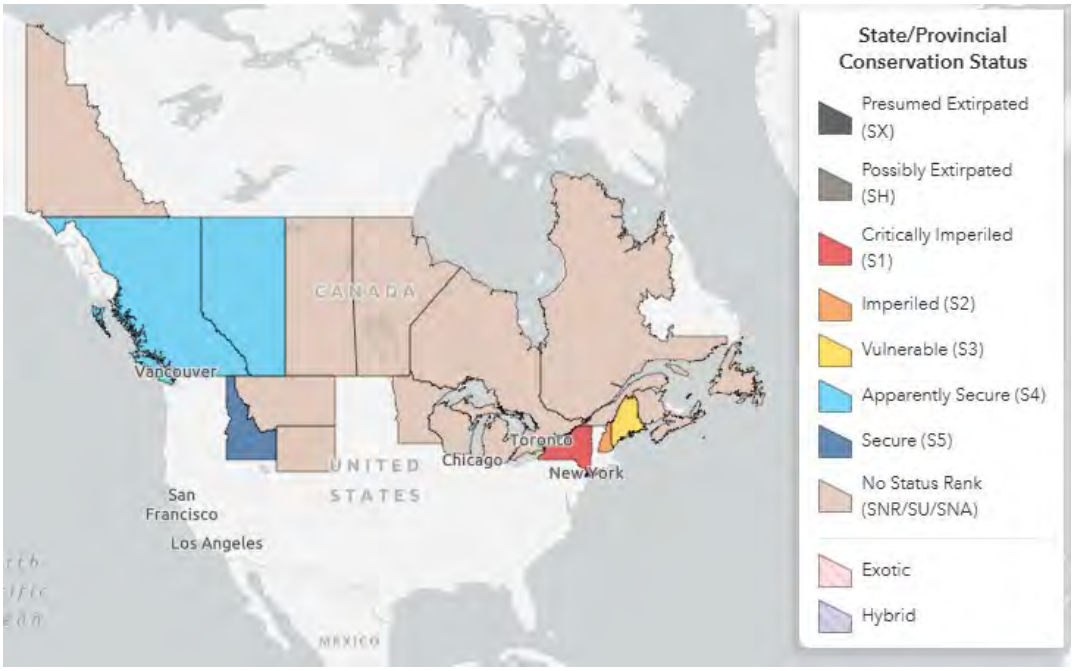

Figure 1. Conservation status of *Xylena thoracica* in North America (NatureServe 2024).

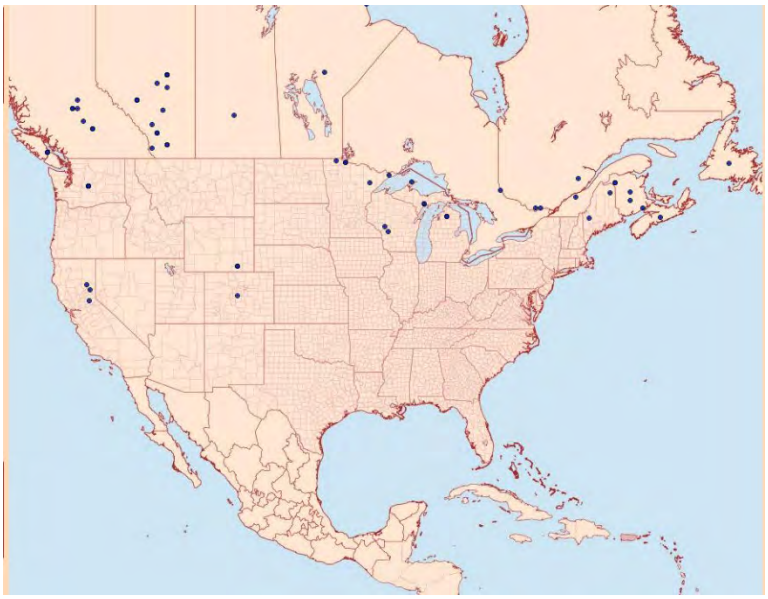

Figure 1: Occurrence map of Acadian Swordgrass moth in North America (MPG 2010). *may not account for all known occurrences.

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

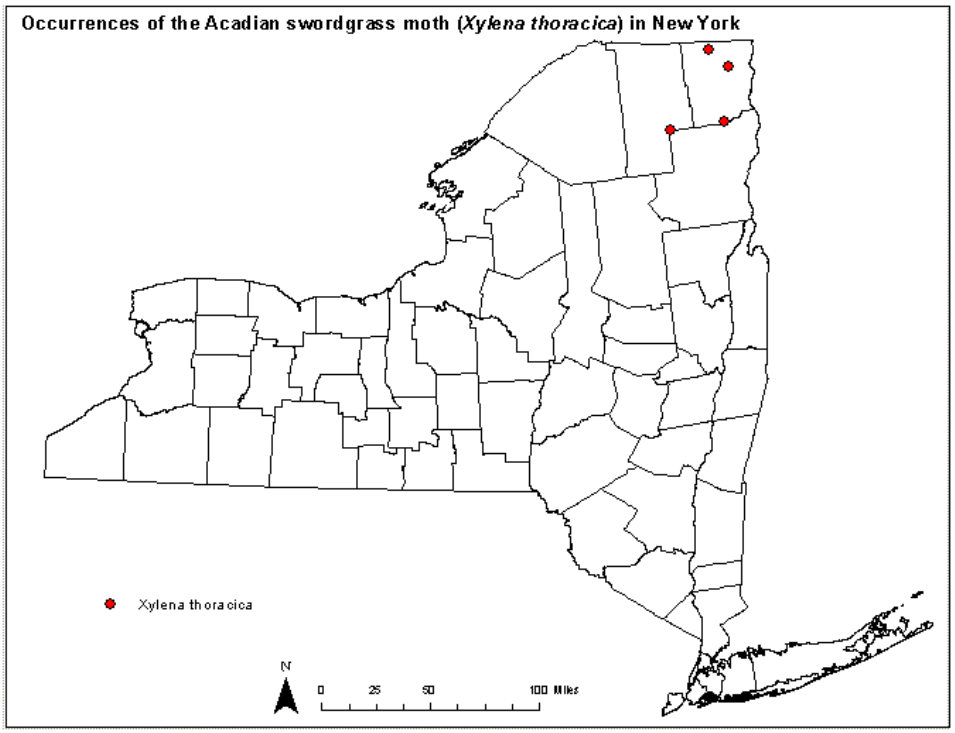

Figure 2. Occurrences of the Acadian swordgrass moth in New York (New York Natural Heritage Program 2013). Map created by Jim Katz, NYSDEC.

Details of historic and current occurrence:

Historically this species was found throughout the Hudson River Valley. One occurrence of approximately 30 individuals is reported by the New York Natural Heritage Program in 1988 at Bloomingdale Bog, Franklin County (NYSDEC 2009). There are also Natural Heritage records of captures at the same location in 1982 and 1990 (NYSDEC 2009).

Since 1988, there have been four separate occurrences reported by the New York Natural Heritage Program. One location is Bloomingdale Bog in Franklin/Essex County, where the species was last confirmed in 1988 and 1990 (NYSDEC 2009). The other three locations are in Clinton County: Clintonville Pine Barrens in 1991, Altona Flat Rock in 1995, and Gadway Sandstone Pavement Barrens Preserve in 2003 (NYSDEC 2009).

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. Open acidic peatlands

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	-	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 is found in pitch pine-scrub oak barrens and bogs (Wagner et al. 2003).

V. Species Demographic, and Life History:

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

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):*

Demographics and life history information is not available.

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).

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.
3. Energy Production & Mining	3.2 Mining & Quarrying	(mineral extraction)	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 2. Threats to *Xylena thoracica.*

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:

The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. The Adirondack Park Agency has the authority to regulate smaller wetlands within the Adirondack Park.

This species was collected on state owned property, which protects the species from future development.

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

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

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 *Xylena thoracica* (add more lines as needed).

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for other moths, and for the Acadian swordgrass 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

NatureServe. 2024. NatureServe Explorer. Page last published 11/1/24. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.114229/Xylena_thoracica. Accessed December 6, 2024.

Katz, Jim. 2013. *Xylena thoracica* 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

MPG. 2010. *Xylena thoracica*. Moth Photographers Group at the Mississippi Entomological Museum at the Mississippi State University. Available at: < http://mothphotographers group.msstate.edu/large_map.php?hodges=9875> (Accessed: March 1, 2013).

New York Natural Heritage Program. 2013. Biodiversity database. Albany, New York. Accessed 15 February 2013.

NYSDEC. 2005. New York State Comprehensive Wildlife Conservation Strategy. New York State Department of Environmental Conservation. http://www.dec.ny.gov/animals/30483.html.

New York State Department of Environmental Conservation. 2009. New York Nature Explorer. <http://www.dec.ny.gov/natureexplorer/app/>. Accessed 15 February 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., Nelson, M.W., and D.F. Schweitzer. 2003. Shrubland Lepidoptera of southern New England and southeastern New York: ecology, conservation, and management. Forest Ecology and Management 185: 95-112.

Originally prepared by	Jim Katz
Date first prepared	March 1, 2013
First revision	Samantha Hoff (July 18, 2013)
Last revision	