

Species Status Assessment

Common Name: An ear moth **Date Updated:** December 18, 2023

Scientific Name: *Amphipoea erepta ryensis* **Updated By:** Hollie Shaw

Class: Insecta

Family: Noctuidae

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

Amphipoea erepta ryensis is a subspecies of *A. erepta*. This subspecies is endemic to New York, occurring in only one location, Pelham Bay Park, Bronx County. Its habitat is tidal marshland containing the larval foodplant northern gama grass (*Tripsacum dactyloides*). Threats facing the single population include accidental fires, invasive *Phragmites australis*, and habitat fragmentation. With greater monitoring of this species, more populations could be discovered in neighboring states with suitable habitat (NYNHP 2023b). NatureServe (2023) states, “both the distinctness and limits of *ryensis* are poorly known.” Differences have been noted when comparing specimens from New York to those in the southern portion of the United States. Specimens from the east coast should also be studied. In addition, some biologists believe the taxon *erepta* may merit its own genus (NatureServe 2023).

I. Status

a. Current legal protected Status

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

ii. **New York:** not listed; HPSGCN

b. Natural Heritage Program

i. **Global:** GUT1?

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

Other Ranks:

-IUCN Red List: not listed

-Northeast Regional SGCN: not listed

Status Discussion:

There is one population in New York where it is also endemic. NatureServe (2023) states, “both the distinctness and limits of *ryensis* are poorly known.” Differences have been noted when comparing specimens from New York to those in the southern portion of the United States. Specimens from the east coast should also be studied. In addition, some biologists believe the taxon *erepta* may merit its own genus (NatureServe 2023).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Stable	1987-1991	Not listed	No
Northeastern US	Yes	Unknown	Stable	1987-1991	Not listed	No
New York	Yes	Unknown	Stable	1987-1991	Not listed, S1, HPSGCN	Yes
Connecticut	No	-	-			-
Massachusetts	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*):

There is no known monitoring activities or regular survey efforts for this species. Larvae of this species can be monitored around June 1st by examining the bases of northern gama grass stems for a 2 mm wide hole. Adults can be captured using black lights in mid to late June (Ferdinand 2013).

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

Short term population trend is unknown in New York. The single population in New York was confirmed to still exist in 1999. *A. erepta ryensis* is thought to have experience a long-term decline due to loss and fragmentation of habitat (NYNHP 2023b).

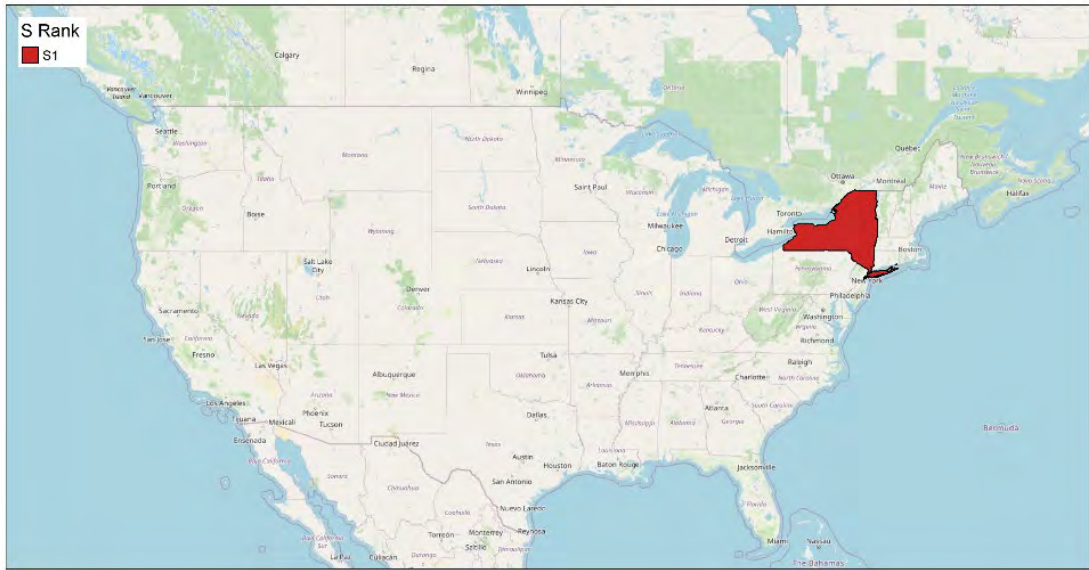


Figure 1. *Amphipoea erepta ryensis* distribution and status (NatureServe 2023)

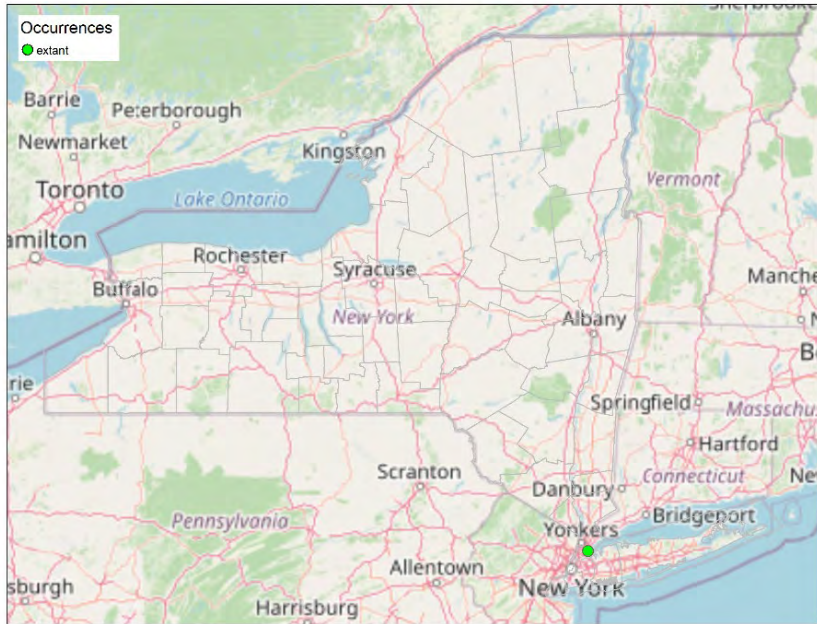


Figure 2. *Amphipoea erepta ryensis* distribution and (NYNHP 2023a)

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

Years	# of Records	# of Counties	% of State
Pre-2000	1	1	<1
2000- 2023	1	1	<1

Table 1. Records of *Amphipoea erepta ryensis* in New York.

Details of historic and current occurrence:

Currently, one population is known to exist in New York City (in Pelham Bay Park) that was last confirmed in 1999. Historically, one other population was documented nearby in Rye, New York, but this population no longer exists (Forbes 1954; E. Quinter, personal communication, cited in City of New York 1987; Schneider 1999).

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
100% (endemic)	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. Salt Marsh

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/Community Trend	Time frame of Decline/Increase
Yes	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 moth is found in wetlands, which are usually or always tidal, that contain an abundance of the larval foodplant, northern gama grass (*Tripsacum dactyloides*). At the only population known to exist in New York State, the moth is found primarily in wetlands and wet meadows in a park. Northern gama grass is found at scattered wetland edges throughout the park and composes a 3-acre swath in one 25-acre wet meadow (Kunstler 1991).

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):

Amphipoea erepta ryensis adults lay one brood of eggs each year. Larvae emerge from eggs in the late spring and burrow into the stems of northern gama grass (*Tripsacum dactyloides*). After two weeks, larvae leave the stems to pupate under the soil. The larvae emerge within the first two weeks of June. Adults can be seen from mid-June and early July (Bird 1913, NYNHP 2023b).

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

Amphipoea erepta ryensis is dependent on the status of its only larval foodplant, northern gama grass. Major threats that have been recognized to limit the growth of this plant are wildfire and competition with *Phragmites australis*. Fire could potentially eliminate the remaining population within Pelham Bay Park. It is recommended when using prescribed burns as a management tool to leave patches of gamma grass to serve as a sanctuary for *A. erepta ryensis*. *Phragmites australis* outcompetes northern gama grass and eventually replaces it. The large amount of development in the New York City area over the last few decades has eliminated and fragmented the habitat (New York Natural Heritage Program 2023b). General threats identified to affect moth species include natural succession of shrubland, woodland, and barrens habitats; land clearing; coastal erosion; and sea level rise. Past use of chemical biocides to control spongy 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), but it is not known how it affects this species. Other threats may include 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	1.1.1 Dense housing & urban areas (development in NYC area causing habitat loss/degradation/fragmentation)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.1 Fire & Fire Suppression	-	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	8.2.8 Interspecific competition with a favored species (competition between only larval foodplant, northern gama grass, and <i>Phragmites australis</i> .)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Amphipoea erepta rynesis*.

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 Tidal Wetlands Act protects all tidal wetland habitats and adjacent areas under Article 25 of the NYS Conservation Law. The population of *A. e. ryensis* is within the state-owned Pelham Bay State Park and is 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:

Since this moth is sensitive to fire, some areas should be left unburned as refugia when controlled burns are planned. After the area occupied by the one known population was burned in 1987, the moth was only found in patches of grass that escaped the burn (City of New York 1987). In addition, it would be beneficial to control the spread of Phragmites, and restrict or minimize mosquito spraying, in occupied areas (NYNHP 2023b).

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 *Amphipoea erepta ryensis*.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for moths.

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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