

***Speyeria zerene behrensii* (W. H. Edwards), 1869**  
**Behren's Silverspot**  
**(Nymphalidae: Argynninae)**

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## SUMMARY

Behren's Silverspot is one of three coastal subspecies of the Zerene Silverspot that are threatened or endangered. The Behren's Silverspot prefers coastal terrace prairie, a habitat that is under increasing pressure from development, recreation, or lack of management. Its historical distribution covered much of California's north coast, but it is now known from a single population. The butterfly's larvae feed solely on the blue violet, and a secure future for this butterfly is reliant on thriving populations of this plant.

### CONSERVATION STATUS

**Xerces Society Red List Status: Critically Imperiled**

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

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## SPECIES PROFILE

### DESCRIPTION

Behren's Silverspot is in the family Nymphalidae, or brush-footed butterflies. It is a medium-sized butterfly with a wingspan of approximately 5.5 cm (2.2 in). The dorsal wing surfaces are golden brown with numerous black spots and lines. Ventral surfaces are brown, orange-brown, and tan with black lines and distinctive silver and black spots. Basal areas of the wings and body are densely pubescent.

## TAXONOMIC STATUS

*Speyeria zerene behrensii* (W. H. Edwards), 1869. Also known as Behren's Fritillary.

## LIFE HISTORY

Its preferred habitat is coastal terrace prairie. Behren's Silverspot adults mate and lay eggs in the mid to late summer. The eggs hatch shortly thereafter and the first instar larvae enter a period of dormancy. The larvae resume feeding the following spring when their sole food plant, the blue (or hookedspur) violet (*Viola adunca*), begins its spring growth. Following two to three months of feeding and four molts, the larvae pupate. After a short pupation, the adults emerge, living for approximately three weeks during which they live to mate and drink nectar.

## DISTRIBUTION

The historic range of Behren's Silverspot extends along the northern coast of California, from the mouth of the Russian River in Sonoma County northward to the vicinity of Point Arena in Mendocino County. The butterfly is now only known from a single population at Point Arena.

This butterfly is a member of a clade of closely related subspecies that live on the Pacific coast. Myrtle's Silverspot (*Speyeria zerene myrtleae*; see Red List profile for more details) had a historic range along the coast from San Mateo County to Sonoma County, California, and the Oregon Silverspot (*Speyeria zerene hippolyta*; see Red List profile for more details) had a historic range from northern California to southern Washington.

## THREATS

Behren's Silverspot is one of three threatened or endangered subspecies of *Speyeria zerene*. (The others are Myrtle's Silverspot (*S. z. myrtleae*) and the Oregon Silverspot (*S. z. hippolyta*)). Both the coastal prairie habitat of the butterfly and the food plants of their larvae are threatened primarily by commercial and residential development, competition from non-native vegetation, inappropriate levels of livestock grazing, off-road vehicle use, and trampling by hikers and horses. The application of herbicides or other chemical agents, brush removal, or activities that raise heavy dust may also negatively impact this butterfly. Fire suppression has also likely played a role; the butterfly's host violet is better able to germinate when the overlying debris has been cleared away by periodic fires. Over collection of the butterflies themselves also threatens small populations.

## CONSERVATION STATUS

Behren's Silverspot was listed as a Federal Endangered Species on December 5, 1997 (*Federal Register* 62:64306). Surveys of the only known extant site were done during the adult flight period in 1998 and 1990. In the first year adult butterflies were very scarce and approximately 100 adults were observed in the second year. The Arcata office of the U.S. Fish and Wildlife Service planned population surveys during 2001 to determine the Behren's status and distribution, and to characterize the habitat at the one extant and five known historical sites. The information is needed to develop the subspecies' recovery plan. The Arcata office deferred work on the recovery plan until 2002.

Recovery Plan (ESA): In draft form.

Critical Habitat (ESA): None designated.

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

#### **CONSERVATION NEEDS**

All current habitat should be protected from development and managed to avoid disruption to the butterfly's larval hostplant. Appropriate vegetation management, including suitable proscribed fire regimes, should be practiced to ensure adequate abundance of the violet hostplant.

#### **RESEARCH NEEDS**

It is important that the known and historical sites are surveyed to confirm current population levels and distribution.

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## **RESOURCES**

#### **CONTACTS**

U.S. Fish & Wildlife Service: David Solis, Arcata Fish and Wildlife Office, 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**

McCorkle, D.V. (with P.C. Hammond & G. Penington). 1980. Ecological investigation report: Oregon silverspot butterfly (*Speyeria zerene hippolyta*). Unpublished report submitted to Siuslaw National Forest. 117 pages.

McCorkle, D.V. and P.C. Hammond, 1988. Biology of *Speyeria zerene hippolyta* (Nymphalidae) in a marine modified environment. *Journal of the Lepidopterist's Society* 42(3):184-195.

#### **WEBSITES**

U.S. Fish & Wildlife Service, Threatened and Endangered Species System; Species profile: Behren's Silverspot Butterfly.

[http://ecos.fws.gov/species\\_profile/servlet/gov.doi.species\\_profile.servlets.SpeciesProfile?sPCODE=I031](http://ecos.fws.gov/species_profile/servlet/gov.doi.species_profile.servlets.SpeciesProfile?sPCODE=I031)

(Accessed 2/14/05)

Arcata Fish & Wildlife Office, Endangered Species Branch; Behren's Silverspot Butterfly.

[http://www.ccfwo.r1.fws.gov/es/inverts/bss\\_bfly.html](http://www.ccfwo.r1.fws.gov/es/inverts/bss_bfly.html)

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U.S. Geological Service, Northern Prairies Wildlife Research Center; Butterflies of North America: Zerene Silverspot.

<http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/usa/83.htm>

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NatureServe Explorer.

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University of California at Berkeley, Essig Museum of Entomology; California's Endangered Insects: Behren's Silverspot Butterfly.

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

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