

1. **Species:** Uncompahgre Fritillary Butterfly (*Boloria (improba) acrocneuma*)
2. **Status:** Table 1 summarizes the current status of this species or subspecies by various ranking entity and defines the meaning of the status.

Table 1. Current status of <i>Boloria improba acrocneuma</i>		
Entity	Status	Status Definition
NatureServe	G5T1T2	<i>Species is Critically Imperiled</i> At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
CNHP	S1	<i>Species is Critically Imperiled</i> At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
Colorado State List Status	NONE	N/A
USDA Forest Service	ESA Section 7	ESA Section 7 consultation requirement for activities that may affect the species.
USDI FWS ^b	FE	Federally listed as Endangered
USDI FWS Critical Habitat	None	No occurrence of designated critical habitat within the planning area.
^a Colorado Natural Heritage Program.		
^b US Department of Interior Fish and Wildlife Service.		

The 2012 U.S. Forest Service Planning Rule defines Species of Conservation Concern (SCC) as “a species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long-term in the plan area” (36 CFR 219.9). This overview was developed to summarize information relating to this species' consideration to be listed as a SCC on the Rio Grande National Forest, and to aid in the development of plan components and monitoring objectives.

3. Taxonomy

Genus/species *Boloria acrocneuma* is not accepted as valid. *Boloria improba acrocneuma* is accepted as valid (ITIS 2015).

4. Distribution, abundance, and population trend on the planning unit [12.53.2,3,4]:

Uncompahgre fritillary butterfly (UFB) is narrow endemic, restricted to isolated alpine habitats in the San Juan Mountains of southwestern Colorado (NatureServe 2015). Mt. Uncompahgre and Redcloud Peak were the only two colonies known at the time of listing and recovery planning. Shortly after completion of the Recovery Plan, an additional colony was discovered. Eight other colonies were discovered in subsequent years (USDI Fish and Wildlife Service 2009).

Currently, 11 known colonies exist. Three are quantitatively monitored with line transects, and the remaining eight are monitored only for presence. Three of the colonies have been monitored

for population status for more than 10 years, but the data are not currently sufficient for to determine that the population has been stable or increasing during this time. Much of the data collected before 2003 was unreliable due to changes in transect methodology and missing data (USDI Fish and Wildlife Service 2009).

Five of the known 11 colonies occur within the planning area. Quantitative population data is not recorded for these sites; therefore, abundance and trend information for populations within the planning area has not been identified.

Based on the monitoring report for the 2014 field season (Alexander and Keck 2015) the ongoing qualitative monitoring of the 11 confirmed populations documented population persistence at only nine of the 11 known colonies. Persistence has not been documented at Rio Grande Pyramid colony for two years and likewise for seven years at the Machin Lake colony of the Canyon Diablo population. The lack of confirmation of the UFBs at the Machin Lake colony for seven years and the Cinnamon Pass colony for over a decade may indicate that some populations may be extirpated.

Table 2. Known Occurrence Frequency within the Planning Area (NRIS database)

Known Occurrences in the past 20 years	5 locations
Year Last Observed	2014

5. Brief description of natural history and key ecological functions [basis for other 12.53 components]:

All known UPB populations are associated with large patches of snow willow (*Salix nivalis*) above 12,000 feet, which provide food and cover. The species is found primarily on northeast-facing slopes, which are the coolest and wettest microhabitat available in the San Juan Mountains.

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 (USDI Fish and Wildlife Service 2015). Adults fly about late July into August. Flight is possible only in warm sunny weather. Species is biennial (requiring 2 years to complete life cycle), but flies in both odd and even years (NatureServe 2015).

6. Overview of ecological conditions for recovery, conservation, and viability [12.53 7, 9?, 10, 11, 12]:

It is known that illegal collecting has taken place in the past at some well-known locations. Therefore, the ongoing, recommended strategy is to prevent the locations of populations from becoming public knowledge. However, the likelihood and consequences of this collecting have been reduced in relationship to other factors associated with the long-term persistence of this species (R. Ghormley, pers. comm., July 2015)

In recognition of this potential threat to UFB from livestock grazing, the U.S. Forest Service avoids sheep grazing within UFB colonies altogether, or allows only trailing through the colonies and suitable habitat, but not bedding or long-term grazing. The only colony with sheep trailing through the colony on a reoccurring (but inconsistent) basis has been Mt. Uncompahgre, which is located outside the planning area (USDI Fish and Wildlife Service 2009).

Evidence of cattle grazing on the Machin Lake colony on the Rio Grande National Forest occurred in 2007 but has not been noted since that time. Persistence of UFB at this colony was documented the year after livestock grazing (in 2008) but has not been noted since that time.

Also, the lack of evidence for persistence at some subpopulations may indicate that these populations are not always stable or that population numbers are relatively low and that the emergence period is relatively short. (Alexander and Keck 2015).

Climate change remains a concern due to the relatively limited habitat size and high elevation of this species. Climate change may be affecting the developmental timing of UFBs which may account for some shifts in persistence. Events such as the early UFB emergence date in 2012 may be providing additional anecdotal evidence (Alexander and Keck 2015). Existing and predicted climate trends may also present implications for other alpine system pollinators. Future monitoring and assessment is needed to evaluate threat of climate change on this federally endangered species (Alexander and Keck 2015).

7. Threats and Risk Factors

Threats listed in the final listing rule and the Recovery Plan include trampling of the UFB and its habitat by humans and livestock, collecting, lack of regulatory mechanisms, adverse climatic changes, small population size, and low genetic variability (USDI Fish and Wildlife Service 2009). While most known UFB populations are in remote areas, potential threats to the species' persistence still exist. Increasing recreational traffic, including much off-trail use, domestic livestock grazing, grazing by wild ungulates and the potential for global climate change all pose problems to habitat necessary to the species' recovery. Illegal collecting may also continue at some colonies although none has been documented recently (Alexander and Keck 2015).

8. Key literature:

Alexander, K.D. and A.G. Keck. 2015. Uncompahgre Fritillary Butterfly Monitoring and Inventory: 2014 Report and Status. 19 pp.

NatureServe. 2015. An online encyclopedia of life. Accessed online at: <http://explorer.natureserve.org/index.htm> [07/06/2015].

USDI Fish and Wildlife Service. 1994. Uncompahgre fritillary butterfly recovery plan. Denver Colorado. 20 pp.

USDI Fish and Wildlife Service. 2009. Uncompahgre fritillary butterfly (*Boloria acrocnema*), 5-year review: summary and evaluation. 19 pp.

USDI Fish and Wildlife Service. 2015. Uncompahgre fritillary butterfly (*Boloria acrocnema*). Accessed online at: <http://www.fws.gov/mountain-prairie/es/esUpdate/uncompahgreFritillaryButterfly.php> [07/20/2015].