Species Status Assessment

Common Name: Barrens itame **Date Updated:** March 2025

Scientific Name: *Speranza exonerata* **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):*

The barrens itame can be found from Maine to Virginia, and west to New York and Pennsylvania. Most occurrences are in the undisturbed pine barrens of New Jersey (NHFG 2006, Schweitzer et al. 2011, NatureServe 2012). This species is believed to be more widespread on Cape Cod and nearby islands off the coast of Massachusetts, and possibly on Long Island, New York (Nelson 2007, Schweitzer et al. 2011, NatureServe 2012). This species is declining throughout its range except in New Jersey (NHFG 2006, Nelson 2007, NatureServe 2012). The barrens itame has been captured in New York as recently as 2005 (NYNHP 2013).

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:** G3G4

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

Other Ranks:

-NYS 2025 SGCN Status: SGCN

-IUCN Red List: N/A

-Northeast Regional SGCN: N/A

Status Discussion:

The barrens itame is ranked by The Nature Conservancy as Imperiled or Critically Imperiled in every state where it occurs except for New Jersey, where it is ranked as Vulnerable. It does not occur in Vermont.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1982-2012		-
Northeastern US	Yes	Declining	Declining	1982-2012		-
New York	Yes	Declining	Declining	1982-2012		Yes
Connecticut	Yes	Declining	Declining	1983-2013	T	Yes
Massachusetts	Yes	Declining	Declining	1982-2012	SC	Yes
New Jersey	Yes	Stable	Stable	1982-2012		Yes
Pennsylvania	Yes	Unknown	Unknown			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):*

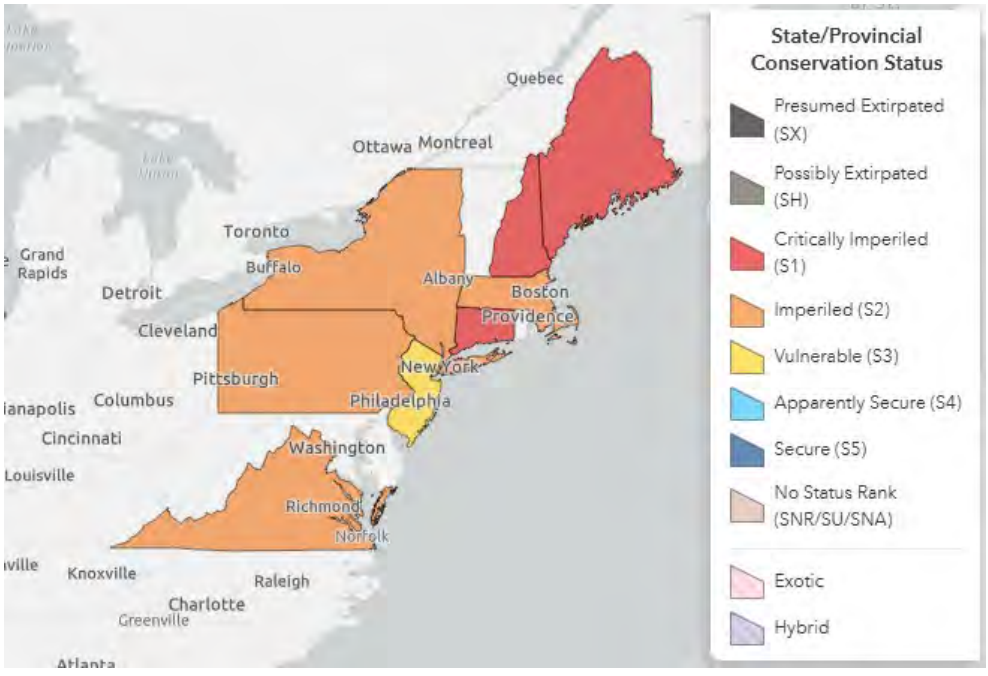

Figure 1. Conservation status of *Speranza exonerata in North America (NatureServe 2024).*

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

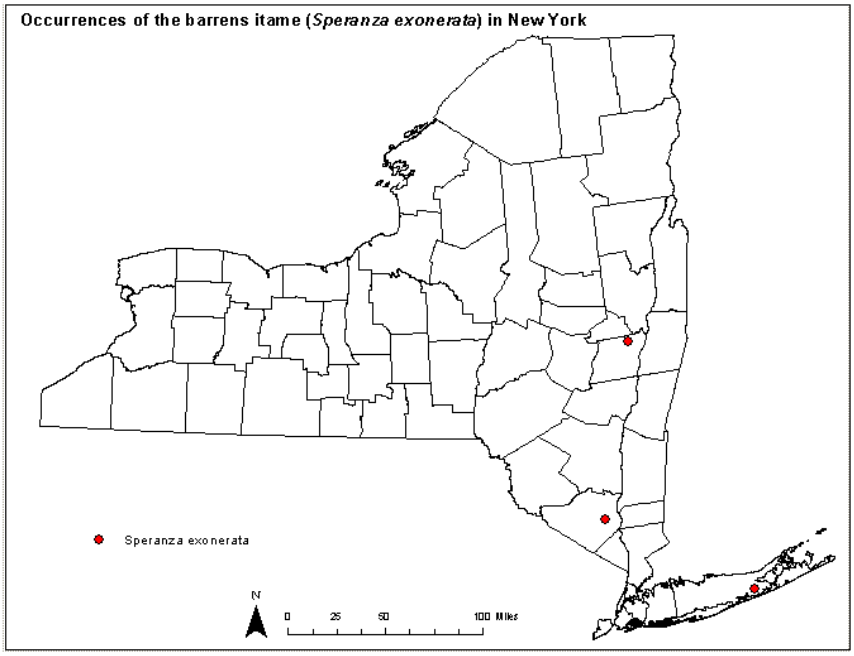

Figure 2: Known locations of barrens itame in New York (NYNHP).

Details of historic and current occurrence:

This species was historically found only in the Albany Pine Bush in Albany County. Surveys in 1978-1979 produced captures and provided evidence of an extant population (NYNHP 2013).

There are two recent occurrences of the barrens itame in New York. In 1993 a survey in Schunnemunk Mountain State Park in Orange County resulted in the capture of one individual (NYNHP 2013). Surveys in the Town of Southampton, Suffolk County, produced a large number in 1996, 1997, 1999, and twice in July of 2005 (NYNHP 2013). This moth has not been recorded in the Albany Pine Bush since the 1978-1979 surveys (NYNHP 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%	Disjunct	~150 miles

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. Pine-oak forest

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Choose an item.	Stable	

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 occurs in pitch pine-scrub oak barrens. The absence of barrens itame from seemingly suitable habitat suggests that there are other unknown habitat requirements (NHFG 2006, Nelson 2007, Schweitzer et al. 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):*

This is one of the few pine barren moth species not seen during the day, suggesting that it is completely nocturnal (Schweitzer et al. 2011). Eggs overwinter and larvae feed in the spring on scrub oak (Nelson 2007, Schweitzer et al. 2011, NatureServe 2012). Adults fly between June and July (Nelson 2007, Schweitzer et al. 2011, NatureServe 2012).

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

The main threats to this species are loss of habitat from development and fire suppression (Schweitzer et al. 2011, NatureServe 2012). Insecticides with a long residue time used for controlling gypsy moths could threaten populations (Schweitzer et al. 2011). There are broad scale studies showing 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 fragmentation;

alteration of natural fire regimes; natural succession of shrubland, woodland, and barrens habitats; land clearing; coastal erosion; and sea level rise. Introduced parasitoid flies have been known to negatively affect native Lepidoptera (Boettner et al. 2000). Other threats may include invasive species, 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.
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	(overgrazing by deer)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides (spongy moth spraying)	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 1. Threats to *Speranza exonerata.*

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:

This species has been collected state owned land, which is dedicated to the preservation of wildlife habitat.

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

Proper timing of prescribed burns and insecticide application can help prevent negative effects on barren itame populations.

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 2. Recommended conservation actions for *Speranza exonerata* (add more lines as needed).

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