

*Conservation Assessment
for
Mottled Duskywing (Erynnis martialis)*



Erynnis martialis



Erynnis martialis underside

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This document is undergoing peer review, comments welcome

This Conservation Assessment was prepared to compile the published and unpublished information and serves as a Conservation Assessment for the Eastern Region of the Forest Service. It does not represent a management decision by the U.S. Forest Service. Though the best scientific information available was used and subject experts were consulted in preparation of this document, it is expected that new information will arise. In the spirit of continuous learning and adaptive management, if you have information that will assist in conserving the subject community, please contact the Eastern Region of the Forest Service - Threatened and Endangered Species Program at 310 Wisconsin Avenue, Suite 580 Milwaukee, Wisconsin 53203.

Table Of Contents

EXECUTIVE SUMMARY4
ACKNOWLEDGEMENTS4
NOMENCLATURE AND TAXONOMY5
DESCRIPTION OF SPECIES.....5
HABITAT5
LIFE HISTORY6
DISTRIBUTION AND ABUNDANCE.....6
PROTECTION STATUS7
REFERENCES.....7

EXECUTIVE SUMMARY

Barrens and glades occur at scattered sites on the Hoosier and Shawnee National Forests, and are found widely on the Mark Twain National Forest. Expressions of the barrens community on National Forest System lands are currently recognized on the Hoosier at a few sites within the Brown County Hills and the Crawford Escarpment, and at several sites in the Crawford Uplands. On the Shawnee, barrens are found as small remnants in the Cretaceous Hills, and the Greater Shawnee Hills, Lesser Shawnee Hills, and the Illinois Ozarks have more and somewhat larger communities. Barrens and glades are often large within most of the natural divisions found on the Mark Twain.

Barrens are characterized by species of canopy trees tolerant of xeric conditions having a stunted, open-grown appearance, the dominance of native warm-season grasses and prairie forbs, and, in glades, significant exposures of bedrock. The mix of plants and animals inhabiting these sites varies with the canopy openness, internal structure of the stands, slope, aspect, and other less tangible variables. The barrens is an ecosystem, not merely a hole in the forest filled with prairie plants.

The purpose of this assessment is to bring together the best available information about this community, provide a summary of the character and distribution of barrens across the three Forests, and provide similar information about six RFSS found in this habitat. An additional purpose is to provide the background information necessary to prepare a Conservation Strategy, including management actions to conserve species discussed in this assessment.

[\(Barrens and glades conservation assessment\)](#)

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NOMENCLATURE AND TAXONOMY

Erynnis martialis (Scudder)

Hodges, *et al.* (1983), contains information regarding synonymy and taxonomic status.

Another common name for this skipper butterfly is the “purplish duskywing”.

Erynnis martialis is a member of the family Hesperidae, the skippers. This family contains over 3,000 species world-wide. Within that, it is in the subfamily Pyrginae, the spread-winged skippers, so called for their habit of holding their wings open flat at rest.

DESCRIPTION OF SPECIES

The adult form of *Erynnis martialis* is a medium-sized (wingspan 2.5 to 4cm) brown butterfly (or skipper) with a distinct (usually) “checkerboard” pattern of darker markings on the upper wing surface. Individuals that have recently emerged from their pupae (or chrysalis) have a distinctive purplish iridescence to their upper wing surface that often appears to glow in the sunlight. Males of all *Erynnis* skippers in the region have a fold in the leading edge of the forewing that contains yellow “scent scales” that harbor pheromones for attracting females. Females have scent scales on the sides of their abdomens, which are used to attract males. Adults of this species are figured in several recent (and readily obtainable) publications on North American butterflies (Opler and Malick 1992, Scott 1986). Hodges, *et al.* (1983), contains information regarding synonymy and taxonomic status.

The larvae of *Erynnis martialis* feed exclusively on *Ceanothus* leaves, thus the close association with these shrubs. Although it typically is associated with *C. americanus*, *C. herbaceus* is also reported as a host for *E. martialis* north of the study area. Larvae are roughly 2.5cm in length at maturity, with a dark head capsule and a narrow constriction (or neck) between the head capsule and the rest of the body.

HABITAT

Adults of *Erynnis martialis* seem to prefer partially shaded sites with abundant nectar sources and an ample supply of *Ceanothus*. This shrub occurs in a wide variety of habitats; from loess hill prairies to sand dunes and savannas, limestone glades and sandstone barrens. It is often patchily distributed, especially in glade and barrens complexes, with patches tending to occur on southerly and southwesterly, open slopes (Bess, pers. obs.). However, even in areas of apparently abundant larval food plant, this butterfly can be rare or absent for long periods of time. In glades and barrens that received fire within the past growing season, this species is usually absent or rare in the burned portions, unless unburned populations occur nearby (Bess, pers. obs.).

LIFE HISTORY

Erynnis martialis are found in open to fairly closed-canopy, grassland situations with an abundance of *Ceanothus americanus*, grasses and other flowering plants. The adults avidly gather nectar from flowers and are often observed or captured while undertaking this activity. *Rudbeckia hirta*, *Euphorbia corollata*, *Monarda* spp., *Pycnanthemum* spp., *Scutellaria* spp., *Ceanothus americanus*, and *Helianthus* spp. are some of the preferred nectar species. There are typically three adult broods in the Ohio River region, with May, early July and late August through September good times to expect them. In southern Indiana, Kentucky and Michigan, adults are closely associated with *Ceanothus americanus* and rarely stray more than a few yards from areas where the shrub grows (Bess, pers. obs.).

Larvae form a shelter by sewing *Ceanothus* leaves together with silk and living inside. Feeding occurs at night, with the larvae making short forays out of the shelter to feed on leaves or to cut sections for later consumption in the shelter. Nearly mature larvae overwinter in cocoon-like shelters in dead leaves at the base of their food plants. These overwintering nests are rarely more than a centimeter or two beneath the surface of the duff and often are exposed to capture early spring warmth from the sun.

DISTRIBUTION AND ABUNDANCE

“Eastern United States from formerly from Massachusetts, Connecticut and New Hampshire and currently from near Albany, New York west across Ontario and the Great Lakes states to Minnesota and western Iowa, then south to Georgia, the Gulf states, and central Texas (Opler and Krizek, 1984). West to eastern Nebraska, eastern Kansas, the Ozarks, and 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). Usually confined to hilly country (Opler and Krizek, 1984). Now apparently extirpated from most of northeastern part of range, including New England, New Jersey, at least the eastern half of Pennsylvania and most of Maryland and very rare in West Virginia and Ohio. As of late 1990s still extant in the Albany, New York Pine Bush and possibly elsewhere in New York” (Figure 45) (NatureServe 2002).

Very few records exist for *Erynnis martialis* within the three National Forests. The majority of these are in the southern portions of the Mark Twain National Forest (24 counties within the Ozarks). In southern Indiana, this species is known from recent records in both Crawford and Harrison counties. Preliminary results from an on-going survey of barrens insects on the Hoosier show this species to be fairly common in its limited habitat. There are no published records of this species from the Shawnee National Forest, although suitable habitat occurs there. Despite this paucity of records, the distribution and habitat requirements of the species are sufficiently well-known in adjacent areas to provide some suggestions as to the potential for its occurrence in the three Forests. There is also substantial credible information regarding the biology of *E. martialis* and its food plant (*Ceanothus* spp.).

PROTECTION STATUS

The global heritage status rank for *Erynnis martialis* is G3G4 (NatureServe 2002).

Ranking by individual states is: Alabama (SU), Arkansas (S2S3), Colorado (S2S3), Connecticut (SH), District of Columbia (S?), Georgia (SU), Illinois (S1), Indiana (S3), Iowa (S3), Kansas (S?), Kentucky (S3), Louisiana (SU), Maryland (S1), Massachusetts (SX), Michigan (SU), Minnesota (SU), Mississippi (SU), Missouri (S4?), Nebraska (S2), New Hampshire (SX), New Jersey (SH), New York (S1S2), North Carolina (S3), Ohio (S1?), Oklahoma (S?), Pennsylvania (S1S2), Rhode Island (SH), South Carolina (S?), South Dakota (S?), Tennessee (S3S4), Texas (S?), Virginia (S1S3), West Virginia (S3), Wisconsin (S2), and Wyoming (S?).

This species is listed as state threatened in Indiana but has not been proposed for listing in either Illinois or Missouri.

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