

***Lycaeides idas lotis* (Lintner), 1876**  
**Lotis Blue**  
**(Lycaenidae: Lycaeninae: Polyommagini)**



Photo by Larry Orsak.  
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## SUMMARY

Little is known about the Lotis Blue and it is possibly extinct. It is only known from a few sites near Mendocino on California's north coast. Thought to have been restricted to a rare coastal bog type of habitat, the cause of its decline is not fully understood. Climatic factors or a change in land management practices since the arrival of European settlers to California may have affected the butterfly. Drought may have also been a factor. Droughts in the late 1970s caused severe declines in populations of seaside bird's-foot trefoil, the plant thought to have been the larval host of this butterfly.

### CONSERVATION STATUS

**Xerces Red List Status: Critically Imperiled (Possibly Extinct)**

**Other Rankings:**

Canada – Species at Risk Act:	N/A
Canada – provincial status:	N/A

Mexico:	N/A
USA – Endangered Species Act:	Endangered
USA – state status:	None
NatureServe:	G5T1
IUCN Red List:	N/A

## SPECIES PROFILE

### DESCRIPTION

The Lotis Blue, *Lycaeides idas lotis*, is one of 13 subspecies of *L. idas* (the Northern Blue) described in North America. The Lotis Blue is morphologically distinguished from other subspecies by its size, wing color, and maculation pattern. With a typical wingspan of slightly less than 2.5 cm (within a range of about 1.5 to 3.2 cm), the Lotis Blue exhibits one of the largest wingspans of any Nearctic race of *L. idas*. The dorsal surface of the wing is a deep violet-blue in the male with a crenulate black border and fringe of white scales along the outer wing margin. In the female, the dorsal wing surface is brown, sometimes bluish-brown, with a wavy band of orange across the subtermen of the fore and hind wings.

### TAXONOMIC STATUS

(Linter) 1876. It has previously had a different species name, *L. argyrognomon lotis* Linter 1879—used by the U.S. Fish and Wildlife Service in listing documents—and also a different genus, *Plebejus*.

### LIFE HISTORY

The Lotis Blue was known to associate with coastal bog habitat and the last known location was at a sphagnum bog surrounded by a closed-cone pine forest, dominated primarily by bishop pine (*Pinus muricata*). Nothing is known for certain about food habits of the Lotis Blue, as the larval host plant is not confirmed, but evidence suggests that it was the seaside bird's-foot trefoil (*Lotus formosissimus*).

### DISTRIBUTION

Historically the Lotus Blue has been found in several coastal localities in wet meadows and sphagnum-willow bogs in northern California. The last population known was in Mendocino County, CA.

### THREATS

The threats are uncertain. Habitat loss and vegetation change due to natural drying and succession of the vegetation community are likely candidates, as are changes in land management and drought affecting populations of the hostplant, but until extant colonies are discovered it is difficult to assess threats with any certainty.

### **CONSERVATION STATUS**

The Lotis Blue has apparently always been naturally rare. However, although uncommon it had consistently been recorded across its known range over more than a century. The last comprehensive survey of the known historical sites was completed in 1990. The Lotis Blue was last observed in 1994. Localized surveys conducted in 2000 did not find the Lotis Blue or its host plants at the last observed location.

It was listed as a federal endangered species on June 1, 1976 (*Federal Register* 41:22041).

Recovery Plan (ESA): Final plan approved in 1985. (Much of the information is now out of date.)

Critical Habitat (ESA): Proposed, 2/8/77 (*Federal Register* 42:7972-7976).

The California Endangered Species Act does not allow listing of insects, so despite its precarious status, the Lotis Blue has no protection under state legislation. The California Department of Fish and Game includes this butterfly on its Special Animals list.

### **CONSERVATION NEEDS**

Until extant populations are discovered, conservation needs cannot be assessed. Its future is likely to revolve around availability of suitable habitat and presence of its larval hostplant.

### **RESEARCH NEEDS**

The highest priorities are surveys for surviving populations and better understanding of the bog habitat. According to the website of the Essig Museum at University of California at Berkeley (reference below under Resources: Websites), ongoing studies are using aerial photography and other remote sensing techniques to attempt to identify areas potentially still inhabited by the Lotis Blue. Research is being conducted on the successional patterns of bog habitat and the needs of the host plant in hopes of preventing its decline and perhaps that of other associated organisms in the future.

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## **RESOURCES**

### **CONTACTS**

U.S. Fish & Wildlife Service: Arcata Fish and Wildlife Office, Endangered Species Branch, 1655 Heindon Road, Arcata, CA. 95521 Telephone: (707) 822-7201; fax: (707) 822-8411

Richard Arnold: Entomological Consulting Services, Ltd., 104 Mountain View Court Pleasant Hill, CA 94523-2188. Telephone: (925) 825-3784

### **REFERENCES**

Arnold, R.A. 1978. Survey and status of six Endangered butterflies in California, 1977. Calif. Dept. of Fish and Game, *Nongame Wildl. Invest. Rpt.* 95 pp.

Arnold, R. A. 1983. Ecological studies of six endangered butterflies (Lepidoptera: Lycaenidae): Island biogeography, patch dynamics, and design of habitat preserves. *University of California Publications in Entomology* 99: 1-161.

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Bean, M. J. 2001. Lessons from Two Endangered Invertebrates. *Wings. Essays on Invertebrate Conservation*. 24(2):11-13. The Xerces Society, Portland, OR.

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

U.S. Fish and Wildlife Service. 1985. *Lotus Blue Butterfly Recovery Plan*. U.S. Fish and Wildlife Service, Portland, OR. 46 pp.

#### WEBSITES

U.S. Fish & Wildlife Service; Threatened and Endangered Species System: Lange's Metalmark Butterfly.

[http://ecos.fws.gov/species\\_profile/servlet/gov.doi.species\\_profile.servlets.SpeciesProfile?socode=I00I](http://ecos.fws.gov/species_profile/servlet/gov.doi.species_profile.servlets.SpeciesProfile?socode=I00I)

(Accessed 4/4/05)

U.S. Fish & Wildlife Service, Arcata Fish & Wildlife Office; Endangered Species Branch: Lotis Blue Butterfly.

<http://arcata.fws.gov/es/inverts/lotis.html>

(Accessed 4/4/05)

University of California at Berkeley; Essig Museum of Entomology: California's Endangered Insects, Lange's Metalmark.

<http://essig.berkeley.edu/endins/lotis.htm>

(Accessed 4/4/05)

Virginia Tech, Conservation Management Institute; Endangered Species Information System: Lotis Blue Butterfly.

<http://fwie.fw.vt.edu/WWW/esis/lists/e501003.htm>

(Accessed 4/4/05)

National Wildlife Federation, eNature.com; Lotis Blue Butterfly.

<http://www.enature.com/fieldguide/showSpeciesAG.asp?agencyID=63&currentPageNum=13&recnum=BU0647>

(Accessed 4/4/05)