

Species Status Assessment

Common Name: Grey woodgrain

Date Updated: January 15, 2024

Scientific Name: *Morrisonia mucens*

Updated By:

Class: Lepidoptera

Family: Noctuidae

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

The gray woodgrain moth (*Morrisonia mucens*) belongs to a group called the dart or cutworm moths. When resting, the moths hold their wings back in a triangular "dart-like" position. They also cut plant stems off at the base by chewing on them near the soil level (NYNHP 2012).

This species is known from Long Island, New York, south to Florida, and west to Ohio and Texas (Covell 1984). The gray woodgrain is a barrens specialist. Currently, in New York State, this species is known only from Napeague State Park and the dwarf pine barrens on Long Island. Future inventories may locate this species at other pine barrens type habitats on Long Island and possibly off the coastal plain (NYNHP 2012).

I. Status

a. Current legal protected Status

i. **Federal:** not listed **Candidate:** no

ii. **New York:** not listed, SGCN

b. Natural Heritage Program

i. **Global:** G4G5

ii. **New York:** S1S3 **Tracked by NYNHP?:** yes

Other Ranks:

none

Status Discussion:

This species appears to be stable on Long Island, although monitoring is limited. Surveys since 1993 have indicated very little change in the dwarf pine barrens population on Long Island, with the exception of 2005 surveys, which showed a significant increase in numbers of moths. It is possible that previous forest fires in the dwarf pine plains caused an increase in habitat for this species. The long-term trend for this species is tied to the long-term trend of the natural community it lives in. The acreage of dwarf pine plains in New York has declined from development, although there is still a large occurrence of this habitat type on Long Island.

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	Stable	Stable		Not listed	Yes
Connecticut	No	-	-			-
Massachusetts	Yes	Stable			Not listed	No
New Jersey	No	-	-			-
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*):

None.

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

Distribution data for this species is known to be incomplete.

From NYNHP 2024: "This species appears to be stable on Long Island. Surveys since 1993 have indicated very little change in the dwarf pine barrens population on Long Island, with the exception of 2005 surveys, which showed a significant increase in numbers of moths. It is possible that previous forest fires in the dwarf pine plains caused an increase in habitat for this species. The long-term trend for this species is tied to the long-term trend of the natural community it lives in. The acreage of dwarf pine plains in New York has declined from development, although there is still a large occurrence of this habitat type on Long Island."

Gray Woodgrain Moth

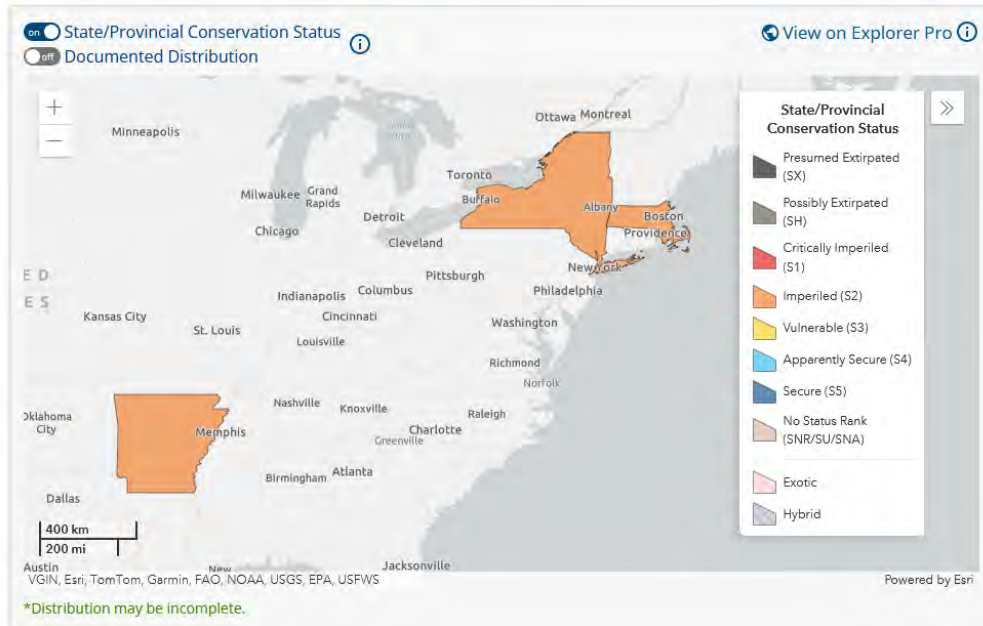


Figure 1. *Morrisonia mucens* distribution and status. Note that the distribution data appears to be incomplete (NatureServe).

Observations

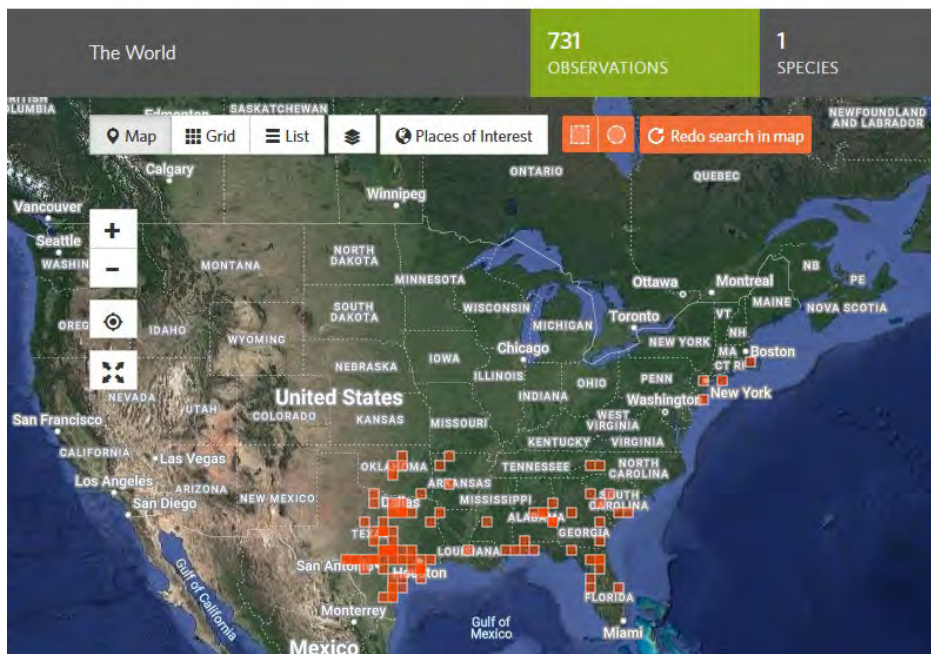


Figure 2. *Morrisonia mucens* distribution and status. Note that all reported observations may not have been reviewed by experts (iNaturalist)

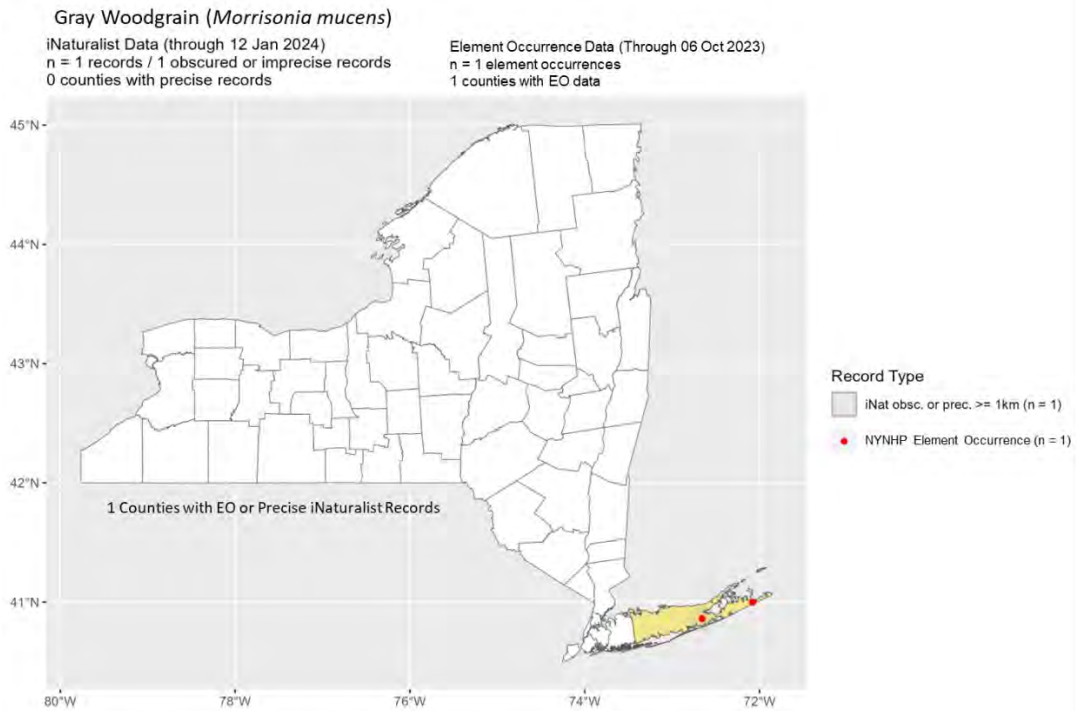


Figure 3. Records of *Morrisonia mucens* in New York (NYNHP and iNaturalist).

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 *Morrisonia mucens* in New York.

Details of historic and current occurrence:

From NYNHP 2024: “The Gray Woodgrain is a barrens specialist. Currently, in New York State, this species is known from Napeague State Park and the dwarf pine barrens on Long Island. Future inventories may locate this species at other pine barrens type habitats on Long Island and possibly off the coastal plain.”

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
51-75%	Core	

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. 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:

From NYNHP (2024): “In New York State, this species is found exclusively in the open-canopy dwarf pine barrens and pitch pine-oak heath woodlands of Long Island. Pitch pine and scrub oak are the dominant plant species in both of these habitats. It is suspected that the larval food source is scrub oak.”

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):

Little information is available for this species. The adults are active in the late spring. It is suspected that the larval food source is scrub oak (NYNHP 2012).

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

From NYNHP (2024): “Known threats include habitat loss due to development and fire suppression, although the threat of development for the remaining habitat on Long Island may be low. The suppression of fires in barrens and other dry places would cause a loss of habitat for the

species and therefore a reduction in population size. This species requires open woodlands or barrens with pitch pine and scrub oaks. Forest fires are needed, on average, every 5-10 years (Jordan et al. 2003) to maintain this type of habitat. Lack of fires will result in the succession of this community to a closed-canopy forest of tall oaks and other hardwoods (Little 1979, Jordan et al. 2003). Conversely, a fire affecting an entire occurrence could eliminate all life stages that are present.”

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.
7. Natural System Modifications	7.1 Fire & Fire Suppression	7.1.2 Suppression in the fire regime (succession & loss of habitat)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Morrisonia mucens*.

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:

From NYNHP 2024: “The best management strategy for this species is the management of the natural community, or habitat, where this species occurs. Maintaining the Long Island pine barrens with their full suite of plant and animal species requires frequent (every few decades) disturbance to maintain open-canopy, shrub-dominated communities and to prevent succession to a closed-canopy hardwood forest (Jordan et al. 2003). Researchers have determined that "an active fire management program utilizing prescribed fire with appropriate mechanical treatments" is the preferred method (Jordan et al. 2003). Researchers have also determined that the size, type, intensity, and timing of fires (pyrodiversity) needs to be evaluated for each site to maximize benefits to the natural community and the species it supports (Jordan et al. 2003). The entire occupied habitat for a population should not be burned in a single year. For example, in places where prescribed burning is used, refugia (unburned areas) are needed for many species to ensure that any life stage can survive a fire.”

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

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
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 *Morrisonia mucens*.

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

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

Jordan, M. J., W. A. Patterson III, A. G. Windisch. 2003. Conceptual ecological models for the Long Island pitch pine barrens: implications for managing rare plant communities. *Forest Ecology and Management* 185, 151-168.

Little, S. 1979. Fire and plant succession in the New Jersey pine barrens. pp. 297-313 in Forman, R.T.T. (ed.) *Pine Barrens: Ecosystem and Landscape*. Academic Press, Inc. Orlando, FL.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1.

NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 2 January 2013.

New York Natural Heritage Program (NYNHP). 2012. Online Conservation Guide for *Morrisonia mucens*. <<http://www.acris.nynhp.org/guide.php?id=8153>>. Accessed 15 January 2024.

New York Natural Heritage Program (NHNHP). 2024. Element Occurrence Database. New York State Department of Environmental Conservation. Albany, NY.

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