

Black, S. H., and D. M. Vaughan. 2005. Species Profile: *Boloria acrocne*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). *Red List of Pollinator Insects of North America*. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation.

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***Boloria acrocne* (Gall & Sperling), 1980**  
**Uncompahgre Fritillary**  
**(Nymphalidae: Argynniinae)**



Photo by Scott Hoffman Black  
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## SUMMARY

Discovered only in 1978 and described as a new species in 1980, this listed endangered butterfly is endemic to the San Juan Mountains of southwestern Colorado. Intensive collecting pressure, improper grazing by domestic livestock, periods of prolonged drought conditions, mining activity, and an increase in alpine recreation coincided with a dramatic population decline and led to its listing as an endangered species under the U.S. Endangered Species Act in 1991.

The Uncompahgre Fritillary lives in patches of snow willow in alpine meadows at elevations above the tree line, and has very limited habitat, a small population size, and low genetic variability, which may affect long-term population stability. The species is susceptible to trampling by recreationists and grazing animals.

### CONSERVATION STATUS

**Xerces 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

The Uncompahgre Fritillary is in the family Nymphalidae (brush-foots). It is a small butterfly with a wingspan of 1 $\frac{1}{8}$  – 1 $\frac{3}{8}$  inches (30 to 35 mm). The dorsal side of the wings is dull orange-brown, with darker shading toward the wing bases, and markings that appear faded and indistinct. On the ventral side of the hindwing the wing is dark orange-brown at the base, providing a stronger contrast with the ivory white costa and ivory dash between costa and cell. The rest of the ventral surface is grayish.

### TAXONOMIC STATUS

*Boloria acrocne* (Gall & Sperling), 1980 is the current name. There has been disagreement about its status, with some believing it to be a subspecies (*Boloria improba acrocne*) but the Uncompahgre Fritillary is still considered a species.

### LIFE HISTORY

These butterflies live in moist tundra with dwarf willows above 13,000 ft. Eggs are laid singly on stems of the hostplant, snow willows (*Salix nivalis*). The caterpillars eat the willows' leaves. Due to the short growing season at such altitudes, the butterflies require two years to complete development from egg to adult. Newly hatched caterpillars hibernate the first winter, before growing through two more instars during the summer and then passing a second winter as fourth instars. During the second summer they complete development and emerge as sexually active adults. Adults fly from late-July into August on warm, sunny days. Although each generation takes two years to develop, adults fly on both odd and even numbered years.

### DISTRIBUTION

Believed to be broadly distributed near glacial margins during the Wisconsin glaciation, the Uncompahgre Fritillary is now confined to small patches of habitat above 13,000 ft in the San Juan Mountains of southwestern Colorado where glacier-like environments have persisted from the Holocene to the present. The Uncompahgre Fritillary lives in alpine meadows above the tree line, most often on north or east facing slopes.

### THREATS

Although there is much optimism with the discovery of new populations within the past ten years, threats to this species still exist. Illegal collecting is a major concern, and increased recreation activities in the high mountains add to the pressure on this butterfly. The possibility that global warming will result in an altitudinal retreat of habitat continues to threaten colonies of this butterfly.

### **CONSERVATION STATUS**

Listing the species led to extensive studies to develop knowledge of its natural history, genetics and population trends, and prompted searches for new colonies. Prior to 1995, only two colonies of this butterfly were known to exist. Between 1995 and 1998, intensive inventory efforts by the Colorado Natural Heritage Program led to the discovery of eight additional colonies. Monitoring techniques are being used to estimate population sizes of the colonies. Preliminary studies with maps, aerial photos and ground surveys indicate that numerous areas have high potential for additional colonies.

The Uncompahgre Fritillary was listed as a federally endangered species on June 26<sup>th</sup>, 1991 (*Federal Register* 56:28712-28717).

Recovery Plan: *Uncompahgre Fritillary Butterfly Recovery Plan*. (1994)  
Critical Habitat: Not designated.

Although Colorado's Nongame and Endangered Species Conservation statute allows listing of insects, none are included in the states lists.

### **CONSERVATION NEEDS**

Necessary recovery actions include restricting collection of the butterfly, monitoring known populations and searching for new ones, and continuing data collection to determine if there are any other threats to the species.

All known populations are on Forest Service and Bureau of Land Management land.

### **RESEARCH NEEDS**

Monitoring known populations and searching for new ones is ongoing. Research into management of habitat, especially the impacts of stock grazing and recreation would be valuable.

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## **RESOURCES**

### **CONTACTS**

U.S. Fish and Wildlife Service: Bettina Proctor, Partnerships Coordinator, P.O. Box 25486, Denver Federal Center, Denver, CO 80225. Telephone: (303) 236-8155 x259

Colorado State University: Aaron Ellingson. Email: [are@lamar.colostate.edu](mailto:are@lamar.colostate.edu)

### **REFERENCES**

Britten, H.B. and L. Riley. 1994. Nectar source diversity as an indicator of habitat suitability for the endangered Uncompahgre fritillary, *Boloria acrocneuma* (Nymphalidae). *Journal of the Lepidopterists' Society* 48:173-179.

Britten, H.B., P.F. Brussard, and D.D. Murphy. 1994. The pending extinction of the Uncompahgre fritillary butterfly. *Conservation Biology* 8:86-94.

Ellingson A., C. Pague, S. Hoffman, and C. Sculley. 1996. *Population Monitoring and Inventory of the Uncompahgre Fritillary* (*Boloria acrocne*). Report for the Colorado Natural Heritage Program, Fort Collins, CO. 43 pgs.

U.S. Fish & Wildlife Service. 1994. *Uncompahgre Fritillary Butterfly Recovery Plan*. Denver, CO. (Available at [http://ecos.fws.gov/docs/recovery\\_plans/1994/940317.pdf](http://ecos.fws.gov/docs/recovery_plans/1994/940317.pdf). Accessed 4/26/05)

#### **WEBSITES**

U.S. Fish & Wildlife Service, Threatened and Endangered Species System; Species Profile: Uncompahgre Fritillary.

[http://ecos.fws.gov/species\\_profile/SpeciesProfile?scode=I01Q](http://ecos.fws.gov/species_profile/SpeciesProfile?scode=I01Q)

(Accessed 4/27/05)

NatureServe Explorer

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

(Accessed 4/27/05)