

Species Status Assessment

Common Name: Persius duskywing

Date Updated: May 8, 2025

Scientific Name: *Erynnis persius persius*

Updated By: Kathy O'Brien

Class: Insecta

Family: HesperIIDae

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

According to Neslon (2007) Persius duskywing (*Erynnis persius*) is a species that has a coast-to-coast range in North America, with its major population in the western states. The eastern populations is considered a disjunct subspecies, *E. p. persius* (Nelson 2007). This nominate subspecies had occupied a spotty and disjunct range in eastern North America, from New York and southern New England west through Ontario, Canada to Wisconsin, and south to New Jersey, possibly extending further south in the Appalachian Mountains. During the past 60 years the Persius duskywing has declined dramatically throughout its range (NatureServe 2024). Currently the species is considered extirpated in Ontario and Quebec and Endangered in New York and New England. The subspecies *E. p. persius* is locally frequent, at best, and rare in most of its range. The pine barrens and oak savannahs that these butterflies rely on have been destroyed and fragmented by urban and agricultural development and the butterflies have suffered from pesticide spraying, especially for spongy (gypsy) moth control (Nelson 2007).

I. Status

a. Current legal protected Status

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

ii. **New York:** Endangered

b. Natural Heritage Program

i. **Global:** G5T1T3

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

Other Ranks:

-New York State: High Priority SGCN

-IUCN Red List: None

-Northeast Regional SGCN: RSGCN, Very High Conservation Concern

-COSEWIC: Endangered

Status Discussion:

The Persius duskywing is in severe decline across its range and apparently extirpated in Ontario. It is listed as endangered in Connecticut, Massachusetts, Minnesota, New Hampshire, New York, and Ohio, and as threatened in Michigan, which is probably its global stronghold. West of Pennsylvania, Persius duskywing is found mostly with, but is rarer than, the Karner blue (*Plebejus melissa samuelis*), a federally endangered butterfly species (Shepherd 2005).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	(blank)			(blank)
Northeastern US	Yes	Unknown	(blank)			Yes
New York	Unknown	Unknown	Unknown		E	Yes
Connecticut	Yes	Unknown	Unknown		E	(blank)
Massachusetts	Yes	Unknown	Declining		E	Yes
New Jersey	No	Unknown	Unknown			No
Pennsylvania	Yes	Unknown	Unknown			No
Vermont	Unknown	Unknown	Unknown			No
Ontario	No	N/A	N/A		Extirpated	No
Quebec	No	N/A	N/A		Extirpated	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):*

Surveys have not been done on a regular basis. Because of the difficulty distinguishing this species from *E. juvenalis*, surveys consist of collecting specimens for identification by dissection of male genitalia. In 2020 and 2022 specimens of dark skippers were collected at the location where the last *E. persius* specimen had been taken but none of these proved to be *E. p. persius* (K. O'Brien 2022). This site and adjacent acreage have been restored to lupine habitat so this species may still be present but is proving difficult to find. More surveys are needed to better evaluate the present status of the species in New York.

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

During the past 60 years the Persius duskywing has declined dramatically throughout its range (NatureServe 2024). In New York the species has not been found since 2007. However, management for Karner blue butterfly, which has increased lupine in the same areas where the species was found in the past, may have helped to sustain this species. The difficulty distinguishing *E. p. persius* from *E. juvenalis* makes it hard to be sure of the species true status, and additional targeted surveys are needed.

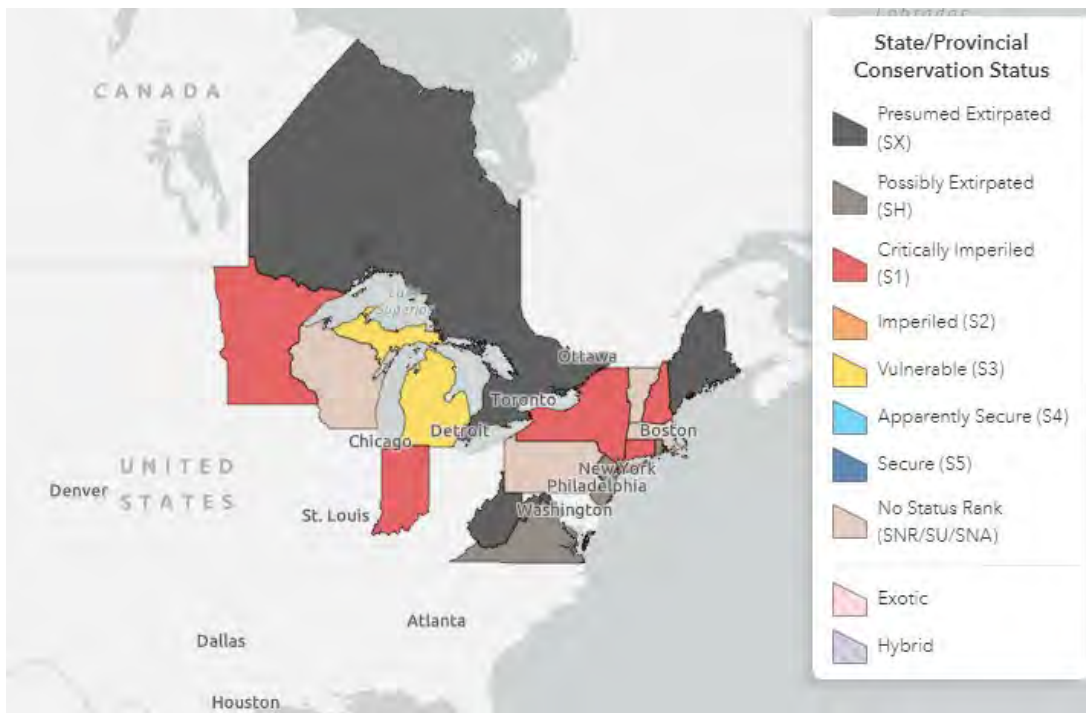


Figure 1. Conservation status of *Erynnis persius persius* in North America (NatureServe 2024).

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

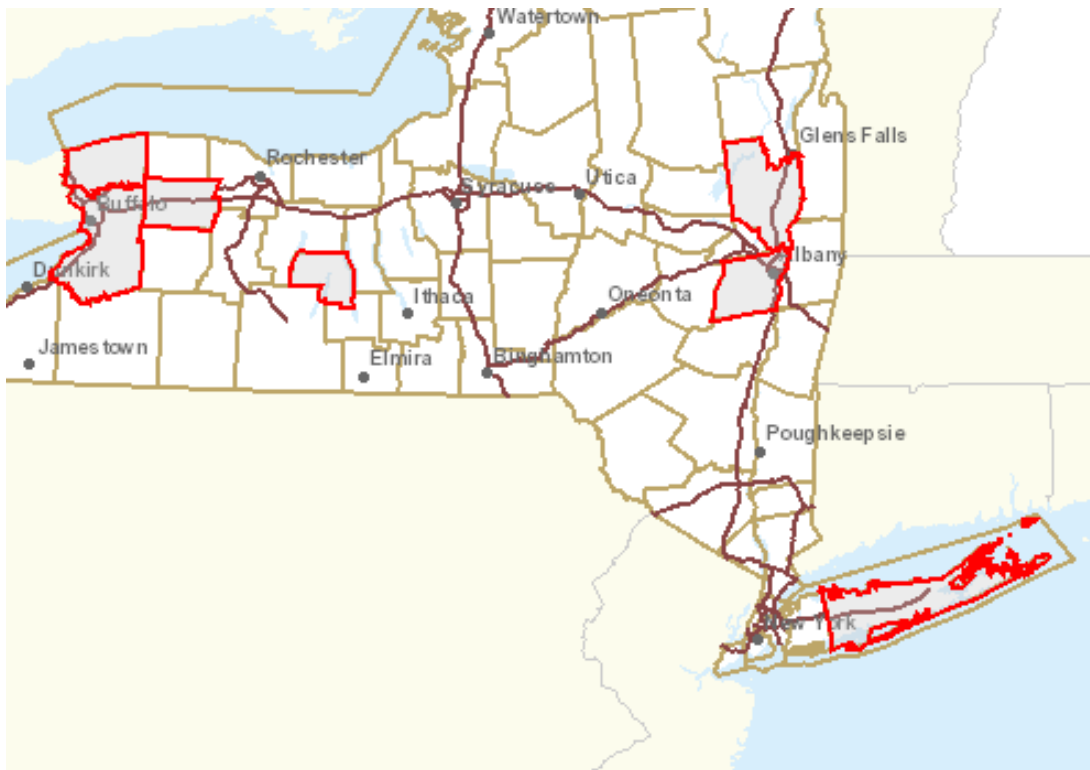


Figure 2. Historic *Persius duskywing* distribution in New York

Years	# of Records	# of Distinct Waterbodies/Locations	% of State
Pre-2000	_____	7 Counties	_____
2000- 2023	_____	1 County	_____

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

Details of historic and current occurrence:

Historic records:

1918: Yates County

1963: Albany County

1966: Suffolk County

1970: Erie County, Genesee County, Niagara County

Although this species once had a larger range in New York, Persius duskywing is known recently from two specimens: one in 1991 from Warren County (McCabe 2014), and one in 2001 from Saratoga County. Because of difficulty distinguishing this species from *Erynnis juvenalis*, surveys consisted of collecting specimens for identification by dissection of male genitalia

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%	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):

a. Pine barrens

b. Bog/fen, scrub-shrub wetland

c. Woodland openings (hardwood, conifer, mixed savanna)

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/Community Trend	Time frame of Decline/Increase
Yes	Yes	Yes	Declining	

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:

Habitats for *E. p. persius* include pine barrens, oak savanna, and other open, sunny locations (such as powerline rights of way) where its larval host plants grow. They are also found in marshes. The duskywings will use a wide range of legumes as host plants, principally wild (sundial) lupine (*Lupinus perennis*) and wild indigo (horseflyweed) (*Baptisia tinctoria*) (Shepherd 2005).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/Catadromous?
Yes	Yes	No	Yes	Yes	(blank)

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):

There is one flight season from April to June. In hilly areas, males will perch on hilltops, usually sitting on twigs or on the ground, to find females. The eggs are laid singly on the underside of host plant leaves. Caterpillars may hatch as late as July and live in shelters made by rolling or tying leaves together. They hibernate as fully grown caterpillars in leaf shelters (Shepherd 2005).

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

Much of the original savanna or barrens habitat used by *E. p. persius* has been destroyed by development or degraded by natural succession. Fragmentation of the landscape from larger suitable habitats to smaller, sometimes isolated, habitats is also implicated in its decline (Shepherd 2005). The lack of a natural fire regime to maintain the early successional habitat with lupine has also reduced the suitability of habitat.

The use of pesticides for spongy moth suppression is implicated in the decline of Persius duskywing in New England. Records indicate that the butterfly was significantly less rare from the 1800s to the 1940s than between the 1950s-1970s, when DDT was commonly sprayed to control the moth. Since the 1970s, use of *Bacillus thuringiensis kurstaki* (Btk) to control spongy moths has reduced negative impacts to Persius duskywing, but still threatens the overall population, especially when they occupy forest-edge habitats (Shepherd 2005).

Given the reliance of Persius duskywing on wild lupine for larval survival, it is also worth noting the status of this plant. *Lupinus perennis* is on the endangered and threatened species lists in several states where which Persius duskywing is recorded: Iowa, Maine, New Hampshire, Pennsylvania, and Vermont. New Hampshire includes both the lupine and the butterfly on their state lists (Shepherd 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	1.1.2 Low-density housing areas	Pervasive	Serious	Near-term	Intensifying	Unknown
7. Natural System Modifications	7.1 Fire & Fire Suppression	7.1.2 Suppression in the fire regime	Large	Moderate	Near-term	Stable and ongoing	Low
7. Natural System Modifications	7.3 Other Ecosystem Modifications	7.3.2 Vegetation succession	Large	Moderate	Near-term	Stable and ongoing	Low
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.3 Changes in Temperature Regimes	11.3.3 Gradual temperature change	Unknown	Unknown	Near-term	Unknown	Moderate
11. Climate Change	11.4 Changes in Precipitation & Hydrological Regimes	11.4.3 Gradual change in precipitation regime	Unknown	Unknown	Near-term	Unknown	Moderate

Table 2. Threats to *Erynnis persius persius*.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: X

No:

Unknown:

If yes, describe mechanism and whether adequate to protect species/habitat:

The Persius duskywing is listed as an endangered species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species.

While legislation protects the species, provisions for the protection and management of habitat are incomplete. The documented presence of Karner blue (*Plebejus melissa samuelis*) and frosted elfin (*Callophrys iris*), which are also legally protected lupine feeders, help to extend protections to potentially unknown populations of *Erynnis persius persius*. However, unless the listed species are documented, lupine plants are not protected and may be damaged or removed. Landscapes that are protected and whose management benefits lupine feeders are most likely to be where Persius duskywing may persist long term.

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

Populations of *E. p. persius* are often small and local and generally need conservation attention. Populations should be monitored and conserved. As with many butterflies, protection and management of their habitat to ensure the presence of host plant populations is the primary need. The successional nature of preferred habitat means that appropriate vegetation management is important. Habitat should be managed by mechanical disturbance or infrequent burns to maintain populations of the host plants; poorly managed burns can damage duskywing populations (Shepherd 2005).

The last known location of *E. p. persius* in New York is currently owned and managed by NYSDEC. Nearby lands have also been restored to lupine habitat as part of the Karner blue butterfly program, providing opportunities for Persius duskywing to expand into if the species still exists in the area. Increased efforts to find the Persius duskywing should continue with targeted searches for males during the spring flight season. Expansion of lupine habitat in Warren, Saratoga and Albany Counties offer a greater possibility of finding populations of Persius duskywing that may persist on the landscape but have been overlooked.

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.1.1	Expand restoration and management of early successional habitat and maintain populations of lupine
A.1 Direct Habitat Management	A.1.2.2.1	Introduce appropriate fire management to improve habitat

Action Category	Action	Description
B.3 Outreach	B.3.1	Continue to educate landowners and the public regarding benefits of prescribed fire for wildlife management
C.8 Research and Monitoring	C.8.1.1	Conduct surveys for male <i>Persius duskywings</i> during the flight season to confirm presence

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

VII. References

- McCabe, T.L. 2014. New York State Wildlife Grant T-17. Baseline Survey of Lepidoptera Species of Greatest Conservation Need. Final Report. November 2014.
- NatureServe. 2024. NatureServe Explorer. Page last published 11/1/24.
https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.120042/Erynnis_persius_persius.
 Accessed December 5, 2024.
- Nelson, M.W. 2007. Massachusetts rare species fact sheets. Massachusetts Division of Fisheries & Wildlife, Westborough, MA.
http://www.mass.gov/dfwele/dfw/nhesp/species_info/fact_sheets.htm. Accessed 7 December 2012.
- New York State Department of Environmental Conservation. 2025ew York Nature Explorer.
<http://www.dec.ny.gov/natureexplorer/app/>. Accessed 3 March 2025.
- O'Brien, Kathleen. Memo to the file 2022. New York State Department of Environmental Conservation. 2022.
- Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.
- Shepherd, M. D. 2005. Species Profile: *Erynnis persius persius*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). Red List of Pollinator Insects of North America. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation.

Originally prepared by	Jenny Murtaugh
Date first prepared	December 7, 2012
First revision	February 11, 2014 (Samantha Hoff)
Last revision	