



CENTER FOR NATIVE ECOSYSTEMS

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Al Pfister
Western Colorado Project Leader
U.S. Fish and Wildlife Service
Attention: Uncompahgre fritillary butterfly 5-year Review
764 Horizon Drive
Building B
Grand Junction, CO 81506

BY ELECTRONIC MAIL

Dear Mr. Pfister:

Center for Native Ecosystems, The Xerces Society for Invertebrate Conservation, and Colorado Wild provide the following comments for your use in preparing a 5-year review of the status of the Uncompahgre fritillary butterfly (*Boloria acrocneuma*).

While the U.S. Fish and Wildlife Service, Forest Service, and Bureau of Land Management are all to be commended for their efforts in conserving the fritillary, the recovery plan's criteria for downlisting and delisting have not yet been met. We recognize the progress toward recovery that these agencies have achieved, and encourage you all to continue working toward this goal.

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The 1994 recovery plan states, "Downlisting may be considered if threats are removed and if adequate quality habitat exists to maintain stable colonies of butterflies for 10 consecutive years at both Mt. Uncompahgre and Redcloud Peak" (p. 5, emphasis added). The recovery plan recognizes overcollection and the following other factors as threats to the species: "adverse climatic changes, small population size, and low genetic variability. There is a minor potential threat from trampling of larvae by humans and livestock" (p. 3). While the agencies have done an admirable job of limiting the threat of trampling and collecting, the other enumerated threats cannot be considered to have been removed at this time. The threat posed by climate change continues to rise, the overall number of populations remains small, and we are not aware of any additional genetic research to counter the results of Brussard and Britten (1989) showing low levels of genetic diversity in Uncompahgre fritillary populations.

The recovery plan also states, “Delisting may be considered after stable colonies of butterflies exist for 10 consecutive years at a minimum of 10 sites. The numbers that will need to be maintained in order to define the colonies (and entire population) as stable cannot presently be determined” (p. 5). Our understanding is that at this time only three colonies are being monitored using methods that provide population estimates, and that the other eight are being monitored for presence/absence only. Therefore it appears that to meet the delisting criteria the Service would first need to initiate population monitoring at the remaining eight sites, track at least ten of the 11 sites for at least ten consecutive years, and determine that trends at ten sites were stable. In addition, the recovery team would most likely need to provide more guidance about minimum population numbers required for long-term stability or viability. We are not aware of a Population Viability Analysis having been prepared for this species. We understand that Dr. Kevin Alexander with Western State College has completed a population trends analysis, and we look forward to reviewing his findings, which we have not yet been able to obtain. These results will also be important in ascertaining whether the Redcloud and Uncompahgre populations should be considered stable, which the downlisting criteria require.

Information the Service should consider and disclose in the 5-year review

Climate change

Climate change is the greatest threat to the long-term persistence of this species. Section 3.4 of the recovery plan’s step-down outline recommends combining population monitoring with climatological monitoring. The emphasis in the recovery plan is to determine whether population levels are correlated with climatic conditions. Our understanding is that this monitoring was conducted in the 1990s with few if any detected correlations. However, long-term monitoring of these types of variables could help document whether climate change is underway in fritillary habitat, and could help predict what habitat parameters may change as a result. For example, it could be very useful to compare soil moisture levels or snowfield depth observed currently with those recorded a decade ago. Tracking snow willow phenology and fritillary emergence dates could also help document whether a climate change signal is present in fritillary habitat now, or becomes apparent in the future. Fritillary sites should provide excellent climate change study locations because they should remain relatively undisturbed by other sources of anthropogenic change, and they occur in areas that may be most vulnerable to the effects of global warming (for example, the recovery plan describes fritillary sites as “the coolest and wettest microhabitat available in the San Juans” (p. 2)).

In the 5-year review, the Service should examine any available climatic data for the San Juans that could help elucidate projected effects on fritillary habitat condition or persistence. The Colorado Natural Heritage Program’s Element Global Rank Report for the fritillary states, “Threats postulated due to global warming could prove to be very serious since colonies are at very high elevations and have little room to move up” (p. 1). In addition, the Element Occurrence Reports make frequent reference to snowfields which provide late-season moisture being associated with fritillary habitat. Monitoring soil moisture and snowpack could provide important information to help determine how imminent the risk of habitat loss is. Modeling potential changes in these parameters and searching for additional sites that may not be occupied now (because they are too mesic or snow-covered now, for example, if this is possible within the

fritillary's range) could help locate and secure additional sites that may warrant protection as potential habitat under climate change scenarios. These strategies should be incorporated in recovery efforts.

The Uncompahgre fritillary may not experience long-term security via ten currently stable populations because climate change may have unpredictable destabilizing effects. Additional sites may be required if even a handful are to persist, and, as the recovery plan notes, it may not be possible to provide long-term security for this species if its habitat vanishes completely in response to climate change. The Service should more closely examine whether the best available science indicates that additional redundancy beyond ten sites is necessary to recover this species in a changing climate.

It would be surprising for the Service to downlist the fritillary now, when the political climate has finally shifted to acknowledge and address the major threat that climate change poses around the globe. If the Service asserted that the threat of climate change had been "removed" for this species, as the downlisting criteria require, it would be difficult to defend this position publicly.

Continuing problems with trespass grazing

We are aware of reports of continuing problems with trespass grazing by sheep being illegally trailed through the Uncompahgre Peak population. This appears to be a long-term problem, which the recovery plan also mentions. Since the problem has persisted for over a decade, we recommend that the Forest Service carefully consider revoking that permittee's grazing permits. The Service should disclose this ongoing issue in its 5-year review as well as the steps that have been taken to address trespass grazing and an evaluation of why they have been ineffective thusfar. The Service should also disclose whether this is an issue at other sites.

Potential need for additional protective designations

The recovery plan only discusses the two occupied sites that were known at the time, so it is unclear what type of management the other colonies now receive. After discussing the special management prescriptions (including special designations like Area of Critical Environmental Concern and Natural Area) that the Redcloud and Uncompahgre Peak sites received, the recovery plan states, "Similar habitat protection measures may be needed on any newly found colony site" (p. 4). The 1992 Site Evaluation Form for Redcloud Peak Natural Area indicates that mining claims may be present in fritillary habitat. The Articles of Designation for Redcloud Peak Natural Area also suggest that the area remains open to oil and gas leasing, and is a utility avoidance area rather than an exclusion area. The Service should evaluate current management, (including special designations, disposition of any mining claims, availability for oil and gas leasing, allowable surface disturbances including utility corridors, and grazing management) for all currently known sites in the 5-year review. Monitoring of habitat condition and any impacts of other permitted uses should be incorporated in annual site visits rather than only recording fritillary presence/absence.

Potential additional research needs

It appears that additional information regarding Uncompahgre fritillary genetics and larval life history needs could provide useful insights for management. Current data collection (primarily presence/absence) will not be terribly useful in providing the kind of demographic data that

would be needed to conduct Population Viability Analyses or to determine which life stages might be most sensitive to change. Additional climatological data collection and modeling could help better inform attempts to anticipate and address the challenges that climate change will most likely pose for this species.

Threat of collection

It appears that Endangered Species Act protection has been very helpful in stemming the collection threat for this species. The 5-year review should evaluate the steps that were taken to address this threat, and the disincentive against collecting that Endangered listing currently provides. Prior to any serious consideration of delisting, the Service must carefully consider how removal of Endangered Species Act protection could affect collection risk.

Conclusion

The federal agencies have done a commendable job in addressing the most immediate threats that the fritillary faced at the time of listing. Now the most challenging, long-term threats remain: climate change, small population size, and low genetic diversity. The Uncompahgre fritillary presents an important opportunity to address these threats honestly and proactively, and potentially be able to apply lessons learned with this species to others. The fritillary's current status is not controversial, and the Service has good working relationships with the land managers involved. This should provide a very positive context for working toward ameliorating these remaining very serious threats. We strongly encourage the Service to continue to actively work toward Uncompahgre fritillary recovery by creatively approaching these challenging threats, and to allow the many benefits that Endangered Species Act protection provides to continue to bring resources and attention to both the fritillary and to these important threats that currently imperil so many other species as well.

Sincerely,



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On behalf of:

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Sources Cited

Brussard, P.F., and H. Britten. 1989. The status of the Uncompahgre fritillary (*Boloria acrocnema*). Final report prepared for the Forest Service, Bureau of Land Management, and Fish and Wildlife Service. Montana State University, Bozeman. 47 pp. plus appendices.