

## Species Status Assessment

**Class:** Lepidoptera  
**Family:** HesperIIDae  
**Scientific Name:** *Erynnis martialis*  
**Common Name:** Mottled duskywing

### Species synopsis:

This mottled duskywing is thought to be extirpated from most of its range east of the Mississippi River, with a few colonies remaining in New York, Canada, and probably in the southern Appalachians and Great Lakes region. The main foodplant of the larva was once so common that it was commercially important as New Jersey tea, especially around the time of the American Revolution. Now the plant is so reduced that this skipper and two moths whose larvae feed on the leaves are probably gone from that state and much of the east (New York Natural Heritage Program 2012).

The historic range is approximately that depicted by Brock and Kaufman (2003). It extended from Massachusetts, Connecticut, and New Hampshire, west across New York and southern Ontario and the Great Lakes states to Minnesota and western Iowa, then south to the Gulf states, and central Texas (Opler and Krizek 1984), west to eastern Nebraska, eastern Kansas, the Ozarks, with disjunct isolated populations in the eastern foothills of the Rocky Mountains in central Colorado, and in the Black Hills (Stanford 1981, Stanford and Opler 1993, Opler 1994, Opler and Krizek 1984). The current range is drastically less than what was once present. The species is now apparently extirpated from New England, New Jersey, at least the eastern half (and possibly all) of Pennsylvania and most of Maryland, and it is very rare in West Virginia and Ohio. However, since 2001 it is still extant in at least three counties in New York. It seems unjustified to consider anything east of Ohio, including Canada, in any range extent estimation since such populations are mostly small, isolated, remnant colonies on a few hundred hectares or less of habitat and, in most cases, destined for extirpation (New York Natural Heritage Program 2012).

The Albany Pine Bush is probably the only place in the Northeast where all three still occur (New York Natural Heritage Program 2012).

This skipper still occurs in the Albany Pine Bush and two additional preserves. However, it is unlikely that any sites are actually protected from deer. The foodplants are now known to be exclusively *Ceanothus* spp., which are favored by deer and deer have apparently caused the extirpation of colonies of this skipper in other states. This skipper has declined dramatically in Ohio and Canada and probably no longer occurs in any other states near New York, from New Hampshire through at least eastern Pennsylvania (New York Natural Heritage Program 2012).

**I. Status**

**a. Current and Legal Protected Status**

- i. **Federal**      Not listed      **Candidate?**    No
- ii. **New York**    Special Concern; SGCN

**b. Natural Heritage Program Rank**

- i. **Global**      G3
- ii. **New York**    S1      **Tracked by NYNHP?**    Yes

**Other Rank:**

None

**Status Discussion:**

The current status and population size at many sites needs to be assessed. This species is apparently declining in the Albany Pine Bush, probably due to deer browsing. The extent of decline is a bit uncertain because the validity of some of the older records is uncertain. If, as seems likely, those in Shapiro (1974) are correct, the decline has been about 95% in the last 50 to 100 years which would be less than in most eastern states. Most New York records are historical.

**II. Abundance and Distribution Trends**

**a. North America**

**i. Abundance**

X  declining    \_\_\_ increasing      \_\_\_ stable    \_\_\_ unknown

**ii. Distribution:**

X  declining    \_\_\_ increasing      \_\_\_ stable    \_\_\_ unknown

**Time frame considered:** \_\_\_\_\_

**Severe decline**

**b. Regional**

**i. Abundance**

X  declining \_\_\_ increasing \_\_\_ stable \_\_\_ unknown

**ii. Distribution:**

X  declining \_\_\_ increasing \_\_\_ stable \_\_\_ unknown

Regional Unit Considered:  Northeast

Time Frame Considered:  Last 50-100 years

Severe decline

**c. Adjacent States and Provinces**

**CONNECTICUT** Not Present \_\_\_ No data  X

**i. Abundance**

\_\_\_ declining \_\_\_ increasing \_\_\_ stable  X  unknown

**ii. Distribution:**

\_\_\_ declining \_\_\_ increasing \_\_\_ stable  X  unknown

Time frame considered: \_\_\_\_\_

Listing Status:  Not listed- Extirpated  SGCN?  No

**MASSACHUSETTS** Not Present \_\_\_ No data  X

**i. Abundance**

\_\_\_ declining \_\_\_ increasing \_\_\_ stable  X  unknown

**ii. Distribution:**

\_\_\_ declining \_\_\_ increasing \_\_\_ stable  X  unknown

Time frame considered: \_\_\_\_\_

Listing Status:  Not listed- Extirpated  SGCN?  No

**NEW JERSEY**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

      \_\_\_ declining    \_\_\_ increasing            \_\_\_ stable          X   unknown

**ii. Distribution:**

      \_\_\_ declining    \_\_\_ increasing            \_\_\_ stable          X   unknown

Time frame considered: \_\_\_\_\_  
Listing Status: \_\_\_\_\_ Not listed- Extirpated \_\_\_\_\_ SGCN?   No  

**ONTARIO**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

  X   declining    \_\_\_ increasing            \_\_\_ stable        \_\_\_ unknown

**ii. Distribution:**

  X   declining    \_\_\_ increasing            \_\_\_ stable        \_\_\_ unknown

Time frame considered: \_\_\_\_\_  
Listing Status: \_\_\_\_\_ Not listed \_\_\_\_\_

Severe decline

**PENNSYLVANIA**                      **Not Present** \_\_\_\_\_                      **No data**   X  

**i. Abundance**

      \_\_\_ declining    \_\_\_ increasing            \_\_\_ stable          X   unknown

**ii. Distribution:**

      \_\_\_ declining    \_\_\_ increasing            \_\_\_ stable          X   unknown

Time frame considered: \_\_\_\_\_  
Listing Status: \_\_\_\_\_ Not listed- Extirpated \_\_\_\_\_ SGCN?   No

QUEBEC Not Present  X  No data \_\_\_\_\_  
 VERMONT Not Present  X  No data \_\_\_\_\_

d. NEW YORK No data \_\_\_\_\_

i. Abundance

\_\_\_ declining \_\_\_ increasing  X  stable \_\_\_ unknown

ii. Distribution:

\_\_\_ declining \_\_\_ increasing  X  stable \_\_\_ unknown

Time frame considered: \_\_\_\_\_

Monitoring in New York.

None

Trends Discussion:

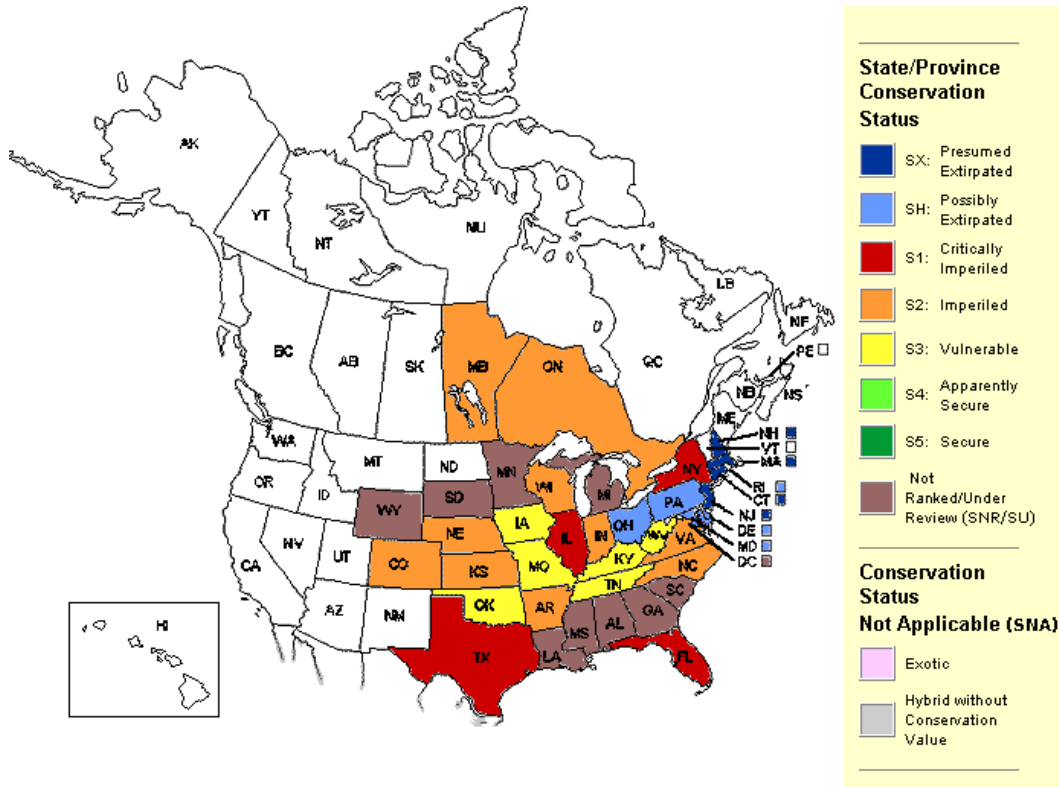


Figure 1. Conservation status of mottled duskywing in North America (NatureServe 2012).

**III. New York Rarity, if known:**

<b>Historic</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
prior to 1970	_____	<u>1 county</u>	<u>5%</u>
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

**Details of historic occurrence:**

Suffolk County -1966

<b>Current</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
	_____	<u>2 counties</u>	<u>&lt;5%</u>

**Details of current occurrence:**

Saratoga County -1999; Albany County -2000

**New York's Contribution to Species North American Range:**

**Distribution** (percent of NY where species occurs)

- 0-5%
- 6-10%
- 11-25%
- 26-50%
- >50%

**Abundance** (within NY distribution)

- abundant
- common
- fairly common
- uncommon
- rare

**NY's Contribution to North American range**

- 0-5%
- 6-10%
- 11-25%
- 26-50%
- >50%



**V. New York Species Demographics and Life History**

- Breeder in New York**
- Summer Resident**
- Winter Resident**
- Anadromous**
- Non-breeder in New York**
- Summer Resident**
- Winter Resident**
- Catadromous**
- Migratory only**
- Unknown**

**Species Demographics and Life History Discussion:**

To wait for females, males perch and patrol on ridges and hills during the day, sitting on the ground or on tips of twigs. Females deposit eggs singly on the host plant. Fully-grown caterpillars hibernate. There are two broods from April-September. Adults nectar from flowers of bush houstonia, gromwell, hoary vervain, and other plants. Caterpillar hosts include wild lilacs such as New Jersey tea (*Ceanothus americanus*), and redroot (*Ceanothus herbaceus* var. *pubescens*) in the buckthorn family (Rhamnaceae) (Butterflies and Moths of North America 2012).

**VI. Threats:**

This butterfly's foodplant, New Jersey tea (*Ceanothus americanus*), is a favored food by deer. Deer are known to have eliminated populations of this species in other states (e.g., Pennsylvania) and they could be a major factor in the collapse of this skipper in the East, although there have been others such as successional changes. Impacts from deer would be by far the most likely explanation for any decline in the Albany area (New York Natural Heritage Program 2012). Fire is also very important to maintain NJ tea plants, therefore too much or too little fire is a threat (SGCN Expert meeting, November 2013).

Excessive browsing by deer and loss of brushy and barrens habitats are among the factors in this decline. The recent well-known populations on the southeastern Pennsylvania serpentine barrens apparently disappeared in the early or mid 1990s following a few years of heavy browsing of the foodplant by deer. The deer herd was reduced, the plants recovered, but with no known



populations remaining closer than the Albany, New York Pine Bush, the mottled duskywing is not expected to return there (New York Natural Heritage Program 2012).

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

**No**     **Unknown**  
 **Yes**

**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 controlling deer browsing on the foodplant, which will usually require reducing deer numbers. Preserves that do not allow hunting and do not manage deer numbers effectively should not be considered protected occurrences for this skipper. Research needs include determining the population (metapopulation) dynamics. Systematic gathering of data on this species is necessary (New York Natural Heritage Program 2012).

Conservation actions following IUCN taxonomy are categorized in the table.

<b>Conservation Actions</b>	
<b>Action Category</b>	<b>Action</b>
Law and Policy	Policies and Regulations
Education and Awareness	Training
Education and Awareness	Awareness & Communications
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Protection	Site/Area Protection

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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