Erynnis martialis (Mottled Duskywing)

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Taxonomy

- **Class**: INSECTA
- **Order**: LEPIDOPTERA
- **Family**: HESPERIIDAE
- **Genus**: Erynnis
- **Scientific Name**: *Erynnis martialis* (Scudder, 1870)
- **Common Name**: Mottled Duskywing
- **Synonyms**: Nisoniades martialis Scudder, 1870 Scudder, 1870
- **Taxonomic Name Source**:Pelham, J. P. 2008. A catalogue of the butterflies of the United States and Canada with a complete bibliography of the descriptive and systematic literature. The Journal of Research on the Lepidoptera. Volume 40. 658 pp. Revised 14 February, 2012.

Agency Status

- **NMDGF**:
- **Federal Status**:
- **BLM Sensitive**:
- **USFS**:
- **IUCN Red List**: Not Evaluated
- **Nature Serve Global**: G3
- **NHNM State**: S1
- **NM Endemic**:NO

Description

Mottled Duskywings have a mottled, contrasty dorsal forewing, rather like that of Rocky Mountain Duskywing or Afranius Duskywing. It stands out from these look-alikes with ventral hindwing submarginal spots that are much more elaborate and showy (for a duskywing).

Description courtesy of Steven J. Cary, Butterflies of New Mexico, 2024

Habitat and Ecology

This species is found where the larval host plant is common, in open woodlands, oak savannas, pine barrens, prairie hills, open brushy fields and chaparral (Lotts and Naberhaus 2023). These habitat types are rare or have declined in

many places. Several butterfly species, including the Karner Blue, Frosted Elfin, and Eastern Persius Duskywing, that co-occur with the Mottled Duskywing are also rare and declining. Larval host plants of the Mottled Duskywing include two species of *Ceanothus*, Prairie Redroot (*C. herbaceus*) and New Jersey Tea (*C. americanus*) (Family: Rhamnaceae). The Colorado and New Mexico populations feed on Fendler's Buckbrush(*C. fendleri*) Larvae live in folded leaf nests on the host plant. When mature, they spin a cocoon and pupate in the leaf litter for a few weeks or overwinter until spring (Schweitzer *et al*. 2018). Adults stay in close proximity to the larval host plants and they use them to nectar, perch, patrol from and bask on (Demarse 2022). They also sip water from moist soil (Schweitzer *et al*. 2018). In Colorado males are also known to hill top (A. Warren pers. comm. 2024). There are two broods across most of the range, from April to September (Lotts and Naberhaus 2023, COSEWIC 2012), though only one flight, from mid-May to June, is reported in Colorado.

Geographic Range:

This species occurs in eastern North America, where historically it ranged from Massachusetts and southern Ontario west across the Great Lakes region to Minnesota, and from South Carolina to central Texas. There are also several occurrences in eastern Colorado, northern New Mexico, eastern Wyoming and western South Dakota (Lotts and Naberhaus 2023). The species is now rare or known to be extirpated from approximately 40% of its historical distribution. It no longer occurs, or is greatly reduced, in New England, New Jersey, Delaware, Pennsylvania, Ohio, West Virginia, Virginia, and Ontario (Schweitzer and Young 2020).

Conservation Considerations:

There are few conservation measures in place to protect the Mottled Duskywing. Though it is not protected by federal legislation in Canada, it is protected under two provincial statutes in Ontario: the Fish and Wildlife Conservation Act and the Provincial Parks and Conservation Reserves Act. In Manitoba, the species is not listed under the provincial Endangered Species Act, though its' habitat is protected within Manitoba provincial forests and parks. However timber production in these areas may not be compatible with Mottled Duskywing habitat management practices (COSEWIC 2018). It is also not federally protected under the Endangered Species Act in the United States, though there may be some management efforts in place at local scales. It also shares some habitats with the endangered Karner Blue Butterfly (*Plebejus samuelis*), which may incidentally offer it some protection, as the management needs are likely similar (Schweitzer *et al*. 2018). The host plant of this species is reliant on wildfire germination. Therefore regular fire may be helpful for this species.

Research is needed to better understand the threats and causes of recent decline in this species. A better understanding of the habitat needs is also needed, so that sites where the species remains extant can be properly managed.

Threats:

It is unclear what may be driving the recently observed declines across the range of the species, though metapopulation structure may play a role; habitat fragmentation and limited dispersal may prevent recolonization of extirpated sites (COSEWIC 2018). Past and current threats to this species include fire suppression, forest succession, urbanization, and agricultural expansion (COSEWIC 2018, Schweitzer and Young 2020). The larval host plants, *Ceanothus* species, have also declined substantially over the last half century in the northeastern portion of the distribution, mostly due to herbivory by White-tailed Deer. It was once very abundant across much of the Northeast and was commercially harvested as New Jersey Tea. Deer favor this host plant and while feeding they may also trample eggs and larvae, as well as change the vegetation structure by consuming shrubs, tree seedlings, and native herbs. This is one of the main reasons the species has disappeared from several sites, including several sites in Ontario and

one in Pennsylvania (Schweitzer *et al*. 2018). Historical declines have also been attributed to pesticide use during the late 1950s and 1960s. Gypsy moth (*Lymantria dispar*) outbreaks in the range of the species were sprayed extensively with DDT. Even today, use of *Bacillus thuringiensis kurstaki* (commonly known as "*Btk*"• t;to control Gypsy moth outbreaks may adversely impact this species, if spraying overlap with the flight period of the adults or larval feeding period, from mid to late May (Schweitzer *et al*. 2018). In the Midwest, habitats including oak savannas and tall grass prairies, have largely been converted to agricultural lands. Where they remain, succession due to lack of fire, urbanization and invasive plants are the main threats (Schweitzer *et al*. 2018).

Population:

The population size is unknown for this species. While it has likely never been common or abundant, the species has disappeared from much of its former range and has declined substantially where it remains extant. Declines appear to have started in the northeast, with the last known collections in Massachusetts, Connecticut, New Jersey and southeastern Pennsylvania in the 1880s, 1930s, 1970s, and 1985 respectively (Schweitzer *et al*. 2018).

References:

- ITIS. 2021. Integrated Taxonomic Information System (ITIS). https://www.itis.gov/
- Schweitzer, D.F., Minno, M.C. and Wagner, D.L.. 2018. Rare, declining, and poorly known butterflies and moths (Lepidoptera) of forests and woodlands in the Eastern United States. US Forest Service.
- Lotts, K. and Naberhaus, T.. 2023. Butterflies and Moths of North America. 2023: (Dataset for *Amblyscirtes elissa*).
- Demarse, A.. 2022. Phenology, movement, and population size of an endangered butterfly, the Mottled Duskywong (*Erynnis martialis*). University of Guelph, Guelph : (50).
- Schweitzer and Young. 2020. *Erynnis martialis*: NatureServe Explorer: An online encyclopedia of life [web application] Version 7.1.. 2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.111322/Erynnis_martialis

More Information