

***Calephelis borealis* (Grote & Robinson), 1866**
Northern Metalmark
(Riodinidae: Riodininae)

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SUMMARY

The Northern Metalmark has a wide range but is not found in many locations—only a few dozen extant locations are known—and where it is it is usually in small numbers (often ten or fewer adults are counted). There are many threats recognized, including habitat destruction and fragmentation due to development, ill-timed fire and other management activities (as well as neglect that leads to hostplants being crowded out by invasive species), and spraying for gypsy moth control. The known occupied habitats are often only small, and given the low numbers of adults at each site, no location should be considered secure.

CONSERVATION STATUS

Xerces Red List Status: Vulnerable

Other Rankings:

Canada – Species at Risk Act:	N/A
Canada – provincial status:	N/A
Mexico:	N/A
USA – Endangered Species Act:	None
USA – state status:	CT: Endangered MD: Threatened
NatureServe:	G3G4
IUCN Red List:	N/A

SPECIES PROFILE

DESCRIPTION

The Northern Metalmark is in the subfamily Riodininae (metalmarks) of the family Riodinidae (metalmarks). It has a wingspan of 29 to 32 mm (1? to 1¼ inches).

The upperside of the wings appears brown overall, with a dark median band, a broad orange margin, and a whitish fringe. Within the orange band are two pale gray lines, the inner one wavy. The male forewing is rounded.

TAXONOMIC STATUS

Calephelis borealis (Grote & Robinson), 1866.

LIFE HISTORY

Key habitats for Northern Metalmarks are open meadows and streambanks in forested areas, often near to shale or limestone outcrops. This includes disturbed sites such as powerline rights of way. The larval hostplant is roundleaf ragwort (*Packera [Senecio] obovatus*). It has also been suggested that golden ragwort (*P. aureus*) and Philadelphia fleabane (*Erigeron philadelphicus*) may be used.

In most areas there is one brood, although there may be two from late-May to June and in mid-August in southwestern Missouri. Eggs are laid singly on hostplant leaves. They overwinter as late stage caterpillars (fifth or sixth instar, of eight or nine) under the basal rosette of the hostplant or in the soil.

Adults drink nectar from a variety of flowers, including white sweet clover (*Melilotus alba*), goldenrod (*Solidago* sp.), ox-eye daisy (*Leucanthemum vulgare*), sneezeweed (*Helenium* sp.), fleabane (*Erigeron* sp.), black-eyed Susan (*Rudbeckia hirta*), and yarrow (*Achillea* sp.).

DISTRIBUTION

The Northern Metalmark is widely distributed through a broad band of states from western Connecticut southward through Pennsylvania and the central Appalachians to as far west as eastern Oklahoma. The butterfly is not evenly distributed through this region and there are three principal clusters: Connecticut to New Jersey, Pennsylvania to West Virginia, and Ohio to Indiana (of which Ohio may be a stronghold).

THREATS

There are many threats recognized. In the northeast part of the range, habitat destruction and fragmentation due to development is a major threat. In addition, the remaining habitat is affected by ill-timed fire and other management activities, as well as neglect that leads to hostplants being crowded out. There is also some evidence that hostplants are out-competed by invasive species, which may be a concern range-wide. Historically, spraying for gypsy moth control is likely to have drastically reduced populations in those New England states where it occurred. More recently, *Btk* spraying in Maryland and West Virginia is known to have negatively impacted populations.

CONSERVATION STATUS

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The Northern Metalmark does not have any federal protection but is listed as Endangered in Connecticut and Threatened in Maryland.

CONSERVATION NEEDS

Habitats of the Northern Metalmarks are often very small, near shale or limestone outcropping, and are therefore themselves vulnerable. The habitats may also be isolated from neighboring habitats, and the Northern Metalmark populations are often isolated from colony to colony. Almost all populations should be of concern. It is important that the known populations and unoccupied areas of suitable habitat are protected from *Btk* spraying in particular.

RESEARCH NEEDS

Northern Metalmarks are sedentary butterflies and a better understanding of movement and dynamics within metapopulations would be valuable. The potential threat from invasive species should be assessed. The impact of *Btk* spraying must be evaluated.

RESOURCES

CONTACTS

REFERENCES

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Opler, P. A., and V. Malikul. 1992. *A Field Guide to Eastern Butterflies. Peterson Field Guide #4*. Houghton-Mifflin Co., Boston, MA.

Scott, J. A. 1986. *The Butterflies of North America*. Stanford University Press, Stanford, CA.

WEBSITES

U.S. Geological Survey, Northern Prairie Wildlife Research Center; The Butterflies of North America: Northern Metalmark.

<http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/usa/392.htm>

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NatureServe Explorer.

<http://www.natureserve.org/explorer/>

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National Wildlife Federation, eNature; Field Guide: Northern Metalmark.

<http://www.enature.com/fieldguide/showSpeciesSH.asp?curGroupID=2&shapeID=980&curPageNum=5&recnum=BU030>

(Accessed 5/4/05)

Environmental Defense; Petition to the EPA to require the planting of buffer zones of non-Bt corn around fields of genetically engineered Bt corn.

http://www.environmentaldefense.org/documents/239_EPAPetition_071399_Eng.htm

(Accessed 5/4/05)

DISTRIBUTION MAP

(From: U.S. Geological Survey, Northern Prairie Wildlife Research Center.

<http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/usa/392.htm>.)

