

# Karner Blue Butterfly Fact Sheet

## Karner Blue Butterfly

*Lycaeides melissa samuelis*

New York Status: Endangered

Federal Status: Endangered

## Description



The Karner blue is a small butterfly with a wing span of approximately one inch. In the male, the upper surface of all four wings is a deep violet-blue fringed with white. In the female, the upper surface is a dusky brownish blue with orange spots on the edge of the hindwing. The lower surface is a pale silver with white-ringed black spots and rows of bright orange and blue markings near the edge of the hindwings. The protective coloration of the larva, which reaches half an inch in length before changing into a pupa, perfectly matches the green leaves of the vegetation. The larva is covered with very fine hairs.

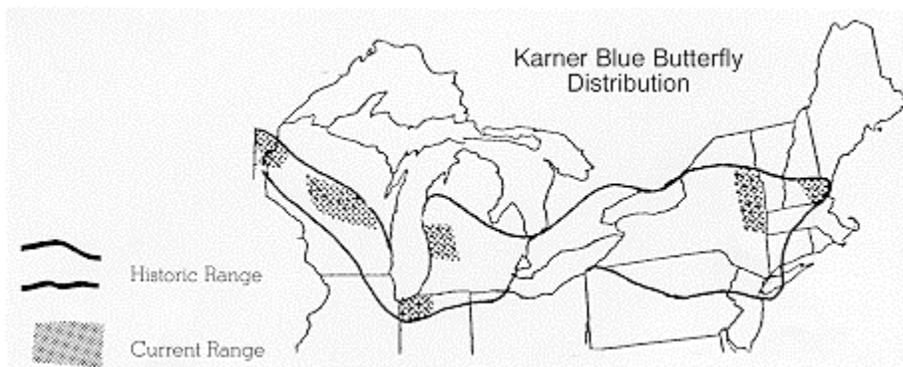
## Life History



Like all butterflies, the Karner blue has four stages in its life cycle - the egg, the larva (caterpillar), the pupa (chrysalis), and the adult (butterfly). There are two generations per year. The first generation adults appear in late May to mid-June. Females lay eggs on the underside of a leaf or stem of the food plant, blue lupine (*Lupinus perrennis*). These eggs hatch in seven to eight days. Forty to fifty percent of the eggs survive to the adult stage. The resulting second brood adults, emerging in mid-July to early August, lay their eggs singly in dried lupine seed pods or near the ground on the stems. Eggs of the second brood overwinter, to hatch the next May. Karner blue adults are nectar-feeders, aiding in the pollination of a variety of wildflowers. The larvae, however, are highly specialized, feeding exclusively on the wild blue lupine leaves. Without blue lupine, the Karner blue would not survive.

### Distribution and Habitat

The Karner blue is found in scattered localities from Minnesota to New Hampshire. In New York, the butterfly is found in certain parts of the Hudson Valley sand belt which extends from the Albany Pine Bush north to the Glens Falls area.



Within its range, this species is restricted to dry sandy areas with open woods and clearings supporting wild blue lupine. This type of habitat is usually associated with pitch pine/scrub oak or oak savannah communities that are maintained by fire at an early stage of plant succession.

## **Status**

The Karner blue is experiencing a decline primarily due to human activities such as agriculture, urbanization and fire suppression. The sandy habitat essential to the blue lupine, and therefore the Karner blue, occurs mostly along river valleys and outwash plains. Because of the location and topography of such areas, they have been heavily favored as settlement sites. Extinctions of entire populations of the Karner blue have occurred around large urban centers such as Chicago and New York City. Other populations, such as those in the Albany Pine Bush, have been reduced both by habitat destruction from urbanization and by loss of lupine through natural succession resulting from fire suppression. The most intact populations remain in Saratoga County.

## **Management and Research Needs**

Research is being conducted to develop methods of enhancing or creating habitat suitable for the Karner blue butterfly, in particular, the establishment and propagation of wild blue lupine. Methods used to establish or restore appropriate habitat conditions for blue lupine and the Karner blue include mowing and controlled burning. Protecting habitat from development is also important in preserving this species. Several of the largest populations of the Karner blue in New York are currently protected and managed by the Department of Environmental Conservation under cooperative agreements with landowners. A recovery strategy for the Karner Blue is being developed by a cooperative working group of DEC, NY'S Office of Parks, Recreation and Historic Preservation, The Nature Conservancy, and the Albany Pine Bush Commission. The efforts of this partnership, involvement of local towns and counties, and the cooperation of private landowners offer the greatest hope for the recovery of this unique species in New York.

## **Additional References**

Dirig, R. 1973. The Endangered Karner Blue. *The Conservationist*. October-November, pp. 6,47.

Ritter, D. (ed.). 1976. Karner's famous blue butterfly. *In Pine Bush: Albany's Last Frontier*. Pine Bush Historic Preservation Project pp. 197-210.

Stewart, M. M. and C. Ricci. 1988. Dearth of the Blues. *Natural History*. May. pp. 64-71.