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October 30, 2023

USDA Forest Service
Rocky Mountain Region
Attn: Reviewing Officer
C/O Director of Strategic Planning
2nd floor, 1617 Cole Blvd. Building 17
Lakewood, CO 80401

Subject: Grand Mesa, Uncompahgre, Gunnison National Forests Revised Land Management Plan

Responsible Official: Chad Stewart, GMUG Forest Supervisor

Submitted via: https://www.fs.usda.gov/goto/gmug/forestplan_objections

Dear Reviewing Officer:

Defenders of Wildlife files this objection to the Final Land and Management Plan for the Grand Mesa, Uncompahgre, Gunnison (GMUG) National Forests under the process identified in 36 C.F.R. § 219 Subpart B. Notice of availability of the Draft Record of Decision (Draft ROD), Final Environmental Impact Statement (FEIS), and the Revised Land Management Plan (Revised Plan) was published in the Grand Junction Daily Sentinel, the GMUG's newspaper of record, on August 30, 2023, making this objection timely. Our objection focuses on plan direction relevant to two species listed under the U.S. Endangered Species Act (ESA): the Canada lynx (threatened) and Uncompahgre fritillary butterfly (endangered).

Sincerely,

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I. Canada Lynx (*Lynx canadensis*)

We raised concerns about this standard and other plan components being insufficiently protective in our comments on the Draft Plan and DEIS. HCCA et al. 2021 at 75-99.¹

The Canada lynx (*lynx*) occurs on the GMUG and is listed under the ESA as a threatened species in the Distinct Population Segment (DPS) of the lower 48 states. 65 Fed. Reg. 16052, March 24, 2000. The Southern Rockies' lynx population makes up one of six lynx "geographic units" in the DPS and is the southern-most unit. USFWS 2017. Lynx inhabiting the Southern Rocky Mountain Geographic Unit largely depend on national forests within the Rocky Mountain Region (Region 2) of the Forest Service. Each Region 2 national forest in the Southern Rockies adopted a plan amendment, the Southern Rockies Lynx Amendment (SRLA). Since 2008, the SRLA has served as the regulatory mechanism to conserve and manage lynx habitat in Forest Service Region 2, including for the GMUG. USDA-USFS 2008. The SRLA plan components placed some restrictions on forest uses such as logging, recreation, and fragmentation that can negatively impact habitat.

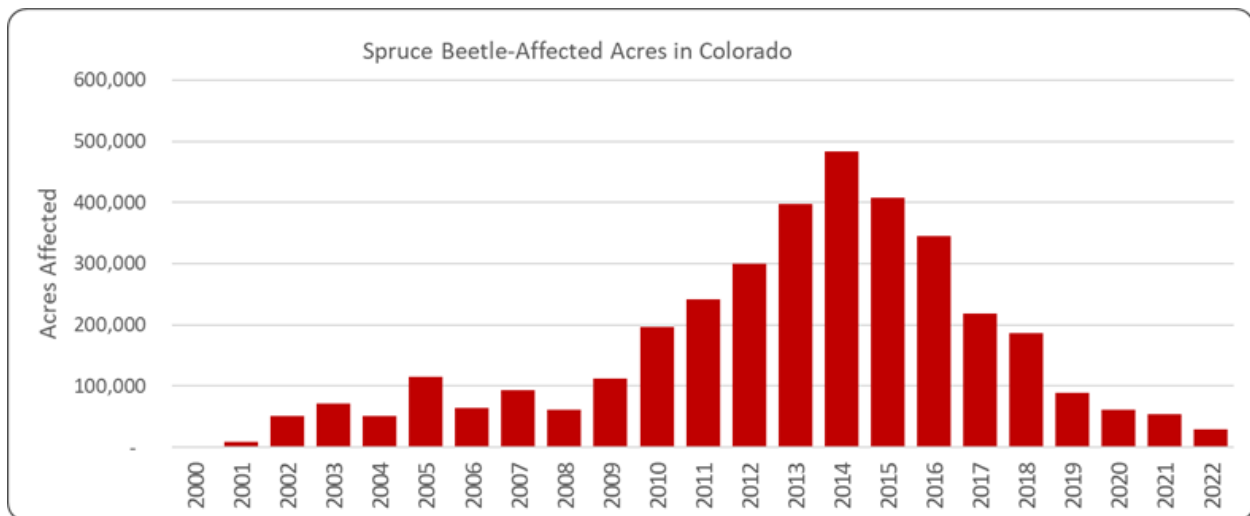
In its 2017 Species Status Assessment for the DPS, the U.S. Fish and Wildlife Service (USFWS) predicted this geographic unit's population may be extirpated by the end of the century and possibly by 2050, based on climate change scenarios. USFWS 2017. Given this dire prediction, the GMUG's revised forest plan must contain strong direction to eliminate the anthropogenic threats to the lynx and lynx habitat.

The forest plan must contribute to the recovery of the species as mandated by 36 C.F.R. § 219.9(b)(1) and help fulfill the Forest Service's obligation to promote the species' recovery under the ESA. Plan provisions, including plan standards and other components, must be informed by the best available scientific information (BASI) under the Forest Service's Planning Rule at 36 C.F.R. § 219.3. Additionally, plan components must be written clearly and specifically to allow line officers the ability to implement projects that achieve desired conditions as required by the Planning Rule at 36 C.F.R. § 219.7(e)(1)(i-v) and the FSH directives FSH 219.12, ch. 20, 22.1(2)(b) and FSH 219.12, ch. 20, 22.1(2)(d).

Since the Southern Rockies DPS was listed in 2000, lynx habitat conditions have changed significantly due to a large-scale spruce bark beetle epidemic² that has caused substantial Engelmann spruce tree mortality. Lynx prefer Engelmann spruce – subalpine fir (spruce-fir) forests in the Southern Rockies.

¹ These comments were signed by several organizations, including Defenders of Wildlife, and individuals and can be found in the Forest Service Public Reading Room for the GMUG revised forest plan in the file named HCCA_etal_GMUG_DraftPlan_Cmts_11-24-2-21.pdf on this page: <https://cara.fs2c.usda.gov/Public/Letter/2800447?project=51806>. The Reading Room lists the author as Matt Reed, organization as High Country Conservation Advocates (HCCA), date submitted as 11/24/2021. Defenders contributed significantly to these comments, particularly wildlife sections, and we refer to them as "our comments" and cite them as "HCCA et al. 2021" in this objection.

² The spruce bark beetle is a native species to the Southern Rockies. Though climate change is likely affecting natural disturbance regimes, large-scale insect disturbance, as with high-severity wildfire, are characteristic of the spruce-fir forest type.



Colorado State Forest Service (2022) (Graph: Dan West, CSFS)

GMUG planners developed a specific plan standard intended to protect the best existing habitat. The Forest Service modified these plan components for the Revised Plan, as the FEIS explains below,

In response to public comments and additional staff review, the plan revision team made changes to the plan standard VEG S8 between the draft and final plan alternatives to better clarify the intent, applicable vegetation management activities, exceptions, and the scale of the standard’s application. ... Although the total percent allowance [of vegetation management] has been reduced from 7% in the draft alternative B to 1%, the number of acres available for timber harvest – in VEG S8-qualifying stands — has increased from approximately four hundred acres to approximately 12,600 acres. FEIS, Vol. 1 at 40.

The current Revised Plan suffers from the following problems:

- Standard FW-STND-SPEC-35 (SRLA VEG S8) would not provide the ecological conditions necessary to contribute to the recovery of the lynx in compliance with 36 C.F.R. § 219.9(b)(1). And changes made to other direction in the Southern Rockies Lynx Amendment (SRLA) would not ameliorate the new standard’s weaknesses. The standard is not reflective of essential BASI about lynx habitat requirements in the Southern Rocky Mountains, including what the Forest Service has defined as lynx habitat that the standard is intended to protect. The standard does not sufficiently protect habitat from negative impacts of vegetation management activities permitted by the standard, such as salvage logging. The standard allows too much and inappropriate types of timber harvesting and vegetation treatments.
- Standard FW-STND-SPEC-35 (SRLA VEG S8) does not provide sufficient direction to guide its implementation. The standard is not consistent with the Planning Rule’s description of plan components and agency directives that requires plan components to be written clearly and that requires components be informed by BASI. Some language in the standard is unclear, vague, and/or ambiguous. 36 C.F.R. § 219.7(e)(1)(i-v); FSH 219.12, ch. 20, 22.1(2)(b); FSH 219.12, ch. 20, 22.1(2)(d).

- The impacts analysis in the FEIS of standard FW-STND-SPEC-35 (SRLA VEG S8) does not support the 1% allowance (or 1% cap) of salvage harvest, sanitation, or hazardous fuels treatments standard; the exemption of other fuel treatments to the 1% cap; and the exceptions to the standard. The FEIS lacks clarity, especially regarding the calculation of the high-quality habitat estimate. Overall, the FEIS analysis of direct, indirect, and cumulative impacts of the forest plan is flawed; it does not present a reasonable range of alternatives, and it fails to establish an appropriate baseline from available data and information.

We appreciate that the significant structural and compositional changes to lynx habitat due to the spruce bark beetle epidemic has presented a complex situation for forest planners. We thank the Forest Service for seriously considering our comments on the Draft Plan and DEIS and making some important modifications to the Revised Plan in the preferred alternative. However, based on our review of the BASI, additional changes are necessary to adequately address the concerns detailed in our previous comments and new concerns about the new standard FW-STND-SPEC-35 (SRLA VEG S8). Given the precarious state of the Southern Rockies' lynx population and the massive changes in spruce-fir forest conditions, it is imperative that the national forests of Region 2 do everything they can to recover this fragile population by conserving the cats' habitat—especially by restricting vegetation management in essential and recoverable habitat.

A. The GMUG's revised land management plan does not provide the ecological conditions necessary to contribute to lynx recovery in violation of 36 C.F.R. § 219.9(b)(1).

In the Southern Rockies, lynx primarily utilize high-elevation areas dominated by moist spruce-fir forest; though they use aspen and lodgepole, they do so a lesser extent. Ivan et al. 2012. Lynx depend on snowshoe hares for food. Snowshoe hares prefer the woody understory (dense horizontal cover) spruce-fir forests provide because this habitat offers hiding cover and because hares eat conifer needles, twigs, and tree bark. Lynx also prey on red squirrels when snowshoe hares are less abundant. Threats to lynx and lynx habitat include climate change, vegetation management, habitat fragmentation, incidental trapping, recreation, minerals and energy exploration and development, illegal shooting, forest and backcountry roads and trails, and livestock grazing. ILBT 2013.

The SRLA included standard VEG S6, which significantly restricted logging in what was at the time considered the best lynx habitat on the Region 2 forests, defined as: multi-story mature or late successional forest,³ old multistory structural stage,⁴ and winter snowshoe hare habitat.⁵ The "VEG S6

³ This stage is similar to the old multistory structural stage (see below). However, trees are generally not as old, and decaying trees may be somewhat less abundant. (SRLA definition 29).

⁴ Many age classes and vegetation layers mark the old forest, multistoried stage. It usually contains large old trees. Decaying fallen trees may be present that leave a discontinuous overstory canopy. On cold or moist sites without frequent fires or other disturbance, multi-layer stands with large trees in the uppermost layer develop. (SRLA definition 31)

⁵ Winter snowshoe hare habitat consists of places where young trees or shrubs grow densely – thousands of woody stems per acre – and tall enough to protrude above the snow during winter, so snowshoe hare can browse on the bark and small twigs (LCAS). Winter snowshoe hare habitat develops primarily in the stand initiation, understory reinitiation and old forest multistoried structural stages. (Definition 52)

stands” receive the highest level of protection with exceptions for cutting only around human infrastructure, for research, for incidental removal during salvage operations, or when tree harvest is specifically employed for uneven-aged management to result in multi-story attributes. Standard VEG S6 caps cutting VEG S6 stands to not more than 0.5% per forest.⁶ However, the widespread tree mortality substantially diminished the standard VEG S6 stands, the best of the best “pre-beetle” habitat.

On the Rio Grande National Forest (RGNF), adjacent to the GMUG, biologists and timber staff recognized identifying and protecting lynx habitat when developing salvaging logging projects and offering timber sales was no longer possible under the existing set of SRLA VEG standards and guidelines. The RGNF finalized its revised land management plan in 2020 and commenced a study as the planning process began to assess the impacts of the large-scale bark beetle-induced tree mortality on lynx. RGNF staff enlisted Dr. John Squires, the foremost lynx expert in the country with the Forest Service’s Rocky Mountain Research Station, to lead the study (the Squires study). The Squires study goals were to,

both advance our ecological understandings of how Canada lynx respond to insect-related disturbance as well as provide land managers the necessary information to develop on-the-ground silviculture/forest management that addresses timber salvage and lynx conservation at multiple spatial scales (landscape- and stand-level). Squires 2018.

Researchers found that lynx within the RGNF were still largely using the same pre-beetle high quality habitat area (i.e., VEG S6 stands) more than other areas in the forest. Squires et al. 2020. Though the structural forest habitat conditions had changed, these areas contained structural elements that now make these areas the “best of the best” habitat in the “post-beetle” forest. Biotic features⁷ that lynx selected for included:

- Landscape scale:
 - Large, dead trees in both winter and summer
 - Lack of Douglas-fir, which lynx avoided in winter and summer
 - Relatively higher levels of Engelmann spruce in the canopy and subalpine fir in the subcanopy in winter
 - Presence of aspen in winter
 - Lower levels of Engelmann spruce in the canopy and higher in the subcanopy in the summer
- Home range scale:
 - High levels of horizontal cover
 - High snowshoe hare density
 - High live Engelmann spruce in the canopy
 - Large, live subalpine fir trees at high densities
 - Large, dead trees
 - High densities of Engelmann spruce trees

⁶ Southern Rockies Lynx Amendment, SRLA Implementation Guide: Vegetation Management. 2008; US Fish and Wildlife Service. Biological Opinion for the Southern Rocky Lynx Amendment. July 25, 2009.

⁷ Specific values can be found in Squires et al. (2018). Habitat Relationships of Canada Lynx.

- Large, dead Engelmann spruce and subalpine fir both strongly selected in summer
- Fine-scale movement paths with more dead canopy cover than expected

These are the key ecological characteristics that comprise the best available habitat for lynx in Southern Rocky Mountain forests with high Engelmann spruce tree mortality. Appendix 12 in the GMUG Revised Plan cites Squires et al. (2020) as the science supporting the high-quality habitat definition in standard FW-STND-SPEC-35 (SRLA VEG S8). The FEIS, Vol. 1 explains the Squires study and findings starting on page 228.

1. Standard FW-STND-SPEC-35 (SRLA VEG S8) will not protect the best habitat in spruce bark beetle-impacted forests.

Standard FW-STND-SPEC-35 (SRLA VEG S8) leaves substantial holes in what should be a safety net that securely protects the best post-beetle lynx habitat on the GMUG when VEG S6 stands are absent or significantly diminished. The standard reads,

Salvage harvest, sanitation, or hazardous fuels treatments may occur in high-quality lynx habitat that does not qualify for the Southern Rockies Lynx Amendment VegS6 criteria due to overstory mortality in up to 1 percent of mapped lynx habitat. This applies to all mapped lynx habitat on the GMUG and is not calculated at a Lynx Analysis Unit scale. Other treatment types are not subject to VEG S8 but must adhere to all other applicable Southern Rockies Lynx Amendment direction.

We provide details about the problems with the standard below.

a) The Revised Plan must protect large, dead trees at high densities and connectivity habitat.

The set of criteria defining “high-quality” habitat in standard FW-STND-SPEC-35 (SRLA VEG S8) leaves out key habitat characteristics identified by Squires et al. (2020) as the best lynx habitat in the absence or scarcity of VEG S6 stands.

VEG S8 states that high-quality habitat criteria in the Revised Plan (at 49) include:

- 1) Overstories predominantly of dead Engelmann spruce and subalpine fir, or either species, with a sub-canopy layer dominated by subalpine fir, or a combination of either Engelmann spruce or aspen, or both (*see plan appendix 12, Footnotes Regarding Best Available Scientific Information.*)
- 2) Total live overstory canopy cover less than or equal to 40 percent*, and
- 3) Understory horizontal cover [as defined by the SRLA] density from ground level to 3 meters above ground level is greater than or equal to 45 percent during winter foraging conditions for snowshoe hares.

**When total live overstory canopy exceeds 40 percent, but criteria 1 and 3 are still met, refer instead to existing Southern Rockies Lynx Amendment VEG S6 direction, plan appendix 4.*

The standard includes a reference for the intended scientific rationale for the standard, “*for more supporting science and background on this standard, as well as plan appendix 12, Footnotes Regarding Best Available Scientific Information.*” Plan at Appendix 12, 12-3. Appendix 12 cites Squires et al (2020) as the science.

Squires et al. (2020) also emphasized the importance of protecting dead canopy cover and conifer subcanopy for connectivity habitat.

Canada lynx exhibited clear patterns of selection at our finest scale of selection along movement paths (fourth-order selection). Male and female lynx, regardless of season, tended to move toward areas with more dead canopy cover than expected given random availability along movement paths (Figs. 3 and 4). This movement pattern was consistent with selection at the broader landscape- and home-range scales, and reinforced the importance of beetle-impacted areas for Canada lynx use. Similarly, most females and males exhibited selection along movement paths for areas with abundant subalpine fir in the subcanopy during the winter.

The set of high-quality habitat criteria in the standard is missing the importance of *large* dead trees at *high densities* underlined in the passages above. These habitat attributes must also be protected with strong direction in the Revised Plan via incorporation into a standard. We appreciate the Forest Service strengthening snag direction in the Revised Plan. Additionally, the management approaches in FW-MA-SPEC-35.c also include important habitat characteristics the plan must protect. These characteristics of the best lynx habitat that don’t yet meet the definition of the VEG S6 stand need to be protected with inclusion in a standard, not with management approaches, which is optional plan content. These necessary components for a standard include:

- Horizontal cover: Areas with greater than 45 percent are considered the highest quality snowshoe hare and lynx habitat.
- Understory conifers: Preserve understory, particularly subalpine fir and Engelmann spruce, in the sub-canopy.
- Size and basal area of dead trees: Sub-canopy development is reduced by salvage; thus, snag retention is most important in areas with high amounts of live understory.
- Shade retention: Dead trees and remaining live trees should be retained strategically to provide shade protection for developing understory trees.
- Retain and protect live subalpine fir from incidental damage.
- Plant subalpine fir post-harvest.
- Canopy cover.

See Squires et al. (2018a and b) for the specific values associated with these attributes and these are incorporated in full herein. The failure to require these lynx habitat characteristics in a standard significantly weakens the habitat protections provided in standard FW-STND-SPEC-35 (SRLA VEG S8), failing to meet the requirements of the 36 C.F.R. § 219.9(b)(1) and the agency’s duties under the ESA.

b) The Best Available Scientific Information demonstrates that salvage harvest should not be conducted in high-quality habitat.

Text at the bottom of the standard refers to Appendix 12 in the Revised Plan for the BASI. The best available science referenced in the GMUG Revised Plan warns against salvage logging in lynx habitat, and by extension snowshoe hare habitat. The plan's Appendix 12 at 12-3 states,

Based on snowshoe hare pellet count data collected in 2018, 2019, and 2020 in spruce stands affected by the spruce beetle epidemic, mean snowshoe hare density was highest in unmanaged sites followed by previously managed sites, and lowest in salvage sites. Unmanaged and previously managed stands both contained dead overstory and live advanced regeneration, while the dead overstory had been removed from the salvage areas. Comparisons between treatments were not statistically different in 2018 and 2019. In 2020, mean hare density in salvage sites was significantly different (lower) compared to unmanaged and previously managed sites. The Science Team interpretation states, "Based on these variable results, exploration of options to mitigate impacts to dense horizontal cover during salvage should be considered. It is critical to continue to steer salvage away from high-quality Canada lynx habitat." (The Spruce Beetle Epidemic-Aspen Decline Management Response Project (SBEADMR) Science Team Monitoring Questions, Results, and Interpretation from January 2022). (emphasis added)

Squires et al. (2020) cited a range of scientific papers that reported negative impacts of the practice to imperiled species and their own findings. Below are excerpts from Squires et al. (2020, and references therein):

- [S]alvage logging can reduce animal species richness, leading to substantial changes within ecological communities (Thorn et al., 2018), including reductions in populations of some small mammals (e.g., red-backed vole (*Myodes gapperi*); Sullivan et al., 2010).
- With respect to key predator and prey species in the boreal forest, Thomas et al. (2019) demonstrated that salvage logging can alter food webs over the short term (< 25 yr) by reducing snowshoe hare (*Lepus americanus*) abundance, which in turn directly influenced the presence of Canada lynx (*Lynx canadensis*) and coyotes (*Canis latrans*).
- Salvage logging in disturbed landscapes can reduce biodiversity and therefore may be viewed as inappropriate in protected areas (Thorn et al., 2018). However, complex socio-economic interactions between natural disturbance processes and the desire to promote timber salvage often result in a cascade of ecological and environmental consequences that are poorly understood in actively managed landscapes (Leverkus et al., 2018).
- The fact that Canada lynx selected higher levels of beetle-killed trees at the landscape and home range scales and exhibited a positive functional response for beetle-killed trees, creates a management challenge relative to tree salvage. Canada lynx also selected home ranges with abundant live spruce-fir trees within beetle-impacted landscapes; areas selected by lynx within

home ranges supported approximately 2.5 times the number of live subalpine fir trees from 3 to 8.9 in. DBH (7.6–22.6 cm) compared to areas randomly available.

- Across spatial scales, we also demonstrated that Canada lynx select forest conditions, such as large-diameter beetle-killed trees in areas of abundant spruce-fir understory and live subalpine fir trees, that potentially conflict with tree salvage depending on implementation strategies and prescriptions. Both lynx and hare depend on the high horizontal cover provided by spruce-fir regeneration, which increase in areas of high tree mortality.
- Ecologically, [] interventions are outside the range of natural variation in boreal forests of the Southern Rockies and are only practical in areas of particularly high resource or infrastructure value, or to promote human safety (Pelz et al., 2015).

This information strongly indicates that salvage logging should not be allowed in high-quality habitat at all. Given the precarious state of the Southern Rockies lynx population, it is evident that anything less, especially as weak as the proposed standard for protecting high quality habitat is, would not maintain or restore the ecological integrity in lynx habitat. It also fails to comply with the ESA's requirements of conserving and recovering the species and falls far short of aligning with the best available science's identification of habitat requirements that are needed to advance lynx recovery and conserve the species.

c) The exemption of treatment types that are not salvage harvest, sanitation, or hazardous fuels treatments undermines high-quality habitat protection.

The limit imposed by standard FW-STND-SPEC-35 (SRLA Veg S8) applies only to salvage, sanitation, and fuel reduction projects, "Other treatment types are not subject to VEG S8...". Plan at 49. This means that other types of treatment, such as commercial sales of live trees or pre-commercial thinning, would not be subject to the cap in this standard, and additional adverse impact to lynx habitat could result. We can't be confident the standard will provide meaningful protection to the highest-quality habitat if other treatment types are allowed to occur unrestricted. The exemption undermines standard FW-STND-SPEC-35 (SRLA Veg S8).

d) The exceptions to FW-STND-SPEC-35 (SRLA VEG S8) undermine protecting high-quality habitat.

With the exception of a set of vegetation treatment types from the standard such as pre-commercial thinning or commercial sales of live trees, a significant amount of high-quality habitat could be destroyed or degraded under FW-STND-SPEC-35 (SRLA VEG S8), despite other SRLA vegetation standards in place.

These exceptions in full for which the VEG S8 cap would not apply are:

- 1) Vegetation management designed with the primary objective to maintain or restore lynx habitat,

- 2) the removal of hazard trees immediately proximal to system roads and other infrastructure, and
- 3) sanitation treatment of blowdown to prevent or minimize epidemic levels of insect infestations.
- 4) *For fuel treatment projects within the wildland-urban interface, see the existing Southern Rockies Lynx Amendment guideline VEG G10 and definition of wildland-urban interface as applied in the Southern Rockies Lynx Amendment (plan appendix 4).*

Exceptions 1 and 3 negate the purpose of the standard (to provide protection to high quality lynx habitat where SLRA VEG 6 no longer applies due to changed conditions) and do not result in a standard that would maintain or restore ecological integrity of lynx habitat. Relatedly, the standard falls short of the ESA's requirements of conserving and recovering the species and does not align with the best available science's identification of habitat requirements that are needed to advance lynx recovery and conserve the species.

(1) Exception #1 is overly broad, and the Forest Service has documented no science to support its inclusion in standard FW-STND-SPEC-35 (SRLA VEG S8).

This exception is a loophole where a range of vegetation management projects could be justified as maintaining or restoring lynx habitat even though the best available science calls for no vegetation activities in habitat that has been affected by the bark beetle when it would fall under VEG S8 because it was no longer covered by VEG S6. The language of the exception is too vague to provide sufficient management direction.

The last section of the standard states that appendix 12 in the plan includes BASI to support the elements of the standard. There is no science referenced in appendix 12. The only plan document that cites some science relating to the exception is in Volume 3 of the FEIS, Response to Comments. FEIS, Vol. 3 states on page 296,

Based on public input including supporting science cited by the public for the Draft EIS and other best available scientific information (e.g., Squires et al. 2020) – provides recommendations for managing lynx habitat in beetle-killed forests; Interagency Lynx Biology Team 2013 – provides a scientific basis supporting the Southern Rockies Lynx Amendment direction; Maletzke et al. 2008 – encourages maintaining or creating sufficient understory cover to support high densities of snowshoe hares as foraging habitat for lynx; Vanbianchi et al. 2017 – highlights importance of forest structure that allows lynx to use burned areas and other fire management recommendations to ensure heterogeneity is retained within the footprint of large fires), all original Southern Rockies Lynx Amendment standards are now applied to all action alternatives in the Final EIS.

None of the articles cited above studied vegetation management impacts on lynx habitat restoration and maintenance or support that any such activities should take place.

Maletzke et al. (2008)'s paper found higher snowshoe hare densities in areas of higher understory cover in their study on lynx preferred hunting grounds. They did not study how vegetation management could maintain or create understory cover, as suggested by the paragraph above. Rather, they merely included management recommendations based on their findings, which do not align with what the Forest Service is proposing, stating,

To maximize the habitat value of forest stands as foraging habitat for lynx, we encourage forest managers to maintain or create sufficient understory cover to support high densities of snowshoe hares, which can be accomplished in a variety of ways, including deferring or avoiding precommercial thinning, precommercial thinning with reserves (Griffen and Mills 2007), curtailing brush and other understory removal, and planting regeneration stock at high densities.⁸

This list highlights deferring or avoiding precommercial thinning (PCT), an activity that is not addressed or otherwise covered by VEG S8. The Griffin and Mills (2007) study, cited by Maletzke et al. (2008) tested a PCT alternative.

For the next part of the list, if the Griffin and Mills (2007) study is reviewed, the purpose of this cite by Maletzke et al. (2008) was to develop an alternative to precommercial thinning, PCT-R or "precommercial thinning with reserves,"—where "20% of the total stand was retained in uncut quarter-hectare patches." PCT is known to reduce snowshoe hare occupancy, and the alternative may maintain a higher abundance of snowshoe hares in areas than standard PCT treatments, thus reducing negative impacts of the practice on lynx habitat. Griffin and Mills (2007) concluded,

Where high snowshoe hare abundance is a goal, standard PCT should be avoided. The PCT-R retains some natural variation in young stand structure, and may maintain snowshoe hare abundance at levels comparable to unthinned stands, at least in the short term. It is possible to use PCT-R treatments other than the one we used; we suggest that PCT-R should retain a spatially well-distributed selection of the very densest patches of saplings.

Their findings do not indicate that PCT or PCT-R maintains or restores lynx habitat, rather that PCT-R is *less* deleterious to snowshoe hares than PCT without providing untreated reserve areas.

Vanbianchi et al. (2017 at 2382) studied lynx use of post-fire burn areas, and they found that,

Lynx used burned areas as early as 1 year postfire, which is much earlier than the 2–4 decades postfire previously thought for this predator. These findings are encouraging for predator persistence in the face of fires, but increasingly severe fires or management that reduces postfire residual trees or slow regeneration will likely jeopardize lynx and other predators. Fire management should change to ensure heterogeneity is retained within the footprint of large fires to enable viable predator populations as fire regimes worsen with climate change.

⁸ Planting is not relevant to the standard and not discussed further.

In the discussion section, Vanbianachi et al. (2017) speculated about vegetation management to protect lynx habitat from uncharacteristic wildfires. This was not the subject of their research and thus this study is not best available science.

(2) Exception #2 does not provide sufficient management direction.

Exception #2 does not limit the distance from the road or other infrastructure within which hazardous tree removal is allowed. There must be sideboards for the standard to meet the requirements for standards under the 2012 Planning Rules and to provide clear direction for implementation in a way that would be limited if the standard is to have any value in protecting high quality lynx habitat that is no longer protected under SLRA VEG S6.

(3) The Forest Service has documented no science to support the inclusion of Exception #3 in FW-STND-SPEC-35 (SRLA VEG S8).

The BASI demonstrates that sanitation treatments for blowdowns would do more harm than good.

B. Standard FW-STND-SPEC-35 (SRLA VEG S8) does not provide clear direction to assure that the standard's provisions will be properly applied in project design and execution and that the standard, ultimately, protects the best lynx habitat in high spruce mortality areas that don't meet the definition of VEG S6 stands. This lack of clarity in plan direction does not, FSH 1909.12, ch. 20, 22.1(2)(b), and FSH 1909.12, ch. 20, 22.1(2)(d).

We anticipate the Forest Service will not be able to accurately calculate the cumulative total extent of vegetation treatments in high-quality habitat areas and will not be able to adhere to the 1% cap on salvage harvest, sanitation, and fuels management. The application of the standard at the forest scale; the exemption of vegetation management types beyond salvage harvest, sanitation, and fuels; vague and ambiguous language in the exceptions; and a confusing impacts analysis do not provide confidence that the standard and the aggregate plan components will indeed protect: high-quality habitat, or the best habitat that includes home range attributes described by Squires et al. (2020), or the ecosystem characteristics that provide the best lynx habitat. It appears that the sum of these factors could lead to a net loss of the highest quality habitat for lynx.

The plan indicates that the intent of standard FW-STND-SPEC-35 (SRLA VEG S8) is “to retain existing high-quality habitat while encouraging vegetation management in areas where habitat quality for lynx and snowshoe hare can be improved in the long-term.” Plan at Appendix 4-11. The Forest Service acknowledges this, stating in FEIS, Vol. 1 at 40. (See also BA at 94, 96 for confirmation),

The FEIS analysis concludes that the 1% allowance cap currently exceeds total modeled high-quality habitat in areas suitable for timber production in stands where VEG S8 would be applied, given forest conditions at the time of this decision. Therefore, per current forest

conditions, active management could be conducted on the entirety of this area without restriction per this alternative⁹...

This raises significant questions. Why did the Forest Service develop the standard if it is not going to assure any high-quality lynx habitat will be protected? Have we misinterpreted the direction provided by the standard and misunderstood the FEIS? If so, the Forest Service needs to modify and clarify the language in the standard and the explanations of the standard's impacts in the FEIS and BA to illustrate how the Revised Plan would actually protect high-quality habitat. The specific direction in plan components must be operational for Forest Service staff charged with executing vegetation management projects. As it stands, this is confusing and concerning.

C. The FEIS is not fully compliant with the National Environmental Policy Act with respect to the Canada lynx.

The FEIS did not provide a range of reasonable alternatives. It did not consider and analyze an alternative that included the management approaches in FW-MA-SPEC-35.c (bullets 2-6) as plan standards.

The FEIS failed to examine and explain how the Revised Plan will provide the necessary ecological conditions to contribute to lynx recovery as required by 36 C.F.R. § 219.9(b)(1). The SRLA was designed to help limit threats to lynx in the Southern Rockies, not eliminate them. The FEIS didn't analyze the full effects of standard VEG S8. The FEIS failed to examine the impacts of calculating the 1% harvest/treatment allowance of high-quality habitat in mapped habitat at the entire forest scale versus the lynx analysis unit scale. The FEIS failed to examine the impacts of VEG S8's harvest/treatment allowance, exemptions, and exceptions to lynx and lynx habitat (e.g., high-quality habitat). In fact, it stated that the impact may be that standard VEG S8 won't protect any high-quality habitat at all, as stated in FEIS, Vol. 1 at 40,

Comments on the draft plan from timber industry representatives and a portion of the public were concerned that restricting salvage harvest in lynx habitat would have a large impact on timber production. Public comments also advocated for no salvage or other harvest in lynx habitat, so a "no salvage" option was analyzed in the draft and final plan alternative D. In light of these public comments, the preferred alternative VEG S8 now reflects more flexibility for both the total amount of allowable active vegetation management and more exceptions, while also restricting a broader range of vegetation management activities than just salvage harvest. The FEIS analysis concludes that the 1% allowance cap currently exceeds total modeled high-quality habitat in areas suitable for timber production in stands where VEG S8 would be applied, given forest conditions at the time of this decision. Therefore, per current forest conditions, active management could be conducted on the entirety of this area without restriction per this alternative, with additional acres under the cap that could be harvested outside of areas suitable for timber production. Nonetheless, the preferred alternative VEG S8, in combination with

⁹ It is not clear what alternative is referred to here. In this paragraph from which this quote is taken, only alternative D is mentioned, but it would not allow any treatment in high-quality lynx habitat. FEIS, Vol. 1 at 41.

existing area designations and Revised Plan management area allocations, would protect approximately 68 percent (26,000 acres) of all currently estimated VEG S8-qualifying high-quality habitat (38,000 acres). (emphasis added)

How the Forest Service estimated the area of high-quality habitat was not clear from the explanation in the FEIS. This matters because without a figure of high-quality habitat within a ballpark of reliability, it may not be possible to determine when the 1% cap in FW-STND-SPEC-35 (SRLA VEG S8) is met or to keep track of activities in order to determine when that threshold is being approached. Page 214 of the FEIS, Vol. 1 states that “[a]ctual extent of applicability will depend upon field validation at a project-level.” It was confusing as to whether the estimate was based on dense horizontal cover, as Figure 10, FEIS, Vol. 1 at 215 implies, or dense overstory, as Figure 11 implies, FEIS, Vol. 1 at 237, or these inputs and live overstory as Figure 13 implies, FEIS, Vol. 1 at 238. We understand field identification of high-quality stands is essential, but the Forest Service needs have an estimate of the high-quality habitat baseline to calculate the cumulative area of vegetation management projects (salvage, sanitation, and fuels treatment projects) and for this standard to have value. The standard does not provide clear guidance to direct the GMUG’s line officers on how to avoid breaching the 1% cap when planning and executing salvage and sanitation harvest or hazardous fuels treatment projects over time. It also fails to provide a baseline for where in this 1% cap threshold the GMUG currently stands as a result of ongoing activities that are occurring in lynx habitat.

The cumulative effects analysis is inadequate. The lynx cumulative effects analysis in FEIS, Vol. 1 begins at 248, stating,

The lynx analysis units within the GMUG National Forests plan area were considered as the cumulative effects area for this analysis. This includes accounting for reasonably foreseeable actions and effects on adjacent non-Federal lands and considering other adjacent land management plan influences on the GMUG National Forests.

Yet, VEG S8 is intended to be applied at the forest-wide scale. There is no discussion of the Spruce Beetle Epidemic & Aspen Decline Management Response impacts to lynx habitat and high-quality habitat or other past and planned vegetation management projects in mapped lynx habitat or areas where the Forest Service has estimated high-quality habitat exists.

The Southern Rockies lynx population may not be doing well. The Forest Service BA for the GMUG Revised Plan states, “an estimated 150-250 Canada lynx are in Colorado.” Sufficient scientific information does not currently exist to estimate Colorado’s lynx population to our knowledge. The BA cites no scientific source for the estimate. We are not certain, but the estimate may have come from flawed conjecture by Colorado Parks and Wildlife (CPW) based on results of its “Canada lynx monitoring in Colorado” study, reported in CPW’s annual research reports for mammals. Colorado Parks and Wildlife 2020, 2021, and 2023. CPW provided the following estimate to USFWS for the U.S. Fish and Wildlife Service’s 2017 Species Status Assessment for the lynx, which stated, “[t]he current size of the resident lynx population in Colorado is unknown but thought to number between 100 and 250.” USFWS (2017 at 45). CPW repeated that figure in a 2019 press statement that says, “the lynx population is stable in the core area of the San Juan Mountains at about 150-250.” Colorado Parks and Wildlife 2019. We

appreciate CPW's efforts to conduct long-term monitoring of lynx. However, the study's sample size is too small to provide reliable state-wide population and population trend estimates. Karl et al. 2002. CPW's lynx monitoring offers essential information about the presence and distribution of lynx in the state and can be conducted with limited resources. We note that the state agency's monitoring reports in the wildlife research project summary reports have not included a state lynx population estimate.

Importantly, the lynx population in the Southern Rockies may be worse off than the 100-250 individuals provided in CPW communications. Squires et al. (2020) studied the impacts on lynx of the spruce bark epidemic, which began sweeping through the Engelmann spruce – subalpine fir (spruce-fir) forests in the Southern Rockies, the forest type most preferred by lynx in the region, at about the time the species was listed under the ESA. The key paper reporting the Squires et al. (2020 at 3) results, stated,

From 2015 to 2017, we captured 10 adult (> 3 years old) Canada lynx (6 males and 4 females) in box traps (Kolbe et al., 2003) that were set on travel paths identified by snow tracks during winter months (December to March); traps were checked every 24 h. Our sample of Canada lynx included most individuals present on the study area, based on our field observations. (emphasis added)

In a presentation for an RGNF meeting that provided an update on the study in 2018, one of the “take-home” messages was that “... the species in Colorado is currently in the “emergency room.” Squires et al. 2018.

Suggested Improvements

- Delete FW-STND-SPEC-35 (SRLA VEG S8).
- Designate all high-quality lynx habitat as unsuitable for timber production.
- Develop a standard to prohibit vegetation treatment in the high-quality lynx habitat except for the situations stated at Plan Appendix 4 at 5 (i.e., the current exceptions for the cap on treatment under FW-STND-SPEC-35 (SRLA VEG S8)).
- Add a standard that requires protection of understory trees in all treatments in lynx habitat.
- Also convert bullet points 2-5 (listed below) in the current FW-MA-SPEC-35.c to standards and reword to comply with the requirements:
 - Understory conifers: Preserve understory, particularly subalpine fir and Engelmann spruce, in the sub-canopy.
 - Size and basal area of dead trees: Sub-canopy development is reduced by salvage; thus, snag retention is most important in areas with high amounts of live understory.
 - Shade retention: Dead trees and remaining live trees should be retained strategically to provide shade protection for developing understory trees.
 - Retain and protect live subalpine fir from incidental damage.

- Plant subalpine fir post-harvest.
- Canopy cover.
- Ensure that plan components for protection of lynx habitat apply to all treatment types.
- Designate the snowshoe hare as a focal species for monitoring.

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II. Uncompahgre Fritillary Butterfly (*Clossiana improba acrocne*)

We raised issues related to the Uncompahgre fritillary butterfly (UFB) in our comments on the draft plan and DEIS. HCCA et al. 2021 at 124-147.

The USFWS listed the Uncompahgre fritillary butterfly (UFB) as endangered in 1991. 56 Fed. Reg. 28712 (June 24, 1991). At that time, the Service believed collection was the top threat to the species; others included trampling of the butterflies and their snow willow habitat by humans and livestock. The 2009 5-year review for UFB set the degree of threat to moderate and recovery potential at high, describing climate change as a “potential” threat and deemphasizing livestock and human trampling as threats. USFWS 2009. The 2018 5-year review described climate changes as the biggest threat to the UFB and listed its recovery potential as low and, at that time, did not consider human recreation and livestock use as population-level threats. USFWS 2018. The 2023 5-year review, new since the GMUG’s draft plan was issued for comments, similarly placed recovery potential for the species as low due to climate change, but also stated that human recreation, including hikers with dogs, on trails near and adjacent to colonized areas has increased and sheep have been degrading habitat by eating and bedding in colonized areas. USFWS 2023.

New information, a paper by Williams and Alexander (2023), indicated there could be management responses to climate change despite its increasing negative impacts on the UFB and habitat. Dr. Keven Alexander is a national expert on the species and has monitored UFB colonies for 20 years. The paper reported that precipitation and temperature changes alter the timing of nectar sources and facilitate the encroachment of lower elevation plants into important alpine plants for the species, including snow willow. The authors stated, “colonies might persist through low-level migration and “temporal leakage” at these study sites, suggesting this data could also be used to manage suitable habitat for metapopulations of *B. i. acrocne*.” Williams and Alexander 2023 (unpaginated), citing Monroe et al. 2016. In another paper published between the draft plan comment closure and issuance of the final

plan, Ripple et al. 2022 (supplemental materials) recommended a protective reserve for the UFB. Williams and Alexander (2023) concluded with the following recommendations:

With formulas of predicted changes in the phenological timing of alpine communities and micro- or macroclimate data, we can further model climate related extirpation or extinction risk of *B. i. acrocnema* to adequately manage for in the short term and prioritize for the long-term conservation of alpine ecosystems. Protecting current habitat from increasing bare ground due to human recreation or livestock grazing are critical management actions to preventing immediate declines in *B. i. acrocnema* abundance.

The paper's findings emphasize the need for strong habitat protections that prohibit humans, dogs, and livestock disturbance in occupied and suitable unoccupied UFB habitat. Unfortunately, the revised plan does not provide sufficient protections from these threats.

A. The revised plan does not provide the ecological conditions necessary to contribute to the recovery of the Uncompahgre fritillary butterfly in violation of 36 CFR 219.9(b)(1) and also fails to comply with 219.9(a)(2)(ii).

Under 36 CFR 219.9(b)(1) the Forest Service is required to "contribute to the recovery of federally listed and endangered species. . . ." The Forest Service is also required to ensure that the plan contains components that would maintain or restore rare aquatic and terrestrial plant and animal communities. 36 CFR 219.9(a)(2)(ii). The plan components do not, however, meet these mandates because they do not sufficiently protect UFB and its habitat from livestock and recreation impacts. These impacts are becoming greater threats to the species and are readily manageable, allowing for their impacts to be avoided and prevent them from becoming even greater threats to the species over the course of the Plan's applicability.

We greatly appreciate that the Forest Service changed guideline FW-GDL-SPEC-27 to a standard, FW-STND -SPEC-27, in the revised plan to better protect the Uncompahgre fritillary butterfly (UFB), a rare species, from recreation impacts. However, FW- STND -SPEC-27 does not meet the requirements set forth by 36 CFR 219.7(e)(1)(iii), which requires standards to be "mandatory constraints," containing the modal verbs "shall" or "must" confirming an obligation. The last sentence of FW- STND -SPEC-27, "[I]ivestock trailing through occupied UFB habitat should conform to the 2008 on-file biological assessment with the U.S. Fish and Wildlife Service, or as superseded in subsequent consultation" (emphasis added) does not comply because the "should" enables departure from the standard. FSH 1909.12 Zero Code at 05.1 - Exhibit 01 ("Standards . . . 2. Are stated in a precise manner, and with mandatory or prohibitive wording, such as "must," "shall," "must not," "may not," "shall not," or XX is not allowed to be authorized."). For reasons stated herein, however, and even if the language is made mandatory, the exception to allow livestock trailing through UFB habitat needs to be stricken.

Domestic sheep movement through UFB snow willow habitat must not be permitted. This is a threat to the species that the Forest Service can prevent. Given the impacts of climate change and the best available science discussed herein, the agency should take all actions possible to protect the UFB and its habitat.

The FEIS, Vol. 1 at 288 states,

The Forest does not permit livestock grazing in occupied Uncompahgre fritillary butterfly habitat. However, sheep trailing overlaps one known colony area. Sheep trailing typically occurs after the Uncompahgre fritillary butterfly flight season, and the sheep trail through the colony over a period of a few days. As grazing leases cycle through permit renewal, revised management direction in all action alternatives would be taken into consideration, addressing any negative impacts associated with grazing. FW-STND-SPEC-27 would prohibit direct impact to this habitat per its requirement to avoid habitat-disturbing activities in occupied Uncompahgre fritillary butterfly snow willow habitat, and directing livestock trailing through occupied habitat to continue to conform to the on-file biological assessment and concurrence with the U.S. Fish and Wildlife Service.

Minimal impacts from the livestock grazing program to the Uncompahgre fritillary butterfly may, however, occur. (emphasis added)

Enabling sheep trailing after flight season offers no protection at all. UFBs would also be at risk to this threat regardless of the period in their life cycle. Domestic sheep can trample, bed on, and eat butterfly host plants at the egg, larval, and chrysalis stages. Additionally, UFBs are sedentary in nature, have weak flying ability, and tend to fly low to the ground (Uncompahgre Butterfly Recovery Team 1994), making flyers susceptible to sheep impacts. Climate change may be shifting the timing when nectaring plants flower (See Williams and Alexander 2023) and could shift the timing of the UFB life cycle.

The USFWS's 2023 5-year review for the species stated that the threat of domestic sheep in at least one colony—25% of the GMUG's population—is increasing, stating,

Domestic sheep trailing and especially bedding on UFB habitat could affect the butterfly by degrading its habitat. Sheep were observed on UP in past years since 1990 but appeared to have just trailed through there within a day or two. Nectar sources were eaten by past sheep grazing on UP, which could impact energy levels for UFB flying and mate seeking (Donohue and Alexander 2023). Immediate or lingering population impacts were not detected in subsequent and recent years, but it is hypothesized that annual sheep grazing at UP prior to 1980 could have influenced the small numbers or absence of the UFB there in the 1980s and could have influenced genetics at UP [Uncompahgre Peak] (Monroe et al. 2016). After a few years of no sheep grazing, a large, but currently unknown, number of sheep were also grazed on UP in 2023 (O. Wilmot, personal communication, July 25, 2023). They knocked over population monitoring transect stakes and flags, but the habitat and population abundance impact to the UP sub-colonies is currently unknown. A number of sheep were observed laying down on the colony, so it appears they were not being trailed through rapidly. USFWS 2023 at 4

The Forest Service cannot continue to allow livestock in the habitat of this critically imperiled small-range, very small-population species with a very large degree of instability among colonies. See USFWS 2023 at 2-4.

The new science discussed at the beginning of this section emphasizes the need for the Forest Service to be proactive in managing recreational impacts on the species. The Plan is also clear that the Forest Service is anticipating recreation to increase over the course of the next decade and continue to place additional stresses on habitat and ecological integrity. An additional standard is needed to address this reasonably foreseeable increasing threat to UFB and its habitat.

In our comments on the draft plan and DEIS, we recommended changing guideline FW-GDL-SPEC-19 to a standard, which would provide greater certainty that the UFB would be protected from disturbance to its habitat. The Forest Service chose not to develop the guideline into a standard and changed the language to make it even weaker. Below are both the draft plan and revised plan language.

Draft Plan version:

FW-GDL-SPEC-19: To maintain viable populations of at-risk species, particularly in alpine habitats, the Forest Service should limit use (motorized or non-motorized, foot, or pack stock traffic) to designated routes (seasonally or in limited areas, not Forestwide); implement seasonal closures on recreational use over limited areas; limit activities that require special use permits; and/or implement other such temporary or limited-area measures as needed to reduce impacts of recreation and forest use. (emphasis added)

Final Revised Plan version:

FW-GDL-SPEC-19: To maintain viable populations of species of conservation concern and contribute to recovery of federally listed species that are negatively affected by recreation and forest use, the Forest Service should manage human disturbance in pertinent habitats. Tools for managing use include restricting use (motorized or non-motorized, including foot or pack stock traffic) to designated routes where appropriate; implementing seasonal recreation closures; and/or stipulating reauthorizations and new authorizations of pertinent special use permits. (emphasis added)

The word “limit” in the draft plan guideline provides at least some management direction; the word “manage” in the final revised plan is vague and ambiguous. Restricting use might not mean limiting it under the final Plan’s guideline, as restriction is only a “tool.” In any case, it’s unclear how this guideline would be followed by line officers and other Forest Service staff. The word “manage” in the guideline provides no constraint on decisionmaking as required by 36 CFR 219.7(e)(1)(iv).

Accordingly, the Plan’s approach for this species is not only contrary to the Planning Rule, but also fails to comply with the ESA’s duty to conserve and recover listed species (16 U.S.C. § 1536(a)(1)).

B. Guideline FW-GDL-SPEC-19 does not provide clear, unambiguous direction and, therefore, violates of 36 CFR 219.7(e)(1), FSH 1909.12.22.1.2.b, and FSH 1909.12.22.1.2.d.

The change in language to guideline FW-GDL-SPEC-19 from “limit” to “manage,” as described above, decreased management clarity and increased ambiguity. It’s not certain how Forest Service staff would

apply or conform with the guideline because it lacks clear direction. We recommend this guideline become a re-worded standard below.

C. With regard to the Uncompahgre fritillary butterfly, the revised plan does not comply with 36 CFR 219.8(a)(1) and 219.9(a)(1).

As we've demonstrated above, the GMUG does not have sufficient standards to provide for the ecological conditions to contribute to the recovery of the UFB and is risking the species' extinction. As such, the Forest Service is also violating 36 CFR 219.8(a)(1) and 219.9(a)(1) by failing to assure the provision of ecological integrity, which is defined at 36 CFR 219.19 as,

The quality or condition of an ecosystem when its dominant ecological characteristics (for example, composition, structure, function, connectivity, and species composition and diversity) occur within the natural range of variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human influence.

The UFB must be considered a compositional and functional characteristic of the GMUG's alpine ecosystem. Not providing sufficient plan components in the preferred alternative to promote their recovery violates NFMA's diversity mandate, 36 CFR 219.8(a)(1) & 219.9(a)(1), as well as the ESA. They are part of what makes up the biodiversity of the alpine ecosystem in the GMUG, and their near extinction is a symbol of the global and national biodiversity crisis and the deterioration of the integrity of grassland ecosystems.

The Planning Directives include "species richness," "species diversity," and the "presence and abundance of species at risk" as compositional characteristics of ecosystems. FSH 1909.12.10.12.13 – Exhibit 01. UFBs also serve a functional role in the ecosystem as pollinators. FSH 1909.12.10.12.13 – Exhibit 01. Their presence and persistence within snow willow ecosystem patches is an indicator of ecological integrity. Without the UFB, the alpine willow system would be missing a key member of the ecological community.

D. The Revised Plan likely does not comply with the National Environmental Policy Act.

Despite our comments at the draft stage that pointed out the Forest Service's failure to consider a reasonable range of alternatives and conduct proper direct, indirect, and cumulative impacts analysis, this analysis remains lacking. Pertaining to alternatives, the Final EIS states, "All action alternatives include the same Forestwide direction for the Uncompahgre fritillary butterfly." FEIS, Vol. 1 at 286. Accordingly, the Forest Service acknowledges there is no range of alternatives for this species. It also constrains the decisionmaking process by foreclosing alternatives that would better protect the species and its habitat through stronger standards, such prohibiting any livestock grazing and/or trailing within and near the species' habitat. A reasonable alternatives analysis that includes a standard that excludes livestock grazing and human intrusion into UFB habitat was requested at the draft stage, yet the Forest Service has not responded to that request, nor has it undertaken that necessary analysis.

Additionally, the Forest Service has still not provided direct, indirect, and cumulative impacts analysis for this species for standard FW-DC-SPEC-01 (identified in the final plan as applicable to this species), FW-GDL-SPEC-19, or FW-DC-SPEC-27. While FW-DC-SPEC-01 and FW-GDL-SPEC-19 are stated as being beneficial for the species, neither require avoidance or mitigation of impacts, and instead opt for minimization to some unknown degree or an undefined and undetermined level of management. FW-DEC-SPEC-01 (“Disturbance of species by management activities and recreation is managed to minimize impacts during critical life history periods (e.g., breeding, feeding, rearing young, and migrating)”); FW-GDL-SPEC-19 (“ . . . the Forest Service should manage human disturbance in pertinent habitats. Tools for managing use include restricting use (motorized or non-motorized, including foot or pack stock traffic) to designated routes where appropriate; implementing seasonal recreation closures; and/or stipulating reauthorizations and new authorizations of pertinent special use permits.”). Without direct, indirect, and cumulative impacts analysis, the Forest Service has not complied with NEPA nor has it complied with its requirements under 36 CFR 219.8(a)(1), 219.9(a),(b), and 219.9(e). This outstanding impact analysis is critical to inform and strengthen plan components so they meet the agency’s obligations under 36 CFR 219.9(a)(1), (b)(1), (e), NEPA, and the ESA.

The new information that sheep grazed within this species’ habitat in the UP population in 2023 underscores the inadequacy of the Forest Service’s plan components. Increased threats (recreation, climate change), current climate science and drastic population drop offs, as discussed in the most recent 5-year reviews and as depicted in the graph below, require the forest plan to do much more to protect this species. It also does not support the Forest Service’s desired “flexibility.” See FEIS, Vol. 3 at 309. It is also clear that flexibility under the existing plan has been insufficient for the survival and recovery of the species. There must be fixed standards that protect the species from any additive impacts from sheep trailing and grazing if the Forest Service is going to meet its duties of conservation and recovery (as the ESA and 36 CFR 219.9(b)(1) require). USFWS 2023 at 3. While we are hopeful the high snow year of 2022-2023 may lead to rise in populations, the continued downward trend cannot be ignored.

Suggestions for Improvement

- Recommendation: Change the standard FW- STND -SPEC-27 to: To assist in species recovery and to avoid species and habitat impacts, new or realigned recreation trails or other habitat-disturbing activities must avoid Uncompahgre fritillary butterfly snow willow habitat and silverspot bog violet habitat. ~~(Exception: management actions supported by the U.S. Fish and Wildlife Service as beneficial to habitat.)~~. Livestock **shall not be permitted in** trailing through occupied Uncompahgre fritillary butterfly habitat. ~~Should conform to the 2008 on file biological assessment with the U.S. Fish and Wildlife Service, or as superseded in subsequent consultation.~~
- Recommendation: Adjust any grazing allotment boundaries to make them far from UFB habitat.
- Recommendation: Guideline FW-GDL-SPEC-19 must be made into a standard and replace “should” with “shall” to provide clear, unambiguous direction to prevent humans, their pets, and their livestock from entering UFB snow willow habitat with a specific set of management actions.

- Recommendation: Within two years, designate a UFB reserve special area to protect occupied and unoccupied suitable habitat, as suggested by Ripple et al. (2022). Wilderness and recommended wilderness designations alone do not provide sufficient protections for habitat given that they allow recreation and livestock.

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