

50 CFR Part 17

RIN 1018-AB52

Endangered and Threatened Wildlife and Plants; To Determine the Uncompahgre Fritillary Butterfly To Be an Endangered Species**AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

SUMMARY: The Service proposes a butterfly, the Uncompahgre fritillary (*Boloria acrocneuma*), to be an endangered species. Critical habitat is not being proposed. This butterfly has been verified at only two major sites above 4,040 meters (13,200 ft.) elevation in the San Juan Mountains of southwestern Colorado. In 1989, the total known population was estimated to be less than 1,000 individuals. Taking by collectors, adverse climatic conditions, lack of protective regulations, small population size, and low genetic variation endanger the species. Its habitat is potentially threatened by trampling from humans and livestock. This proposal would implement the protection provided by the Endangered Species Act of 1973, as amended. Comments on this proposal are sought.

DATES: Comments from all interested parties must be received by December

14, 1990. Public hearing requests must be received by November 29, 1990.

ADDRESSES: Comments and materials concerning this proposal should be sent to the State Supervisor, Fish and Wildlife Enhancement, U.S. Fish and Wildlife Service, 730 Simms Street, Room 290, Golden, Colorado 80401. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. John Anderson, Biologist, Fish and Wildlife Enhancement, 529 25 1/2 Road, Suite B-113, Grand Junction, Colorado 81505 at (303) 243-2778 or FTS 322-0351.

SUPPLEMENTARY INFORMATION:**Background**

The Uncompahgre fritillary butterfly was discovered on Mount Uncompahgre, Hinsdale County, Colorado, on July 30, 1978. It was subsequently described as a new species (*Boloria acrocneuma*) by Gall and Sperling (1980). The butterfly also has been included in the genus *Clossiana* (Ferris 1984), although this name is more properly considered a subgenus of *Boloria*.

The most recent treatment of North American butterflies lists this taxon as a species (Ferris 1989). Other major books published in the last 10 years also consider the Uncompahgre fritillary to be a full species (Ferris and Brown 1981, Gall 1983, Pyle 1981). However, one recent book considers the Uncompahgre fritillary to be a subspecies (*Boloria improba* ssp. *acrocneuma*) of the Dingy Arctic fritillary (*Boloria improba*) (Scott 1986). For the purpose of this listing action, the Service will recognize this

taxon at the species level. If the Uncompahgre fritillary is later recognized as a subspecies of *B. improba*, the designation of this taxon as an endangered species will remain valid because section 3(15) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*) permits the listing of subspecies.

The Uncompahgre fritillary is a small butterfly with a 2-3 centimeter (1 in.) wingspan. Males have rusty brown wings criss-crossed with black bars; females' wings are somewhat lighter (Gall 1983). Underneath, the forewing is light ochre and the hindwing has a bold, white jagged bar dividing the crimson brown inner half from the purple-grey scaling on the outer wing surface. The body has a rusty brown thorax and a brownish black abdomen (Gall and Sperling 1980).

The Uncompahgre fritillary has the smallest total range of any North American butterfly species. Its habitat is limited to two verified major sites and two possible small colonies in the San Juan Mountains in Hinsdale County in southwestern Colorado. One major site is the type locality on Mount Uncompahgre, which is managed by the Forest Service. The second major site was discovered in 1982 on land managed by the Bureau of Land Management and is not generally known. Because of the potential threat from collecting, the location of this colony is referred to herein only as "site 2."

Despite numerous attempts to locate other populations, no other major populations have been verified. In 1988, three individuals were captured at one

new location and one individual was captured at another new location. These sites must be investigated to determine if they represent possible new colonies. There is a report of five colonies in the San Juan Mountains, but these unverified sites, if extant, have been kept secret by their discoverer. As the butterfly is found only in remote, generally inaccessible areas, it is possible that the species may occur in other mountain ranges in Colorado, but there have been no reports of the butterfly from these other mountain ranges.

All known populations are associated with large patches of snow willow (*Salix nivalis*) above 4,040 meters (13,200 ft.), which provide food and cover. The species has been found only on northeast-facing slopes, which are the coolest and wettest microhabitat available in the San Juans (Brussard and Britten 1989). The females lay their eggs on snow willow, which is also the larval food plant, while adults take nectar from a wide range of flowering alpine plants.

Brussard and Britten (1989) believe that the species has a biennial life history, which means that it requires 2 years to complete its life cycle. Eggs laid in 1990 (even-year brood) will be caterpillars in 1991 and mature into adults in 1992. Similarly, eggs laid in 1991 (odd-year brood) will become adults in 1993. The odd- and even-year broods function as essentially separate populations. It is assumed that odd- and even-year populations existed at both major sites historically, since there is anecdotal evidence that butterflies flew each year at these sites prior to 1987 (Brussard and Britten 1989).

During 1987 and 1988, field surveys and genetic studies were carried out by Dr. Peter Brussard and students under a contract funded by the Forest Service, Bureau of Land Management, and Fish and Wildlife Service (Brussard and Britten 1989). Though they visited over 50 sites that appeared to satisfy the butterfly's habitat requirements, they found only the few individuals at the two new sites previously mentioned.

These researchers believe there has been a decline in the butterfly's known population. The even-year broods at the two known sites appear to be declining, and the odd-year brood at the type locality may be extinct. The status of the odd-year brood at site 2 is unclear. On Mount Uncompahgre, the 1978 population (even-year brood) was estimated to be 800 individuals (Interagency Agreement 1984); the 1988 population was estimated to be 208 individuals (Brussard and Britten 1989). At site 2, the 1982 population was estimated to be between 1,000 and 1,500

individuals (Interagency Agreement 1984); the 1988 estimate was 200 individuals (Brussard and Britten 1989). There are anecdotal reports of an odd-year population at Mount Uncompahgre prior to 1987, but no Uncompahgre fritillaries were captured in 1987. The status of the odd-year population at site 2 is difficult to assess due to a lack of historical data on estimated population size. Assuming the species has a biennial life history, then adding the 1987 and 1988 data results in a total estimated population size at the two known sites of approximately 700 individuals.

Brussard and Britten (1989) also used electrophoretic techniques to examine population genetic variability. Their studies revealed low genetic variability in the Uncompahgre fritillary when compared to the level of genetic variability in fritillaries, in general. This low genetic variability would indicate less environmental adaptability, which would reduce its ability to adapt to a changing environment.

The species faces many threats. As it is one of the few new North American butterfly species discovered in the last half century, it is attractive to collectors. Its sedentary nature, weak flying ability, and tendency to fly low to the ground make it easy to collect. Possible overcollection is considered the greatest human-caused threat to the species. Other actual or potential threats to the species include adverse climatic conditions, lack of protective regulations, small population size, and low genetic variability. There is a minor potential threat from trampling by humans and livestock. The species' small population size, together with the threats listed above, justifies the proposal of the Uncompahgre fritillary butterfly as an endangered species.

On November 5, 1979, the Service was petitioned by Lawrence F. Gall to list the butterfly under provisions of the Endangered Species Act of 1973. In response, the Service published a notice of status review on the butterfly on February 6, 1980 (45 FR 8029), which solicited public comments. Comments from the public supported listing and protection under the Act, but the Service did not propose its listing. Subsequently, the Service included the butterfly in a notice of petition findings on January 20, 1984 (49 FR 2485), which stated that listing the butterfly was warranted but precluded, and noted that it was a category 2 species (a species which may be appropriate to list, but for which there is not enough biological data at the time to support the listing). Its status was changed from category 2 to category 1 (a species for which there is

sufficient biological data on hand to support listing) in the Invertebrate Notice of Review published on May 22, 1984 (49 FR 21664). The Service made 1-year findings that listing the species was warranted but precluded on May 10, 1985 (50 FR 19761); January 9, 1986 (51 FR 996); June 30, 1987 (52 FR 24312); July 7, 1988 (53 FR 25511); December 29, 1988 (53 FR 52746); and April 25, 1990 (55 FR 17475). This proposal constitutes the final finding for the petitioned action.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Uncompahgre fritillary butterfly (*Boloria acrocnema*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The known populations of the butterfly are on Federal land. The Mount Uncompahgre habitat is in the Big Blue Wilderness in the Uncompahgre National Forest, while site 2 is in a wilderness study area on land administered by the Bureau of Land Management. Both areas are above timberline, hence there are no threats from logging. Mining activity does not appear to be a threat to the known populations. Historically, herds of sheep were driven over both mountains where the butterflies occur, but there is no grazing currently at the major sites.

The main hiking trail to the summit of Mount Uncompahgre bisects the colony on that mountain, but there seems to be no evidence that hikers or pack horses have damaged the nature of the butterfly's habitat. One day's observation by the author of this rule demonstrated that hikers do not linger or rest in the colony area. Moreover, pack horses are uncommon on this trail. A hiking trail passes near site 2, but routing changes were made to the trail to reduce the likelihood that hikers will deviate from the trail and cross through the butterfly site. Trampling of the colonies by collectors or biologists is a potential threat, but there has been no demonstrated habitat change due to this factor.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* The Uncompahgre fritillary

butterfly has been the subject of intense sampling by biologists and collectors since its discovery. In 1981, collection of the species for research or marketing to private collectors probably exceeded 100 adults, or up to 20 percent of the Mount Uncompahgre population (Interagency Agreement 1984). The genus *Boloria* is extremely popular with collectors. Specimens of *B. acrocneuma* have been offered by dealers for prices exceeding \$100 for males and even higher prices for females (Gall 1983). Collecting from small colonies or repeated handling and marking (particularly of females and/or in years of low abundance) could seriously damage the populations through loss of individuals and genetic variability. Collection of females dispersing from a colony also can reduce the probability that new colonies will be founded. Extremely small populations, such as those of the Uncompahgre fritillary, should not be subjected to undue pressure from collectors.

C. Disease or predation. There are no known diseases of the butterfly that could threaten its continued existence. Wilcove (1980) recorded an instance of direct predation on the butterfly by a brown-capped rosy finch (*Leucosticte australis*), and identified other potential avian predators. However, there is no indication as yet that predation is a significant threat.

D. The inadequacy of existing regulatory mechanisms. The Mount Uncompahgre site is in the Big Blue Wilderness. In addition to wilderness management restrictions, the Forest Service has prohibited the collection of butterflies on Mount Uncompahgre since 1984. There is no sheep grazing on the site at the present time, and there is a proposal to restrict horse use to an area downslope from the butterfly site. Nevertheless, it has been reported that some collectors may be collecting the species despite the ban. Site 2 is located in a wilderness study area. The Bureau of Land Management has terminated grazing in this area, but there is no prohibition against collecting. The Colorado Division of Wildlife does not possess the legal authority to protect the species. The Colorado Natural Areas Program has registered, but not yet designated, the Mount Uncompahgre site as a State Natural Area. This means that the site has been identified as one deserving special attention, but a management agreement has not been finalized. In 1984, the Forest Service and Bureau of Land Management signed an interagency agreement for the conservation of the Uncompahgre fritillary. The parties are implementing

this agreement, but the level of implementation is limited by available funding.

These voluntary efforts on the part of the Forest Service, Bureau of Land Management, and the Colorado Natural Areas Program are commendable. Having identified the Uncompahgre fritillary as a species in need of protection, they have taken important steps to protect this species. However, the species-specific protections are discretionary and could be withdrawn or lapse in effectiveness if funding diminishes. Federal listing of the butterfly would provide a greater level of protection. Listing would ensure that Federal agencies would not take actions likely to jeopardize the species, and promote efforts toward species recovery. It would also allow for the prosecution of collectors under Federal law and provide for the issuance of permits to limit and manage those who wish to conduct scientific studies of the butterfly. Finally, it would improve the cooperating agencies' chances of obtaining additional funding to protect, research, and recover the species.

E. Other natural or manmade factors affecting its continued existence. Many other factors threaten the continued existence of the Uncompahgre fritillary. First, the butterfly exists only in the highest, wettest peaks in southwestern Colorado. Biologists who completed population surveys of the butterfly in 1987-88 believe that several recent drought years have stressed the butterfly, which evidently requires a cool and wet microhabitat to successfully complete development (Brussard and Britten 1989). Climatic stress may be a major factor underlying recent population declines.

If the species does have a biennial life history, then the possible extinction of the odd-year population at Mount Uncompahgre is cause for concern. Odd-year and even-year broods function essentially as separate populations. It may be possible for an extinct odd-year population to be reestablished if a few individuals from the even-year brood at the same site take 3 years instead of 2 to complete development, but reestablishment would be very slow.

The small population size and limited genetic variability of the species is itself a threat. The small size of the known populations makes them vulnerable to extinction from natural (e.g., drought, exceptionally warm temperatures) or human (e.g., overcollection) causes. In addition, random demographic effects (e.g., skewed sex ratios) and/or the loss of alleles due to random genetic effects

could cause permanent loss of one or both populations.

As noted earlier, this butterfly has the smallest known range of any North American species when the total area occupied by the two verified colonies are considered. Although small habitat size might normally be a threat in itself, the colonies are placed such that snow avalanches are not likely, and fire or other kinds of calamities are not likely.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list the Uncompahgre fritillary butterfly (*Boloria acrocneuma*) as endangered. Since the species' discovery in 1978, only two major sites have been identified, and, based on available data, their populations have declined. The odd-year population at the type locality already may be extinct. Despite the administrative protections currently being implemented, the remaining populations are endangered by taking by collectors, adverse climatic conditions, lack of protective regulations, small population size, and low genetic variation. The species' habitat is potentially threatened by trampling from humans and livestock. These factors could lead to the species' extinction throughout all or a significant portion of its range.

The Service recognizes that listing the species may increase collection pressures due to the loss of protective anonymity. However, the Service is required to list species deserving of the Act's protection, and final listing will provide additional protection, as explained above, and encourage actions to recover the species.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for the Uncompahgre fritillary. As discussed under Factor B in the "Summary of Factors Affecting the Species," possible overcollection of this butterfly is one of the major threats to its existence. Though some collectors know of the Mount Uncompahgre site, the exact location of site 2 is not generally known. Publication of the exact location of these sites would endanger the species further. The Forest Service and the Bureau of Land

Management, upon whose land the butterfly occurs, are aware of the location of the butterfly populations and the importance of protecting this species' habitat. Protection of this species' habitat will be addressed through the recovery process and through section 7 procedures.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Current Federal involvement and management for the species were discussed earlier. Long-term monitoring should be continued, as well as research into the species' life history and habitat requirements. If possible, artificial recolonization should be attempted to establish additional colonies in suitable habitat to reduce the risk of extinction.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife.

These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. Requests for copies of the regulations on animals and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, Room 432, 4401 N. Fairfax Dr., Arlington, Virginia 22203 (703/358-2093, FTS 921-2093).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposal are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the Uncompahgre fritillary;

(2) The location of any additional populations of the Uncompahgre fritillary and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range and distribution of this species; and

(4) Current or planned activities in the subject area and their possible impacts on the Uncompahgre fritillary.

Final promulgation of the regulation on the Uncompahgre fritillary will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final

regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the State Supervisor (see ADDRESSES).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References Cited

- Brussard, P.F., and H. Britten. 1969. The status of the Uncompahgre fritillary (*Boloria acrocneuma*). Final report prepared for the U.S. Forest Service, Bureau of Land Management, and Fish and Wildlife Service. Montana State University. Bozeman. 47 pp. plus tables and figures.
- Ferris, C.D. 1984. Overview of *Clossiana improba* (Butler) in North America with a description of a new subspecies from Wyoming (Nymphalidae: Argynninae). Bulletin of the Allyn Museum 69:1-7.
- Ferris, C.D. 1989. Supplement to: A catalogue/checklist of the butterflies of America north of Mexico. The Lepidopterists Society. Memoir No. 3. 163 pp.
- Ferris, C.D., and F.M. Brown, eds. 1981. Butterflies of the Rocky Mountain states. University of Oklahoma Press, Norman. 442 pp.
- Gall, L.F. 1983. Uncompahgre fritillary butterfly. pp. 477-479 in The IUCN invertebrate red data book. S.M. Wells, R.M. Pyle, N.M. Collins, eds. International Union for Conservation of Nature and Natural Resources, Gland, Switzerland. 652 pp.
- Gall, L.F. 1984. Population structure and recommendations for conservation of the narrowly endemic alpine butterfly, *Boloria acrocneuma* (Lepidoptera: Nymphalidae). Biological Conservation 28:111-138.
- Gall, L.F., and F.A.H. Sperling. 1980. A new high altitude species of *Boloria* from southwestern Colorado (Nymphalidae), with a discussion of phenetics and hierarchical decisions. Jour. Lepid. Soc. 34:230-252.
- Interagency Agreement. 1984. Interagency agreement and species management perspective for Mt. Uncompahgre fritillary butterfly (*Boloria acrocneuma*). U.S. Forest Service and U.S. Bureau of Land Management, Gunnison, Colorado. 52 pp.
- Pyle, R.M. 1981. The Audubon Society field guide to North American butterflies. Alfred A. Knopf, New York. 816 pp.

Scott, J.A. 1986. The butterflies of North America, a natural history and field guide. Stanford University Press, Stanford, California. 583 pp.

Wilcove, D.S. 1980. A report on the birds of Uncompahgre with reference to their predation on *Boloria acrocneuma*. Unpublished report prepared for Larry Gall and the Xerces Society, in U.S. Fish and Wildlife Service files, Denver, Colorado. 5 pp.

Author

The primary author of this proposed rule is Dr. Paul A. Opler, Office of Information Transfer, U.S. Fish and Wildlife Service, 1025 Pennock Place,

Suite 212, Fort Collins, Colorado 80524 (303/493-8401; FTS 323-5401).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation

Proposed Regulation Promulgation

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500, unless otherwise noted.

2. It is proposed to amend § 17.11(h) by adding the following in alphabetical order, under INSECTS to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *
(h) * * *

SPECIES		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
INSECTS	•	•	•	•	•	•	•
Butterfly, Uncompahgre tributary.	<i>Boloria acrocneuma</i>	U.S.A. (CO).....	NA.....	E	NA	NA
	•	•	•	•	•	•	•

Dated: October 1, 1990.
 Richard N. Smith,
 Acting Director, Fish and Wildlife Service.
 [FR Doc. 90-24224 Filed 10-12-90; 8:45 am]
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