



Status: State threatened

Global and state rank: G5TU; S2

Family: Lycaenidae (blues, coppers, hairstreaks)

Range: This subspecies is one of eleven nearctic subspecies of *Lycaeides idas* (Masters 1972) and occurs in Canada, northern Minnesota, northern Wisconsin, and Michigan’s Upper Peninsula. *Lycaeides idas* was formerly confused with the European species *Lycaeides argyrognomon* (Higgins 1985).

State distribution: First discovered in Michigan in 1979 in Dickinson County (Nielsen and Ferge 1982), it is now also known from Alger, Marquette, Keweenaw (Isle Royale), and Schoolcraft counties. Recent surveys have failed to confirm three populations. Ironically the population that was first discovered in Michigan is now likely extirpated due to habitat loss.

Recognition: The northern blue (Lepidoptera: Lycaenidae) is a small silvery butterfly with a wingspan 22-32 mm (0.9-1.25 in.). The dorsal surface is silvery blue in males with a narrow dark border and white fringe; in females it is gray-brown near the anterior and outer edges of the wings with areas of blue toward the bases and posterior edges of the wings. The hindwing of the female has a row of dark spots, sometimes orange, along the outer edge. The ventral surface of both sexes is pearly gray to white with several rows of

small black spots on the inner portions of both wings and a row of metallic blue-green, orange, and black spots just inside the outer margin of both wings, becoming less pronounced in the forewing. The thin, black-marginal line is inflated into triangles at the ends of the veins. **Several other blues resemble the northern blue, but none has the combination of no tail on the hindwing with orange spots on the undersurface border.** Neither the silvery blue (*Glaucopsyche lygdamus*) nor the spring azure (*Celastrina ladon*) has orange on any wing surface and the eastern tailed blue (*Everes comyntas*) has a similar pattern and coloration, but both sexes have tails. **The very similar Karner blue (*Lycaeides melissa samuelis*) occurs only in the lower Peninsula.**

Best survey time: Flight dates are variable, centering around mid-June to mid-July with up to two weeks variation on either side (Mueller, 1988). The best way to survey for this species is to conduct visual surveys while meandering through habitat looking for flowers and nectaring adult butterflies. A pair of close focusing binoculars may be used to help locate individuals. Most butterfly surveys should be conducted on warm, sunny days with little to no wind.

Habitat: The northern blue is found in open sandy or rocky habitats, such as in patches of open habitat in spruce (*Picea glauca*) forests, along rights-of-way, and near rock outcroppings that support the larval host plant, dwarf bilberry (*Vaccinium cespitosum*). One of the best known populations



occurs in Alger County on a nearly flat, sandy plain adjacent to a railroad track. This site is characterized as scattered shrubs (e.g. *Salix*) with a ground cover which is typical of open, dry, sandy areas including bracken fern (*Pteridium aquilinum*), hair grass (*Deschampsia flexuosa*), and reindeer moss (*Cladina rangiferina*). The site also contains a variety of native and non-native flowering plants that are used as nectar sources, such as blackberry (*Rubus* sp.), oxeye daisy (*Chrysanthemum leucanthemum*), hawkweed (*Hieracium* spp.), spreading dogbane (*Apocynnum androsaemifolium*), and wild basil (*Satureja vulgaris*) (Mueller 1987). The dwarf bilberry occurs in large, circular patches representing different clones, the predominant mode of reproduction in this population. Flowering and fruiting are sporadic with practically none occurring in some years.

Biology: The northern blue has a single generation per year, which is markedly different from the two generations of the Karner blue. In Michigan, Mueller (1987) found that adults emerge in mid-June, though they have been found as early as the first week in June. They are frequently observed basking on the ground or nectaring. Males typically fly within a meter of the ground patrolling for females and, depending upon the site characteristics, may or may not be found in close association with dwarf bilberry (Mueller 1987, Nielsen and Ferge 1982). Mating takes place on the ground and oviposition occurs on the leaves and petioles of the host plant or nearby debris. Females walk among the dwarf bilberry, occasionally stopping to deposit an egg (Mueller 1987, Nielsen and Ferge 1982). The egg overwinters and larvae hatch in the spring and begin feeding on its hostplant. In Canada, other hostplants include black crowberry (*Empetrum nigrum*), Labrador tea (*Ledum groenlandicum*) and sheep laurel (*Kalmia angustifolia*) (Layberry et al. 1998.)

Conservation/management: Protection of existing populations and their habitat should be the first conservation priority. Habitat enhancement by maintaining existing openings and creating additional openings in a matrix on the landscape would maintain different successional stages, providing patches of new habitat and ready sources of colonizers. Historically, fire was important in maintaining open habitat patches. To some extent, railroads assisted that process for many years, through both accidental fires and prescribed burns along railroad rights-of-way, which may account for the vigor and persistence of the Alger County site. The northern blue is fire sensitive at all stages in its life, so any burn management program should include subunits that are managed on a rotating basis, always leaving significant portions of the habitat, including both dwarf bilberry and nectar sources, unburned. Any management should be carefully monitored to determine its affect on both

the butterfly and dwarf bilberry.

Research needs: Additional surveys are needed to locate new populations. Areas that contain black crowberry need to be searched for the butterfly in Michigan as most surveys have focused on known dwarf bilberry locales. In addition, research on the life history of both the butterfly and dwarf bilberry is needed to provide guidance to the management program.

Related abstracts: dwarf bilberry

Selected references:

- Higgins, L.G. 1985. The correct name for what has been called *Lycaeides argyrognomon* in North America. *J. Lepid. Soc.* 39(2):145-146.
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- Layberry, R.A, P.W. Hall, and J. Donald Lafontaine. 1998. *The Butterflies of Canada*. University of Toronto Press. 280 pp.
- Mueller, S.J. 1987. Biogeographical survey of *Lycaeides idas nabokovi* (Lepidoptera, Lycaenidae) in Michigan. *Mich. Dept. Nat. Resour.*, Unpubl. Rept. 25 pp.
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- Nielsen, M.C. and L.A. Ferge. 1982. Observations of *Lycaeides argyrognomon nabokovi* in the Great Lakes region (Lycaenidae). *J. Lepid. Soc.* 36(3):233-234.

Abstract citation:

- Cuthrell, D.L. 2001. Special animal abstract for *Lycaeides idas nabokovi* (northern blue butterfly). Michigan Natural Features Inventory. Lansing, MI. 2 pp.

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