Species Status Assessment

Common Name: Mottled duskywing **Date Updated:** March 12, 2025

Scientific Name: *Erynnis martialis* **Updated By:** Annie Stupik

Class: Lepidoptera

Family: Hesperiidae

Species Synopsis

The range of *Erynnis martialis* is large, historically covering the central, midwestern, and eastern portions of the United States and three provinces in Canada (NatureServe 2025, Brock and Kaufman 2003). The species has declined throughout its range and now occurs as disjunct populations, with relatively few occurrences in the northeastern part of its range (NatureServe 2025). It is locally uncommon to rare with apparently naturally low densities (Pyle 1981, Butterflies and Moths of North America). Its preferred habitat varies across its range from sandhills to woodland openings to pine barrens; it dependent on presence of larval host plants (Schweitzer et al. 2018). The larval food plants are of the Ceanothus genus (Scott 1986, Schweitzer et al. 2018, New York Natural Heritage Program 2021) – in eastern North America, larvae feed on New Jersey tea (*Ceanothus americanus*) and prairie redroot (*Ceanothus herbaceous*).

I. Status

a. Current legal protected Status

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

ii. New York: Special concern

b. Natural Heritage Program

i. Global: G3

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

Other Ranks:

-NYS 2025 SGCN Status: High Priority Species of Greatest Conservation Need

-Northeast Regional Species of Greatest Conservation Need

Status Discussion:

E. martialis is imperiled or historic in approximately half its range (eastern North America) and uncommon in the other half of its range (central and midwestern North America) (NatureServe 2025). It is considered extirpated from New England and possibly New Jersey, Quebec, and Ontario (Schweizter et al. 2018, NatureServe 2025). It appears to persist in two general locations in New York. The population in the greater Albany area, especially the Albany Pine Bush, may be one of the largest extant colonies in the species' range due to the abundance of New Jersey tea, though more information is needed to inform population estimates and trends (N. Gifford, pers. communication).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining			(blank)
Northeastern US	Yes	Declining	Declining			Yes
New York	Yes	Unknown	Unknown		Special concern	Yes
Connecticut	No	Extirpated	Extirpated	Since 1930s	Special concern	No
Massachusetts	No	Extirpated	Extirpated	Since 1880s		No
New Jersey	No	Extirpated	Extirpated	Since 1970s		No
Pennsylvania	Unknown	Declining	Declining	Possibly extirpated		Yes
Vermont	No data	N/A	N/A			No
Ontario	Yes	Declining	Declining		Endangered	(blank)
Quebec	Unknown	Extirpated	Extirpated	Possibly extirpated		(blank)

Monitoring in New York

None. Albany Pine Bush Preserve Commission aims to begin monitoring and population estimation for this species in coming years (N. Gifford, pers. communication).

Trends Discussion

Long-term trend data is somewhat unclear due to unreliable observations, as this species is often misidentified (NatureServe 2025). However, reliable occurrence records suggest a long-term decline of 70-90% and a short-term decline of 10-30% (NatureServe 2025). The decline of this species is directly linked with the decline of its larval host plant New Jersey tea (*Ceanothus americanus*).

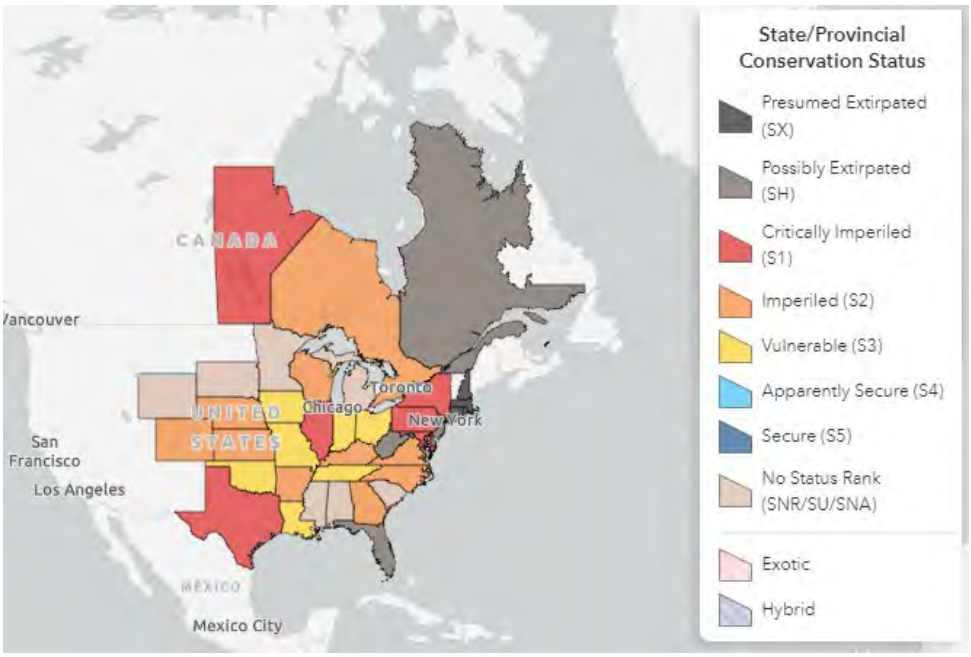

Figure 1. Conservation status of *Erynnis martialis* in North America (NatureServe 2025).

III. New York Rarity

It is important to note that validity of historic records (Table 1) is uncertain due to potential misidentification ((New York Natural Heritage Program 2021). Schweitzer et al. (2018) state that identification based on visual observation alone; examination of genitalia is needed to confirm species identification. However, the species that *Erynnis martialis* is often confused with, Horace's Duskywing (*Erynnis horatius)*, is not widespread is New York thus more recent observations of this species are likely correct (New York Natural Heritage Program 2021)

Years	# of Records	# of Distinct Waterbodies/Locations	% of State
Pre-2000	7	7	5
2000- 2023	9	7	5

Table 1. Records of *Erynnis martialis* in New York.

Details of historic and current occurrence:

There are historical records of *Erynnis martialis* from Long Island, central and western New York, and a few sites in the northern part of the state; however, the validity of these reports is uncertain (New York Natural Heritage Program 2021). The species persists in Albany Pine Bush Preserve. Individuals have also been recorded at another site in Albany County in 2015 and at least 3 distinct sites in Saratoga County from 1999 to 2024 (New York Natural Heritage Program Element Occurrences 2025, iNaturalist 2025). Experts have observed *Erynnis martialis* in the summers of 2022, 2023, and 2024 along Lake Ontario near Watertown, NY (iNaturalist 2025).

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. Glade and Savanna

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	No	Declining	

Habitat Discussion:

The preferred habitat of *Erynnis martialis* is variable by region, as it is dependent on the occurrence of its larval host plants in the Ceanothus genus. In New York, it occurs in alvar grasslands and pine barrens (Schweitzer et al. 2018, New York Natural Heritage Program 2021). The species occurs in oak woodlands and oak savannas elsewhere in the region and thus may have occurred historically in those habitat types in New York (New York Natural Heritage Program 2021).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	(blank)	(blank)	Yes	Yes	(blank)

Species Demographics and Life History Discussion

Erynnis martialis typically emerges as adults in mid to late spring and produces two broods per year (Schweitzer et al. 2018, New York Natural Heritage Program 2018). Larvae spin a cocoon in the leaf litter to overwinter (Schweitzer et al. 2018). Females lay eggs on the larval host plant; adults feed on nectar from a variety of flowers, including those of the larval host plants.

VI. Threats:

The decline of *Erynnis martialis* is strongly associated with declines of its host plants. New Jersey tea was once abundant in the 1800s and into the 1900s and has since largely disappeared from the landscape, mostly due to increased deer populations (Schweitzer et al. 2018, New York Natural Heritage Program 2021). Its other host plant in New York, prairie redroot (*Ceanothus herbaceous*), is state-endangered. Both species of Ceanothus are early to mid-successional, and their population declines along with *Erynnis martialis* are due to deer consumption and vegetative succession from reforestation and fire suppression (Schweitzer et al. 2018). Pesticide application to treat spongy moth infestation also directly affects *Erynnis martialis* (NatureServe 2025, Schweitzer et al. 2018).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
9. Pollution	-	-	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	Large	Moderate	Long-term	Choose an item.	Choose an item.
7. Natural System Modifications	7.1 Fire & Fire Suppression	7.1.2 Suppression in the fire regime	Restricted	Serious	Long-term	Choose an item.	Choose an item.
7. Natural System Modifications	7.3 Other Ecosystem Modifications	7.3.2 Vegetation succession	Pervasive	Serious	Long-term	Choose an item.	Choose an item.

Table 2. Threats to *Erynnis martialis.*

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:

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

Management needs include control of the deer population where suitable habitat is present, establishment of early successional habitat in areas appropriate for Ceanothus species, and increased survey & research for *Erynnis martialis.*

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Site/Area Management
A.2 Direct Species 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 & Communcations
A.1 Direct Habitat Management	C.6.5.0.0 Conservation planning	Site/Area Protection
B.4 Law Enforcement and Prosecution	C.7.1.3.0 Create, amend, or influence regulation	
B.4 Law Enforcement and Prosecution	C.7.2.1.0 Create or amend policies	

Table 3. Recommended conservation actions for *Erynnis martialis.*

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for other butterflies, and for mottled duskywing in particular.

Fact sheet:

____ Develop fact sheets and other outreach material to educate the public about species at risk Lepidoptera.

Habitat management:

____ Determine best management regimes for species in each locality.

Habitat research:

____ Determine precise habitat needs of all life stages.
____ Ascertain food plants.
____ Determine the relationship between food availability and species numbers.

Invasive species control:

____ Identify species which impact negatively on butterfly populations.
____ Determine the best control method for those exotic species with minimal repercussions for butterfly populations.

Life history research:

____ Investigate the metapopulation dynamics of those species which appear to have distinct populations.
____ Establish the duration of all life stages.
____ Taxonomic research for related species.

Other action:

____ Determine the actual sensitivity of species to chemical formulations, particularly diflubenzuron and other commonly used agricultural pesticides.
____ Determine the effect of Bacillus thuringiensis kurstaki (BTK) used in Gypsy moth sprayings on various species.

Population monitoring:

____ Inventory of species within historical range.

Statewide baseline survey:

____ Survey all species to more adequately define the list of species that need to be addressed.

VII. References

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