Objection Reviewing Officer
USDA Forest Service, Northern Region
26 Fort Missoula Road
Missoula, MT 59804

Objection submitted electronically via:
https://cara.ecosystem-management.org/Public//CommentInput?Project=50185 , Attachments hand-delivered.

OBJECTION – Custer Gallatin Revised Forest Plan, Final Environmental Impact Statement, and Species of Conservation Concern List

Dear Objection Reviewing Officer,

Pursuant to 36 CFR 219 Subpart B, and by means of this letter the parties listed below object to the revised Land Management Plan for the Custer Gallatin National Forest (Revised Plan), corresponding Final Environmental Impact Statement (FEIS), and Species of Conservation Concern List (SCC). The responsible official is Custer Gallatin National Forest Supervisor Mary Erickson.

The arguments in support of our objection and exhibits are submitted herein. Reference materials used in our arguments that the Forest Service does not already have are attached with this letter. The notice for Opportunity to Object to the Revised Land Management Plan for the Custer Gallatin National Forest was printed in the Billings Gazette, Rapid City Journal, and Bozeman Daily Chronicle on July 9, 2020; therefore, this objection is timely.

References when identifying prior comments (objection requirement to tie objections to issues identified in previous comments):

- 2018 Scoping Comment (WildEarth Guardians, Western Watersheds Project, Prairie Hills Audubon Society)
- 2019 DEIS Comment (WildEarth Guardians, Western Watersheds Project, Prairie Hills Audubon Society)

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OBJECTIONS

1. **Livestock Grazing, Affected Environment and Environmental Consequences**

Livestock grazing is a widespread and detrimental use across the Custer Gallatin National Forest (CGNF or Forest) that is treated as a requisite program. However, just because livestock grazing has been a use on the Forest for many years does not mean that it must continue as is. The passage of the National Forest Management Act (NFMA) is a great example of recognizing that management needed to change because the status quo was not adequate at protecting the environment and the resources for ecological integrity and sustained yield. The 2012 forest planning rule is another example of this. With the ecosystem-species approach celebrated in the

2012 rule, the Forest is required to manage the Forest with biodiversity and ecological integrity in mind. Livestock grazing promotes neither and the failure of the Forest to recognize this is due to both a failure to utilize best available scientific information and a failure to establish an accurate environmental baseline.

The assessment of the livestock grazing program is woefully inadequate, and fails to meet numerous requirements under NEPA. The Revised Plan and the FEIS routinely cite livestock grazing as a significant impact to aquatic, riparian, and terrestrial ecosystems, yet fail to disclose this analysis, and fail to make any substantive changes to address this resource degradation despite numerous previous comments that provide guidance for changes. The lack of baseline information leaves an incomplete analysis of the grazing program. CEQ regulations state that, to comply with NEPA, an agency "must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."[1] The Forest must provide the public with the underlying environmental data, and "set forth the baseline conditions."[2] Although WWP previously commented regarding this lack of baseline data,[3] The Forest utterly failed to expand the analysis to include any baseline data regarding the grazing program.

Further, the Forest is required to apply the best available scientific information[4] to determine which areas of the Forest are suitable for livestock grazing,[5] and which are not. This analysis is completely missing with the only references to suitability being:

> *"National Forest System lands on the Custer Gallatin are considered suitable for permitted livestock grazing except for those areas where livestock grazing is identified in the plan as not being an acceptable use (not suitable)."*[6]

> *"The existing plans are supported by a grazing suitability analysis that was done in the mid-1980s. In addition, there have been various suitability analyses conducted on allotments that have been closed since then. Allotment specific capability and suitability analyses have been conducted on allotments with changed conditions resulting in decisions that have refined capability and suitability aspects relative to livestock use.*

[1] 40 C.F.R. § 1500.1 (b)
[2] See Attachment A-*Western Watersheds Project v. BLM,* 552 F.Supp.2d 1113, 1126 (D. Nev. 2008)
[3] WWP Scoping Comments at 25
[4] 36 C.F.R. § 219.3
[5] 36 C.F.R. § 219.7 (e)(1)(v)
[6] Revised Plan at 72

Current allotments are deemed suitable for permitted grazing and suitability is verified during allotment level National Environmental Policy Act analyses."[7]

These statements are a complete and utter violation of law. There has been no baseline condition assessment--in fact the most recent cited suitability assessment took place nearly forty years ago. This is a complete failure on the part of the Forest to assess the current impacts of the livestock grazing program. If the program is simply too large for the Forest to manage, the only solution would be to shrink the program so that proper management and oversight can occur.

Suggested Resolution: Establish methods to quantitatively assess the rangeland health across the forest. Provide a schedule for completion of the analysis, and provide the public the opportunity to review and comment on the actual baseline rangeland data during an official NEPA process. Additionally, provide overarching criteria-based guidance related to the determination of areas that are suitable and capable for livestock grazing. Establish interim guidelines for grazing management to reduce grazing impacts forest wide until this analysis is complete.

The Forest must also provide the data used to conduct the capability and suitability analysis. Further, the Forest must honestly assess the capacity to manage the grazing program and adjust the scope of the grazing program to reflect that reality. In the short term, the Forest must adopt interim standards to protect riparian and aquatic habitats that are measurable and demonstrable to permittees. The Forest can then dedicate available resources to compliance with the standards until such time as AMP revisions can be accomplished. Failure to do so violates federal law including the requirement to prevent unnecessary and undue degradation of public lands.

a. Air Quality

The Forest's review of air quality impacts was limited to the impacts from wildfire smoke. However, there are additional factors that contribute to poor air quality locally and on a larger scale. The Forest altogether failed to take a hard look at the direct, indirect and cumulative impacts[8] of certain pollutants such as those produced as a byproduct of livestock grazing--nitrous oxide and methane. The assessment of current conditions left out these pollutants entirely despite WWP having provided significant scientific evidence to suggest the importance of such pollutants to air quality and climate change. Additionally, the Forest ignored CO_2 and other Greenhouse Gas (GHG) emissions from common human activities and forest management uses. These include emissions associated with machines used for logging and associated activities, vehicle use for administrative actions, recreational motor vehicles, and emissions associated with

[7] FEIS part 2 at 79
[8] 40 CFR 1508.25

livestock grazing. The cumulative emissions associated with livestock grazing include vehicle transport, vehicle use for rangeland infrastructure, and from the livestock themselves.

However, the Forest chose to ignore the scientific papers submitted in WWP's scoping comments regarding nitrous oxide and methane emissions from livestock. As a reminder:

> *"Nitrous oxide, a by-product generated by the microbial breakdown of nitrogen in livestock manure, is a potent greenhouse gas completely ignored by the Assessment. Also, the digestion of organic materials by livestock is a large source of methane emission—another GHG not even mentioned in the Assessment. Methane is a far more potent substance than CO2 causing climate change.*"[9]
>
> *"The recent rapid rise in global methane concentrations is predominantly biogenic—most likely from agriculture—with smaller contributions from fossil fuel use and possibly wetlands."*[10]
>
> *"We focus on ruminants for four reasons. First, ruminant production is the largest source*
> *of anthropogenic CH4 emissions (Fig. 1c) and globally occupies more area than any other land use. Second, the relative neglect of this greenhouse gas source suggests that awareness of its importance is inappropriately low. Third, reductions in ruminant numbers and ruminant meat production would simultaneously benefit global food security, human health and environmental conservation. Finally, with political will, decreases in worldwide ruminant populations could potentially be accomplished quickly and relatively inexpensively."*[11]
>
> *"Furthermore, limited soil aeration in soils compacted by livestock can stimulate production of methane, and emissions of nitrous oxide under shrub canopies may be twice the levels in nearby grasslands"* [12]

Ignoring this scientific evidence and failing to incorporate these GHGs into the air quality analysis is a failure to take a hard look at the direct, indirect, and cumulative impacts of the

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[9] WWP Scoping comments at 9

[10] See Attachment A-Saunois, et al., 2016b. The global methane budget 2000–2012. Earth Syst. Sci. Data, 8, 697–751, 2016

[11] See Attachment A- Ripple William J., Pete Smith, Helmut Haberl, Stephen A. Montzka, Clive McAlpine and Douglas H. Boucher, 2014. Ruminants, climate change and climate policy. Nature Climate Change, Vol. 4, January 2014.

[12] See Attachment A- Asner, G. P., Elmore, A. J., Olander, L. P., Martin, R. E., & Harris, A. T. (2004). Grazing systems, ecosystem responses, and global change. Annu. Rev. Environ. Resour., 29, 261-299.

livestock grazing program as well as all emissions on the Forest. These emissions can impact air quality locally, and also contribute to global climate change which may in turn contribute to air quality impacts that the Forest failed to consider.

Suggested Resolution: Conduct a thorough analysis of all emissions on the Forest rather than assuming all are negligible aside from wildfire smoke. This analysis must consider nitrous oxide and methane emissions from livestock grazing and it must look at direct, indirect, and cumulative impacts of these emissions.

b. Soils

The Forest recognizes the importance of soil resources yet fails to adequately protect these resources from known detrimental impacts such as livestock grazing. This could be due to the distinct lack of analysis conducted across grazing allotments in preparation for the plan revision. The Forest states that, "the reasons why national forest lands were set aside would no longer exist if not for a healthy, productive, soil resource,"[13] however the Revised Plan does not include standards and guidelines that will adequately protect soil resources.

FW-STD-SOIL-01 states that management activities cannot create detrimental soil conditions on more than 15 percent of any soil area. However, what the Forest means by "management activities" is not clearly defined. Livestock grazing is a management activity rather than a natural and native use of the forest and therefore should be held to the same standards as the other such management activities. This would require no more than 15 percent of lands available for grazing to contain detrimental soil conditions. However, the Forest goes on to say that, "similarly, the 15 percent detrimental soil disturbance standard would not apply to an entire grazing allotment if much of that allotment is not suitable for livestock grazing."[14] This raises several questions.

First, if much of the allotment is not suitable for grazing then why is it available for grazing? The Forest's lack of suitability analysis is stark in this context. There seems to be the prevalent assumption that since grazing has long existed on the Forest that it must continue to occur. This has also led to the idea that the impacts from grazing are not great enough to warrant thorough analysis of the grazing program and grazing allotments. However, WWP provided extensive research to the contrary during scoping, and in DEIS comments. Livestock grazing is one of the most damaging uses of western public lands and must be treated as such. By not including livestock grazing, the most ubiquitous use of the Forest particularly in the pine-savanna units, as a management activity, the significant impacts to the soil is completely ignored.

[13] FEIS part 1 at 63
[14] Appendix A at 5

If there had been adequate monitoring of grazing allotments prior to the plan revision, the Forest would recognize the damage that livestock grazing has on soils. Even though the Forest recognizes that "soil salinity issues are present in the pine savanna landscape,"[15] there is no investigation into why this might be. The best description of current conditions is:

> *"The limited evidence available would indicate cattle grazing on the pine savanna districts has not created substantial soil impacts in terms of high detrimental soil disturbance levels except in sensitive areas such as highly erodible, wet, or clayey soils, or concentrated use areas such around watering troughs, feeding areas and along frequently used trailing routes and potentially in transitional wetland areas."*[16]

This is a huge failure of the Forest to use the best available science, to provide an accurate environmental baseline, and to provide standards and guidelines that will move these sensitive areas towards desired conditions. In fact, there are no standards or guidelines that relate directly to livestock grazing and soils despite the Forest's recognition that, "of all the resource areas considered relative to soil disturbance effects, the relationship between noxious weeds or other, non-native, undesirable plant species, such as cheatgrass and smooth brome, and soils is most intertwined."[17]

WWP commented extensively during scoping on the relationship between livestock grazing, soil degradation and invasive weed infestations. Yet, the Forest chose to ignore the scientific evidence without reason which is a blatant violation of the 2012 planning rule.

Suggested Resolution: The Forest must assess the impacts of livestock grazing to soils in all grazing allotments. In the interim, standards should be applied to reduce livestock grazing in sensitive areas such as riparian corridors, wetland areas, and woody draws. The 15 percent detrimental soil condition standard should be applied to management of livestock grazing. Incorporate specific monitoring and management approaches to address soil degradation by livestock. Suggestions for adaptive management include yearly monitoring of sensitive areas with reduced or removed livestock grazing if detrimental soil conditions exist.

c. Watershed, Aquatic Species and Habitat, Riparian Ecosystems

Despite a recognition that livestock grazing has severely impacted riparian areas particularly in the pine savanna and prairie ecosystems the Forest has failed to include an accurate

[15] FEIS part 1 at 67
[16] FEIS part 1 at 67
[17] FEIS part 1 at 71

environmental baseline and failed to include the best available science. The Forest stated that, "less direct conservation work has occurred in the pine savanna units, and that would be expected to continue, which is the result of lack of quality data and understanding of prairie aquatic biota species and habitat needs."[18] It is unacceptable that the Forest is moving ahead with business as usual without having an accurate understanding of current conditions and how management activities are impacting the ecological integrity of the riparian areas so key to the proper functioning of the drier pine savanna and prairie ecosystems.

Suggested Resolution: Conduct riparian assessments on all aquatic areas located within active grazing allotments. Until this can be done interim standards that reduce or remove livestock grazing from these systems must be implemented

d. Carbon Storage and Sequestration

The Forest's analysis of carbon storage and sequestration on a broad scale is severely limited. This is a violation of the requirements under NEPA to take a hard look at the direct, indirect, and cumulative impacts and to use the best available scientific information. WWP's scoping comments incorporated numerous scientific studies that discuss the potential of shrublands and grasslands for carbon sequestration following the removal of livestock grazing, yet none of this information was included in the FEIS or Revised Plan. The FEIS fails to assess one of the simplest, proven, low-tech solutions to increase soil carbon storage and restore degraded landscapes--the removal of livestock. Numerous scientific studies and reviews support this conclusion:

- "In terms of long-term carbon storage, rangelands can be superior to forests because relatively more of the total site carbon is stored in the soil where it is usually better protected from atmospheric release than carbon stored in vegetation.[19]
- "(G)razing exclusion is an effective ecosystem restoration approach to sequester and store carbon in the living biomass and soil profiles."[20]
- "Simply removing livestock can increase soil carbon sequestration since grasslands with the greatest potential for increasing soil carbon storage are those that have been depleted in the past by poor management".[21]

[18] FEIS part 1 at 102
[19] See Attachment A- Booker et al. 2013. What can ecological science tell us about opportunities for carbon sequestration on arid rangelands in the United States? Global Environmental Change 23: 240-251.
[20]See Attachment A-Reda, G. K. (2018). Effect of grazing exclusion on carbon storage on grazing lands: A Review. International Journal of Development Research, 8(09), 22870-22878.
[21] See Attachment A- Beschta et. al. 2013. Adapting to climate change on western public lands: Addressing the ecological effects of domestic, wild, and feral ungulates. Environ. Manage. 51: 474–491

Further, the Forest fails to identify factors that have reduced the capacity of soils to sequester carbon, such as livestock grazing. This is a clear violation of NEPA's requirement to take a hard look at the direct, indirect, and cumulative impacts of the livestock grazing program. In fact, the livestock grazing program does not appear in any substantial way in any discussion outside of the dedicated livestock grazing sections. Yet being such a widespread use of Forest acreage it requires substantial analysis across all aspects of the affected environment.

Suggested Resolution: Review the scientific literature presented by WWP in scoping and Draft Plan comments regarding the benefits of soil carbon sequestration following the removal of livestock from shrubland and grassland ecosystems. This analysis must then be applied to creating interim grazing standards that reduce livestock grazing impacts on soils to improve carbon sequestration capacity.

e. Invasive Species

The Revised Plan is woefully inadequate with regard to invasive species assessment and mitigation strategies. Additionally, the Revised Plan is in violation of the Forest Service Policy which:

> *"Requires determining the risk of introducing, establishing, or spreading invasive species associated with any proposed action, as an integral component of project planning and analysis and, where necessary, provide for alternatives or mitigation measures to reduce or eliminate that risk prior to project approval."*[22]

There is no consideration of how livestock grazing factors into invasive plant spread and establishment. Along with this is a failure to incorporate the best available scientific information that includes an abundance of evidence showcasing the detrimental impacts of livestock grazing on native plant populations.

Livestock graze and trample native plants which clears vegetation and destroys soil crusts; all contributing to weed invasion. This prepares weed seedbeds through hoof action. Additionally, livestock transport and disperse seeds on their coats and through their digestive tracts.[23] Therefore, if the areas where invasive and nonnative plant species have outcompeted native species are largely concentrated on grazing allotments, then a change in management must be considered. Belsky and Gelbard found that without disturbance to native plants, microbiotic crusts, and soils resulting from livestock grazing and trampling, and corresponding increases in

[22] Revised Plan at 50 citing FSM 2903

[23] See Attachment A- Belsky, A. J., & Gelbard, J. L. (2000). Livestock grazing and weed invasions in the arid West. Portland: Oregon Natural Desert Association.

light, water, and nutrients for the remaining weeds, it is doubtful that alien plants would have spread so far across the west or become so dense. At least they would not be invading as rapidly, and certainly not over the vast area of western grasslands, shrublands, and woodlands as they are now.[24] Thus, to move towards native plant communities, grazing practices on the Forest must change.

Suggested Resolution: Prior to authorizing management activities that will spread invasive species and reduce native plant vigor such as widespread livestock grazing, the Forest should perform a forest wide invasive species assessment. Interim standards including a reduction in AUMs, stubble height requirements, and utilization thresholds should be put in place until all site-specific NEPA analyses can be completed. Options for controlling invasives also include a long term reduction or removal of AUMs and a change in season of use. Additionally, a specific guideline to exclude livestock for a minimum period of three growing seasons following surface disturbing activities should be implemented.

2. Forest Plan Implementation and the NEPA Shell Game

The direction in the Revised Plan and the discussion in the FEIS are the perfect example of the NEPA shell game whereby analysis is deferred from the larger planning document to yet to be conducted site-specific analysis. However, the agency has no intention of actually completing the site-specific analysis and continues to permit the underlying activity in the meantime. This is a clear violation of law and must be remedied before a final decision is implemented.

Throughout the Revised Plan and FEIS, any changes to the livestock grazing program are continually deferred to site-specific analyses and the implementation of Allotment Management Plans (AMPs). However, history shows that this will be a long time coming and to expect severe degradation before any meaningful changes are made at the allotment level. Of particular concern are the Ashland and Sioux districts. This is where most of the livestock grazing on the Forest occurs, yet where the least amount of monitoring is occurring.

The level of reported degradation is appalling, particularly in concert with the lack of meaningful changes to the program. In the pine savanna units where most grazing takes place only 58 percent of riparian areas within grazing allotments were properly functioning and 42 percent were functioning at risk.[25] This data was collected in 2003 and no apparent trends were observed due to the lack of continued monitoring. However the Forest still chose to not conduct thorough analyses and revise AMPs. Further, the ecologically significant woody draws in the pine savanna units are in terrible condition according to the FEIS. In the Sioux District 85 percent of woody

[24] See Attachment A- Ibid
[25] FEIS volume 2 at 87

draws are functioning at risk or not functioning with 84 percent functioning at risk or not functioning in the Ashland District.[26]

It is disingenuous to say that current livestock grazing is not also a causal factor for the degraded conditions described above. In looking at tables 10-17[27] in the FEIS, nearly half of the allotments in the Sioux District and nearly two-thirds of the allotments in the Ashland District have decision dates of 1996 or earlier. Yet according to the NEPA Allotment Schedule, only 2 allotments in the Ashland District are in line for NEPA analysis and none in the Sioux District. If this schedule holds true, then virtually no action will be taken to address these degraded conditions and any plan components related to green ash woodlands will not be implemented.

Perhaps the greatest failure of the Forest in regard to any measurable changes to the grazing program is the failure to acknowledge that certain forestwide standards and guidelines can greatly benefit a multitude of resources. Instead, the Forest says that:

> *"Because of the variability in sites, specific forage utilization guidelines for riparian areas, green ash woodlands, and uplands, as well as other monitoring metrics used along riparian green lines (such as utilization, stubble height and bank disturbance guidelines) are developed and recommended by an interdisciplinary team during the allotment planning process. Criteria is informed from best available science applicable to the site."* [28]

There is substantial evidence that:

- "The research is remarkably consistent in showing that conservative grazing at 30 – 35% use of forage will give higher livestock productivity and financial returns than stocking at grazing capacity. [Researchers] also recognized that consumption by rodents and other wildlife must be taken into account as part of this utilization, otherwise, rangeland productivity would suffer even at these levels of use."[29]
- Researchers recommended levels of 25% utilization for livestock and 25% for wildlife with 50% remaining for watershed protection.[30]

In none of these cases have the scientists recommended 50 percent utilization by livestock as is often authorized by the Forest Service and they are clear that even at the lower use levels

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[26] Ibid
[27] FEIS volume 2 at 88-94
[28] FEIS volume 2 at 95
[29] Holechek, Jerry L., Hilton Gomez, Francisco Molinar and Dee Galt. 1999a. Grazing studies: what we've learned. Rangelands 21(2):12-16
[30] See Attachment A-Galt, Dee, Francisco Molinar, Joe Navarro, Jamus Joseph and Jerry Holechek. 2000. Grazing capacity and stocking rate. Rangelands 22(6):7-11.

recommended, allowance for wildlife use must be included in overall use. With such specific research readily available to the Forest it is appalling that this was ignored and diminished in favor of site-specific analysis that may never happen. These studies have taken place across a broad spectrum of ecosystems and thus these utilization levels would be an appropriate forestwide directive to be implemented during the Forest Planning process until further site specific NEPA analyses can be completed. The lack of rangeland condition analysis forestwide is appalling. Thus, forestwide directives to improve rangeland health must be implemented until proper NEPA can be completed. A continuation of business as usual is a violation of the Taylor Grazing Act's charge that the Forest Service must prevent injury to public lands.[31]

Suggested Resolution: First, the FEIS should include site specific analysis of existing grazing allotments and implement decisions for each allotment or group of allotments based on resource conditions and progress toward desired conditions. Second, the Forest should create and commit to adhering to a schedule for updating and revising if necessary, all of the AMPs and/or grazing permits in the CGNF through a NEPA compliant process. Third, the Forest should implement interim standards similar to the stubble height guideline but also including all riparian areas with Allowable Use Limits ("AULs") for bank trampling, woody browse, and utilization in the riparian zone that are based on stream channel type and the presence/absence of native aquatic species. Additionally, upland utilization AULs should be determined with specific habitat requirements for greater sage-grouse in general and priority habitat. In this case, a NEPA schedule should be created to validate the interim standards and make adjustments to AMPs and permit terms and conditions if necessary.

3. Vacant Allotments and Voluntary Permit Retirement

NEPA requires that an agency consider alternatives to the proposed action, to "provide a clear basis for choice among options by the decision maker and the public."[32] This is an important aspect of any NEPA process, yet is lacking in the FEIS. In regard to livestock grazing, the Forest only evaluates the action and the no-action alternatives. None of the action alternatives require or even suggest any management changes be made to the grazing program, despite public comment clearly outlining the need for alternative management.

Further, the Forest has clearly not provided sufficient analysis to support keeping the grazing program the same. The lack of baseline data should necessitate the development of alternatives that include quantifiable, measurable indicators of progress, or interim management prescriptions.

[31] 43 U.S.C. §315(a).
[32] 40 C.F.R. § 1502.14

WWP previously requested that the Forest analyze an alternative that closes all vacant allotments that are not currently being considered for forage reserves.[33] Yet the Forest failed to include an alternative that assessed this and the closure of any vacant allotments in connectivity corridors or in the Recovery Zone for grizzly bears regardless of the 1988 baseline. Authorizing grazing, even on a temporary basis in these areas represents a multiple use conflict that could be easily remedied by a non-suitable determination at the forest planning stage. In fact, this is the most appropriate venue to make such a determination.

Additionally, because of economic pressures and uncertainty, many ranchers in the West would like to voluntarily retire their grazing permits, and the CGNF should consider granting ranchers the freedom to retire their permits if voluntarily waived to the Forest. This proven conservation tool is extremely effective in solving conflicts between native wildlife and domestic livestock. In fact, many of the 58 allotments that have closed since the last plans were a result of voluntary permit retirement agreements. Voluntary grazing permit retirement would offer permittees a new economic opportunity while providing protection and restoration for the land managed by the CGNF. All alternatives analyzed need to include specific direction and language authorizing the permanent retirement of voluntarily waived CGNF grazing permits. Suggested language for authorizations is as follows:

Grazing privileges that are lost, relinquished, or canceled, would have attached AUMs held for watershed protection and wildlife habitat.[34]

By failing to consider any alternative to current management for the grazing program, the Forest is abrogating its duties to enhance the ecological health of the Forest and move towards desired conditions. As it stands currently, there are no quantifiable indicators or concrete terms and conditions considered that will move the grazed allotments towards desired conditions.

Suggested Resolution: The Forest should include a full analysis of an alternative that includes interim standards, quantifiable measures, and specific terms and conditions for each livestock grazing permit so that conditions forest wide can make progress toward the desired conditions. All alternatives should include language for the voluntary permanent retirement of grazing permits and the immediate closure of vacant allotments within the Grizzly Bear Recovery Zone and connectivity areas. Active grazing allotments within the Grizzly Bear Recovery Zone and connectivity areas should be targeted for closure as well.

4. Livestock Grazing Standards and Guidelines

a. Watershed, Aquatic, and Riparian Ecosystems

[33] WWP Draft Plan and DEIS comments at 9

[34] Adapted from the Challis Resource Area Proposed RMP and Final EIS, October 1998, p. 87

Healthy aquatic and riparian ecosystems are critically important for wildlife since nearly three-quarters of all species rely on riparian areas for food and/or shelter. However, the abandonment of the strict monitoring and management under INFISH has given way to weaker standards under the Riparian Management Zone and Conservation Watershed Network programs. Overall the language managing RMZs is weak:

> *"Riparian management zones are not exclusion zones or no-management zones, rather, they limit those actions that could degrade riparian conditions. Standards and guidelines are designed to protect riparian and aquatic resources by taking a multi-scale and multi-resource analysis of stream habitat and riparian conditions prior to entry."*[35]

While this recognizes the importance of riparian areas and effective standards and guidelines, there are no standards and guidelines that adequately move riparian areas toward desired conditions and protect riparian areas from livestock grazing. Part of this challenge is the vague reality of FW-DC-RMZ-01.[36] This is admirable, but not specific or enforceable which is therefore a violation of the 2012 Planning Rule.[37] Each component of the Final Plan must be enforceable, so instead of relying on vague plan components, the desired conditions for RMZs should have specific types of vegetation that are required to stabilize streams as desired.

Further, guideline FW-GDL-RMZ-01[38] should be changed to include the removal and relocation of existing livestock handling, training/loading facilities. It is not acceptable to accommodate poor past decision making at the expense of riparian habitat and aquatic species.

FW-SUIT-RMZ should also include a prohibition on permitted livestock grazing. Current allotments within RMZs should be a priority for new analysis to determine the impacts from livestock grazing. RMZs should be permanently removed from allotment boundaries.

Beyond RMZs, there is a distinct lack of any specific and enforceable components of the Revised Plan that adequately address the severe degradation that livestock grazing causes in riparian areas and in conjunction, aquatic habitats. The Forest describes conditions on the heavily grazed pine savanna units:

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[35] FEIS volume 1 at 105
[36] Revised Plan at 25
[37] See Attachment A- Brown, S. J., & Nie, M. (2019). Making forest planning great again? Early implementation of the Forest Service's 2012 national forest planning rule. Natural Resources & Environment, 33(3), 3-7. Citing 36 C.F.R. § 219.15(d) (2012).
[38] Revised Plan at 27

> *"Springs, a groundwater-dependent ecosystem, in the pine savanna units are a prominent ecological feature on the landscape in that, like streams, they are green lush and diverse areas in an otherwise arid landscape. There are 1,288 stock tanks, which are springs that have been developed for the purpose of watering livestock where the spring water is diverted to a tank. The tanks are often immediately adjacent to the spring. Those spring areas without fencing, can lead to resource damage from trampling and associated soil compaction."*[39]

Yet, there are no monitoring guidelines, and no additional plan components that can address this. This is unacceptable and a violation of the Taylor Grazing Act's requirement that the Forest prevent injury to public lands.[40] At one point the Forest recognizes that:

> *"While enclosures are not without complications, if this tool was carefully planned with producers and resource specialists, it could provide insight for allotment management. For example, nearly all streams and waterbodies in the pine savanna units are open to livestock grazing with 86 percent of all lands covered by primary rangelands within grazing allotments as compared to 6 percent in montane units."*[41]

However, there are no plan components that incorporate stream exclosures. This stream exclosure guidance should be implemented immediately along with additional enforceable interim standards so that the Forest has an actual understanding of the environmental baseline and the impact of the livestock grazing program. Further, the FP must contain as standards, allowable use limits (AULs) for bank trampling, utilization, and stubble height that are based on the Rosgen stream classification. Bengeyfield and Svoboda provide a good example of how this can be accomplished in a practical manner.[42] We suggest the Forest incorporate the following standards as terms and conditions on all livestock grazing allotments:

- A minimum of 7" stubble height remaining on hydric soils riparian greenlines after livestock grazing
- A 10 percent maximum annual bank or wetland alteration from all sources for streams and wetland hydric and mesic soil areas of upland seeps, springs, wet meadows, and aspen clones
- A maximum annual woody browse utilization by all browsing ungulates of 15 percent on cottonwood, aspen, woody shrub, and willows

[39] FEIS volume 1 at 88
[40] 43 U.S.C. §315(a).
[41] FEIS volume 1 at 116
[42] Bengeyfield, P. and Svoboda D., 1998. Determining Allowable Use Levels for Livestock Movement in Riparian Areas. American Water Resource Assoc., Proceedings: Specialty Conference on Rangeland Management and Water Resources.,

Additionally FW-GDL-WTR-02 should be included as a standard and also specifically relate to livestock grazing. Avoidance periods should be put firmly in place for livestock access to riparian habitat during times of spawning and incubation.

Finally, Due to the extensive research WWP cited during scoping and previous comments and the current poor quality of the landscape due to livestock grazing, grazing should be banned in Conservation Watershed Networks.

Suggested Resolution: Implement specific and enforceable plan components that will move aquatic and riparian habitat towards fully functioning systems. Incorporate the utilization and stream bank alteration standards suggested above as interim requirements to better manage livestock use of riparian areas. Conduct a full-scale monitoring program to understand current conditions and incorporate the interim terms and conditions into revised AMPs as necessary to preserve the resources.

b. At-risk Plant Species

The Forest has failed to adequately assess the impacts of livestock grazing on sensitive plant species and what can be done to mitigate the impacts. In each discussion regarding at-risk plant species the Forest recognizes that livestock grazing is a significant impact. Yet, there are no standards and guidelines that will reduce this impact and protect the at-risk plant species. This is a failure of the Forest to not cause unnecessary or undue degradation and to "provide for integrated social, economic, and ecological sustainability, and ecosystem integrity while providing for ecosystem services and multiple uses." The Revised Plan instead only provides for one use--livestock grazing, and does not provide for ecosystem integrity.

The recognition of livestock grazing impacts on at-risk plant species are numerous [emphasis added]:

> *"Threats to broadleaf woodlands include fire suppression,* ***improper grazing, noxious species invasion****, conifer colonization, and human activity. There may be loss of tree species to disease, insects, freezes, and fire as well as shifts in warming or drying patterns as a result of climate change which may be beneficial to some species"*[43]
>
> *"General threats to grasslands and shrublands include fire suppression, i****mproper grazing,*** *off-road vehicle use,* ***noxious species invasion****, conifer encroachment, off-trail*

[43] FEIS volume 1 at 135

recreation (for example, all-terrain vehicles, bicycles), ***disturbed hydrological functions by impounding waters and developing seeps and springs****, and human development. Warming trends may also contribute to changes in the shrub communities as fire frequency intervals and fire intensities change. In the absence of natural fire and periodic prescribed burns, appropriate grazing management practices can be used to maintain this system.* ***The spread of nonnative grass species*** *has reduced native species diversity in all geographic areas on the Custer Gallatin National Forest.* ***All at-risk plant occurrences in this habitat guild are vulnerable to noxious weed invasion****. Beartooth large-flowered goldenweed is also vulnerable to competition and shading from conifer encroachment."* [44]

"Whitestem goldenbush (Ericameria discoidea var. discoidea) – montane: ***The one occurrence is vulnerable to improper livestock grazing and weed invasion.*** *Dakota buckwheat (Eriogonum visheri) – pine savanna: This species is a regional endemic. This population grows on sparsely vegetated alluvial outwash in badlands topography and does not appear to be threatened by weeds, livestock grazing, or other activities at this time.* ***This location is potentially vulnerable to livestock trailing.****"*[45]

Each of these analyses acknowledge the impacts of livestock grazing and invasive weed infestation. Two things that are not actually linked in the Forest's analysis. However, as we commented in a previous section, livestock grazing is one of the greatest vectors for weed dispersal through hoof action, soil degradation, reducing the vigor of native plant species, and spreading weed seeds on coats and in digestive tracts. Livestock grazing must be considered an immediate threat to all at-risk plant species that occur within livestock grazing allotments due to direct impacts, and indirect impacts of facilitating the spread of invasive plant species.

However, as with much of the Revised Plan, the Forest improperly relies on future management direction to address these risks [emphasis added]:

"There are nearly 666,230 acres of primary rangelands with permitted livestock in all alternatives. ***Eight at-risk plant species (oval-leaf milkweed, narrow-leaved milkweed, Nuttall's desert parsley, Visher's buckwheat, Beartooth large-flowered goldenweed, heavy sedge, Oregon checker-mallow, and Frenchman's bluff moonwort) and associated 87 at-risk plant occurrences could have threats from potential grazing related activity.*** *All habitat guilds except alpine have the potential to be impacted by livestock or wild horse grazing, which when grazed improperly can cause hydrologic conditions to change, trampling to individual species, and habitat degradation through*

[44] FEIS volume 1 at 136
[45] Ibid

invasive species introduction. Improper livestock grazing can greatly impact riparian habitats and at-risk plant habitat. The at-risk plant species would be protected by revised plan components to support the long-term persistence of at-risk plant species ***during project level allotment planning."***[46]

Instead of using this analysis to craft specific and enforceable plan components that would protect at-risk species and meet the requirements under the 2012 planning rule, the Forest relies on future management actions that may never occur. During the Forest Planning process is the most appropriate time to address these issues. If livestock grazing is identified as a threat to at-risk plant species that occur on grazing allotments, specific standards must be adopted during the forest planning process to avoid putting these species at further risk. As WWP stated in scoping:

"Livestock grazing is assuredly responsible for most of the decline in these rare ecosystems. Yet, the only direction in the plans pertaining to livestock grazing for green ash draws is a guideline about the location of new livestock infrastructure. This FP and DEIS must analyze an alternative that eliminates livestock grazing from green ash draws to facilitate recovery at the fastest rate achievable."[47]

Suggested Resolution: Exclude livestock grazing from areas with known occurrences of at-risk plant species and continue monitoring for new occurrences. If an exclosure is not a viable option then grazing allotments or pastures containing at-risk plant species should be rested.

c. Grazing Program

The Forest's livestock grazing program suffers from inappropriate implementation of the avoid, minimize, mitigate framework by too heavily relying on the mitigation part of the framework. The Forest should instead prioritize avoiding and minimizing impacts. Along these lines is that mitigation through rangeland infrastructure projects should be a last resort. Removal of livestock and competent livestock husbandry practices should be the priority. For example, required herding would be the least impactful way to keep livestock out of riparian areas.

In regards to livestock grazing generally, Western Watersheds Project urges the FS to incorporate the following in the FP as interim AULs:

1) Specific measurable terms and conditions for livestock grazing in riparian areas, uplands, and wildlife and fisheries habitat, including:

[46] FEIS volume 1 at 155
[47] WWP Scoping Comments at 15

a) a minimum of 7" stubble height remaining on hydric soils riparian greenlines after livestock grazing
b) a 10% maximum annual bank or wetland alteration from all sources for streams and wetland hydric and mesic soil areas of upland seeps, springs, wet meadows, green ash draws, and aspen clones
c) a maximum annual woody browse utilization by all browsing ungulates of 15% on cottonwood, aspen, woody shrub, and willows
d) a maximum annual grazing utilization of perennial grass species on upland landscapes by all grazer of 35%
e) a minimum 10" residual perennial native grass cover for ground-nesting birds like sage-grouse and sharp-tailed grouse.

While we appreciate the direction that limits the use of end of season stubble height, it is also imperative to include more direction about bank trampling or streambank disturbance. Specifically, all C and E channel streams must also utilize streambank disturbance in addition to riparian stubble height as this will almost always be the first AUL exceeded.[48] Stubble heights and utilization limits alone are not enough to protect the resources for wildlife and maintaining natural conditions. Therefore a variety of AULs can better protect the resources from overgrazing.

The Forest also allows for the use of targeted grazing for weed control by sheep and goats. The issue with this in relation to grizzly bear habitat will be discussed in detail below, but it is also clear that the Forest has not properly assessed the impact of targeted grazing. Nowhere in the plan is there an analysis of the impacts of such uses on wildlife or vegetation, nor is this use described in detail. Therefore, FW-STD-GRAZ-02 and 03 are invalid as they support a use that has not been assessed through the use of the best available scientific information or subject to public comment.

The remainder of the grazing standards and guidelines fall into the same category as so many plan components in that they are not specific or enforceable and therefore are in violation of the 2012 planning rule. FW-STD-GRAZ-04 is unacceptably vague. It is not adequate so state that there will be "procedures" and "appropriate measures" to ensure sheep are not left on allotments and that sick sheep are not put onto allotments. What are the procedures? What measures will be taken? FW-GDL-GRAZ-01 should list which adaptive strategies will be implemented and should specifically state interim guidelines for how sediment will be kept out of waterways. FW-GDL-GRAZ-04-10 could similarly be improved by considering the avoid, minimize, mitigate principles. Avoiding the need for these mitigation strategies through reduction/removal

[48] See Attachment A- Simon, R. 2008. Streambank Alteration Measurement and Implementation, Bridger-Teton National Forest. Final. November 5, 2008. 19 pages

of livestock or required herding would be the most cost effective and ecologically beneficial solution.

And finally, FW-STD-GRAZ-01 and FW-GDL-GRAZ-01 suffer from the same fatal flaw as the rest of the grazing analysis and components of the plan. Everything is predicated on revising AMPs through a NEPA process that the Forest has no intention of actually undertaking. If the Forest does not have the resources to do annual inspections of each allotment, then it is clear that the grazing program has exceeded its capacity and must be reduced. In areas where the Forest does not have the resources or personnel for annual inspections, those lands should be designated as unsuitable for livestock grazing.

Suggested Resolution: Incorporate interim terms and conditions for each grazing permit until thorough and accurate assessment of each can be done and a new AMP implemented. Disallow targeted grazing on the forest, and incorporate specific, enforceable plan components.

5. Livestock Grazing and Large Carnivore Coexistence

Livestock grazing on surrounding National Forests was identified as detrimental to grizzly bears at the time they were listed as threatened under the ESA.[49] This has proven to be true as over 70 percent of all grizzly bear mortalities in the Greater Yellowstone Ecosystem between 1997 and 2017 stemmed from anthropogenic causes. Of these, at least 86 resulted from conflicts with livestock.[50] However, the FEIS, Final Plan, and Biological Assessment are all lacking with any comprehensive data regarding livestock conflicts that have resulted in killing grizzly bears. The only references to this are that in 2016 and 2017 there were two depredations that did not result in lethal removal of the bears, and Figure 16[51] which shows several yellow squares representing grizzly bear mortality with no explanation.

The grizzly bear's continued listing under the ESA requires the Forest to implement standards and guidelines to ensure mortality due to livestock conflict does not threaten the GYE population. However, the Revised Plan is relying on the 1998 baseline that allowed grazing on 26 percent of lands within the recovery zone.[52] Instead of relying on arbitrary and outdated information, the Forest should implement strict standards that closes livestock grazing allotments within the recovery zone and key linkage areas. Further, the Forest should absolutely ban

[49] Biological Assessment for Threatened, Endangered, and Proposed Terrestrial Wildlife Species at 31 citing U.S. Department of the Interior, 1975b

[50] See Attachment B- Biological Opinion for the Effects to the Grizzly Bear (Ursus arctos horribilis) from the Upper Green River Area Rangeland Project (2019 Biological Opinion), with the Reference Number 06E13000-2019-F-0012

[51] Revised Forest Plan Biological Assessment at 119

[52] Revised Plan Biological Assessment at 118

targeted grazing by sheep and goats in all grizzly bear habitat. Simply suggesting that maybe sheep and goats should be monitored full-time is not adequate.[53] This should be a requirement, or better yet, this type of grazing should not be permitted in occupied grizzly bear habitat.

With the expanding range of grizzly bear populations outside of the Recovery Zone, a forest wide analysis of the direct, indirect, and cumulative effects of the livestock grazing program on the threatened grizzly bear should have taken place. Instead, the Forest relies on an incomplete and vague analysis that states:

> *"No matter what the strategy or alternative selected, having a sustainable population of grizzlies in the same mountain ranges as permitted livestock will probably result in depredation of livestock at some point. This may increase operating costs and stress for permittees, as some level of livestock death loss may be inevitable under all alternatives."*[54]

While the admission that livestock loss is likely to occur is important to prepare livestock producers for an inevitable cost of doing private business on public land, this does nothing to address what the Forest will do if livestock depredations do occur, or what proactive, nonlethal standards they will put into place to reduce conflicts. The Forest must disclose what action will be taken if such depredations do occur. Additionally, the Forest must complete an analysis of the potential mortality to grizzly bears caused by the grazing program. Under the ESA the Forest must ensure that any actions are "not likely to jeopardize the continued existence of any threatened or endangered species."[55] However, the Forest failed to even analyze the potential impacts of the grazing program to grizzly bears.

Further, by failing to include forest wide standards and guidelines for livestock grazing, the Forest has not done its duty to,*"seek to conserve endangered species and threatened species," and "support biotic sustainability by requiring that they utilize their authorities to carry out programs for the conservation of endangered and threatened species."*[56]

The Forest has not done this. The Standards are not appropriate for reducing livestock-grizzly bear conflict. Grazing standards only apply to sheep and goat grazing permits, but there is no mention of nonlethal conflict prevention measure requirements on cattle or horse grazing permits. This ignores the fact that grizzly bears are present on the landscape now and thus the

[53] Revised Plan Biological Assessment at 138
[54] FEIS volume 2 at 108
[55] 16 U.S.C. § 1531 et seq.
[56] FEIS section 1 at 58 citing 16 U.S.C. § 1531 et seq.

Revised Plan must include specific and enforceable forest-wide standards for nonlethal conflict prevention measures.

Residents in the Blackfoot Valley saw a 96 percent reduction in reported verifiable human-grizzly conflicts between 2003-2010 following the implementation of nonlethal conflict prevention measures.[57] This led to a drastic decrease in human caused grizzly bear mortality even as the grizzly bear population continued to increase. The Forest Service has a responsibility to ensure the recovery of this threatened species and thus a failure to fully analyze the impacts of the grazing program on the grizzly bear is a violation of the law.

Further, the Forest Service should include a standard that prohibits the use of lethal predator/animal damage control in response to depredations on federally permitted livestock in the following specially designated areas on national forest system lands: Wilderness areas; proposed Wilderness areas; Natural Research Areas; Wild and Scenic River corridors; Inventoried Roadless Areas; delineated wildlife corridors and any other special management area where the protection of native wildlife need not yield to the select interests of private livestock producers.

The Forest Service must also include plan components, including specific standards that require grazing management options for avoiding and mitigating predator-livestock conflicts so as to reduce the likelihood that native carnivores will be killed in response to depredations of federally permitted livestock grazing on these public lands.

Appallingly, the Forest never even mentions wolves in the FEIS or Revised Plan. However livestock need to be managed in an appropriate way to avoid killing wolves in response to depredations. To address the large carnivores present on the Forest, both the U.S. Fish & Wildlife Service and state wildlife agencies have recommended specific science-backed measures for reducing wolf-livestock conflicts. The Forest Service should include the following measures as forest-wide standards for any Allotment Management Plans and annual grazing plans/instructions:

- Removing and composting livestock carcasses found on the allotments;
- Removing sick or injured livestock from the allotments, so they are not targeted by wolves or grizzlies;
- Delaying turnout until after early to mid-June if an active wolf den site is within 1 mile of an allotment unit, so deer will be birthing fawns and can provide an abundant and

[57] See Attachment N - Large Carnivore Conservation: Integrating Science and Policy in the North American West. (2014). United Kingdom: University of Chicago Press.

easy prey source for wolves;

- If an active wolf den site is within or adjacent to an allotment, delay turnout of calves in the area until after they average 200 lbs in weight to minimize depredation potential;
- Prohibit allotment management activities by humans near active wolf den sites during the denning period, to avoid human disturbance of the site;
- Prohibit placing salt or other livestock attractants near wolf dens or rendezvous sites, to minimize cattle use of these sites;
- In the event of depredation, if future depredations are expected, livestock should be moved to private pastures;
- During times that livestock are in a unit with an active wolf den site or rendezvous site, require the permittee to inspect that unit at least 2 days/week;
- Managing grazing livestock near the core areas (dens, rendezvous sites) of wolf territories to minimize wolf-livestock interactions, such as by placing watering sites, mineral blocks, and supplemental feed away from wolf core areas;
- Increase the frequency of human presence by using range riders and guard animals and frequently check livestock in areas with wolves or when wolves are in the vicinity of livestock pastures.

The Forest Service, acting in pursuit of the agency's obligation under NFMA to maintain diverse and viable populations of native wildlife on our national forests, has already demonstrated its ability to adopt measures that reduce the unnecessary risk livestock grazing poses to native predators like wolves at the Forest Planning level. We urge the Forest Service to consider following the precedent set by the planning team for the Blue Mountains Forest Plan revision for the three Region 6 forests in eastern Oregon (Wallowa-Whitman, Umatilla, and Malheur National Forests), which adopted the following management directives into those forest's revised plans in 2018:

- Management activities within one mile of a known active (during same calendar year that use is documented) wolf den and rendezvous sites should implement appropriate seasonal restrictions based on site specific consideration and potential activity effects, to reduce disturbance to denning wolves.
- Do not authorize turnout of sick or injured livestock to reduce risk of attracting wolves.
- Remove or otherwise dispose of livestock carcasses such that the carcass will not attract wolves. If, due to location of the carcass, this is not possible, develop other remedies.
- Do not authorize salt or other livestock attractants near known active (during same

calendar year that use is documented) wolf dens or rendezvous sites to minimize livestock use of these sites.[58]

The Forest Service must carefully consider these recommendations as well as the numerous recent studies showing the efficacy of nonlethal measures.[59]

Additionally, there is a growing body of new science showing lethal measures are not effective at resolving predator-livestock conflicts and may have unintended consequences, whereas the aforementioned nonlethal alternatives show promise. For example, in a groundbreaking 2014 study, Wielgus and Peebles concluded that common levels of killing wolves actually increase cattle depredation, finding that increased predator mortality is associated with compensatory increased breeding pairs, compensatory number of predators, and increased depredations.[60] Treves and others (2014) also found little or no scientific support for the proposition that killing predators such as wolves, mountain lions, and bears reduces livestock losses (*see also* van Eeden et al. (2017), van Eeden et al. (2018), Moreira-Arce et al. (2018); Eklund et al. (2017)).[61] Evidence also suggests that killing wolves to benefit one farm or ranch may increase predation losses elsewhere, even while "side effects of lethal intervention such as displaced depredations" may cause some to "perceive the problem growing and then demand more lethal intervention[,]

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[58] See e.g., Wallowa-Whitman National Forest Land Management Plan (2018), Species Diversity Guidelines at p. 136.

[59] *See e.g.,* Shivik et al., 2003. *Nonlethal techniques for managing predation: primary and secondary repellents*. Conservation Biology: Vol. 17, No. 6; Lance, N., et. al., 2010. *Biological, technical, and social aspects of applying electrified fladry for livestock protection from wolves (Canis lupus)*. Wildlife Research 37:708–714; Breck et. al. 2011. *Domestic calf mortality and producer detection rates in the Mexican wolf recovery area: Implications for livestock management and carnivore compensation schemes*. Biological Conservation 144:930–936. Elsevier Ltd.; Stone, S. et. al., 2017. *Adaptive use of nonlethal strategies for minimizing Wolf-sheep conflict in Idaho*. Journal of Mammalogy 98:33–44.; Defenders of Wildlife. 2016. *Livestock and Wolves: A Guide to Nonlethal Tools and Methods to Reduce Conflicts*. 2nd ed.; Barnes, Matt, Field Director, Keystone Conservation. 2015. *Livestock Management for Coexistence with Large Carnivores, Healthy Land and Productive Ranges*; Western Landowners Alliance. 2018. *Reducing Conflict with Grizzly Bears, Wolves and Elk. A Western Landowners' Guide*; Wolf Awareness. *A Ranchers Guide: Coexistence Among Livestock, People & Wolves*. 2nd ed. (Attachment B).

[60] Robert B. Wielgus and Kaylie A. Peebles, *Effects of wolf mortality on livestock depredations*, PLOS ONE 9(12): e113505, DOI: 10.1371/journal.pone.0113505 PMID: 25470821 (2014) Attachment B). Two subsequent studies have attempted to critique aspects of the Wielgus & Peebles (2014) study. Wielgus has addressed these concerns in several reviews and media articles.

[61] Treves, A. et. al. 2014. *Tolerance for Predatory Wildlife*. Science 344:476. doi: 10.1126/science.1252690; Treves, A. et. al. 2016. *Predator control should not be a shot in the dark*. Front. Ecol. Environ. 14(7):380; doi:10.1002/fee.1312; Van Eeden, Lily M. et al. 2017. *Managing conflict between large carnivores and livestock*. Conservation Biology 32(1):26; Van Eeden Lily M. et al. 2018a. *Carnivore conservation needs evidence-based livestock protection*. PLOS Biology 16(9): e2005577. https://doi.org/10.1371/journal.pbio.2005577; Eklund A, López-Bao JV, Tourani M, Chapron G, Frank J. 2017. *Limited evidence on the effectiveness of interventions to reduce livestock predation by large carnivores*. Scientific Reports 7:2097 | DOI:2010.1038/s41598-41017-02323-w; Moreira-Arce D, Ugarte CS, Zorondo-Rodríguez F, Simonetti JA. 2018. *Management Tools to Reduce Carnivore-Livestock Conflicts: Current Gap and Future Challenges*. Rangeland Ecology & Management (Attachment B).

rather than detecting problems spreading" from the first instance of lethal control (Santiago-Avila et al. 2018).[62] Harper et al. (2008) explicitly found that "[n]one of our correlations supported the hypothesis that killing a high number of wolves reduced the following year's depredations at state or local levels."[63] In sum, authorizing the lethal removal of carnivores from their native habitats on these National Forest System lands in response to depredations of federally permitted livestock grazing makes little sense and is often counterproductive.

A wealth of recent scientific studies also highlights the critically important ecological role top predators play and demonstrates the cascade of unintended environmental consequences and wide-ranging adverse effects that emanate from removing species like wolves, bear, and cougars from native ecosystems (*e.g.*, Halofsky & Ripple 2008, 2008b; Manning et al. 2009; Beschta & Ripple 2009, 2010b, 2012, 2012b, 2015, 2016, 2018; Ripple & Beschta 2003, 2004, 2005, 2006, 2006b, 2007, 2012; Kauffman, Brodie & Jules 2010; Wild et al. 2011; Kimble et al. 2011; Estes et al. 2011; Painter et al. 2012, 2015; Levi et al. 2012; Bergstrom *et al*. 2013; Ordiz, Bischof & Swenson 2013; Bouchard et al. 2013; Wilmers & Schmitz 2016; Bergstrom 2017). As apex predators, wolves create a "trophic cascade" of effects that flow through and sustain ecosystems and the web of life (Ripple and Beschta 2011; Estes et al 2011; Ripple et al. 2013). In general, the presence of carnivores can affect everything from vegetation structure to river morphology to availability of carrion and insect communities in an ecosystem (Beschta and Ripple 2012, Beschta et al. 2008, Beschta and Ripple 2006, Naiman and Rogers 1997).

All articles and materials cited within this subsection can be found in Attachment B.

Suggested Resolution: There needs to be forest-wide management directives for how livestock permittees can operate in grizzly habitat. Standards should include specific, enforceable measures to reduce livestock-grizzly conflict. Non Lethal deterrents have been found to be more effective in the long-term at reducing livestock-carnivore conflict. Techniques that have been proven successful at conflict prevention are:

- Electric fencing around calving areas;
- Removal of birthing material;
- Removal and composting of carcasses;
- Range riding;

[62] Santiago-Avila FJ, Cornman AM, Treves, A, (2018) *Killing wolves to prevent predation on livestock may protect one farm but harm neighbors*. PLoS ONE 13(1): e0189729 (Attachment B).
[63] Elizabeth Harper et al., *Effectiveness of Lethal, Directed Wolf-Depredation Control in Minnesota*, USGS Northern Prairie Wildlife Research Center, Paper 99, 782 (2008) (Attachment B).

- Hazing carnivores away from livestock;
- Delaying turnout until calves are greater than 200 lbs.;
- Delaying turnout to coincide with native ungulate calving season.

Implementation of these requirements should begin as soon as possible, rather than wait until a permit is renewed. Further, the Forest authorizes temporary grazing permits of small livestock and states that grizzly bears will be favored in management actions in response to depredations inside the recovery zone, but that livestock will be favored outside the recovery zone. Such temporary grazing permits should be disallowed and accompanied by a net decrease in grazing in the Recovery Zone. Additionally, the Forest should not allow the lethal removal of grizzly bears due to grizzly-livestock conflict. It is imperative that livestock permittees are prepared to implement nonlethal conflict deterrence measures as grizzlies disperse.

These same standards must be applied to the topic of wolves in the CGNF. Wolves occur throughout the plan area, and thus forest-wide management directives to reduce and avoid wolf-livestock conflicts must be considered. The standards we provide from the Blue Mountains Forest Plan revision provide a good model for the types of coexistence measures that will similarly work well here. Further, the agency should include specific requirements we list above for Allotment Management Plans and annual grazing plans/instructions. These specific requirements should apply to wolf-livestock conflict and be adapted for grizzly-livestock coexistence as well.

6. Wildlife

a. Bighorn Sheep

The inclusion of species-specific standards developed for the protection of bighorn sheep demonstrates the pervasive risk to bighorn populations from pathogens transmitted by domestic sheep and goats, and stands as clear evidence that bighorn sheep meet the criteria for inclusion on the list of Species of Conservation Concern.[64] As demonstrated in WWP's 2018 Scoping Comments and 2019 DEIS Comments, the Forest's failure to include bighorn sheep on the list is directly contradicted by the BASI and by the herds' short- and long-term population trends. This lack of inclusion on the SCC list stands in stark contrast to the Forest's decisions to include bighorn sheep on the SCC list for the Rio Grande and Nez Perce-Clearwater National Forests, where similar conditions exist. The Forest Service may not sidestep its obligations toward Species of Conservation Concern as defined by the 2012 Planning Rule: bighorn sheep must be designated as SCC on the Custer-Gallatin National Forest.

[64] 36 CFR § 219.9(b)(1)

Neither the FEIS nor the Forest Plan address the threat domestic sheep and goats on private, BLM, and state-managed lands pose to bighorn sheep populations on the Forest.[65] The FEIS does not analyze or describe the distribution of domestic sheep and goats adjacent to Forest Service lands or the likelihood that bighorn sheep will contact those domestic animals, and the Forest Plan does not require that permeability to bighorn sheep be considered prior to timber harvest activities, prescribed burns, or other vegetation manipulation actions not including sheep and goats. As a result, bighorn herds on Forest Service lands may be harmed by pathogens transmitted from domestic livestock occurring off Forest Service lands, including in areas where Forest Service-authorized timber removal or other vegetation management activities have greatly increased the probability of pathogen transmission.

The Forest Plan contains no direction regarding the overlap of cattle allotments or non-native mountain goat herds with bighorn sheep occupied habitat. The FEIS does not even acknowledge the potential for pathogen transfer to bighorn sheep from cattle, and instead falsely lists cattle as a species "not considered a risk for disease transmission" for bighorn sheep.[66] However, as detailed in our previous comments, cattle have been implicated in pneumonia-related die-offs of bighorn sheep as well as in outbreaks of Bovine Viral Diarrhea and other diseases impacting wild sheep. Bovine respiratory syncytial virus (BRSV) and bovine parainfluenza virus 3 have been identified as co-agents in pneumonia outbreaks in bighorn sheep populations, affecting bighorn herds exposed to primary agents Mycoplasma ovipneumoniae and Mannheimia haemolytica. Mannheimia haemolytica originating in cattle is believed to have been a primary respiratory disease agent in at least one bighorn sheep pneumonia outbreak.

In addition to the potential for transmission of pneumonia-causing bacteria and other pathogens to bighorn sheep, cattle and mountain goats may displace bighorn sheep through habitat degradation or direct competition for resources, and they may spread noxious weeds that deteriorate native plant communities on which bighorn sheep depend. While these are acknowledged as stressors to bighorn sheep in the FEIS, none of these factors affecting the viability and distribution of bighorn sheep populations are actually analyzed, and none are adequately addressed by Forest Plan components. The FEIS does describe the potential for conflict between bighorn sheep and mountain goats in general terms, however the Forest Service asserts that some unknown "studies" which aren't cited in the FEIS demonstrate such conflicts aren't occurring on the Custer-Gallatin National Forest.[67] The FEIS cites documents dating from 2010 and 2012 as evidence that there are no substantial conflicts between mountain goats and bighorn sheep on the Forest despite population estimates within those documents being almost a decade old, but the FEIS does not acknowledge the recent high-profile killing of an entire

[65] 36 CFR § 219.9(b)(2)
[66] FEIS Vol. 1 at 503
[67] FEIS Vol. 1 at 503

population of mountain goats from the habitat area of the Teton bighorn sheep herd, which lies just 50 miles from the Forest, due to conflicts with bighorn sheep.

b. American Bison

The Forest failed to provide sufficient standards to protect and improve the Yellowstone bison population and habitat and additionally failed to include bison as a species of conservation concern.

First, the 2012 planning rule identifies a species of conservation concern as:

> *"A 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."*[68]

The planning rule also requires the Forest to provide secure habitat and a viable population of a species of conservation concern. However the Forest failed to provide adequate plan components for American bison habitat, and failed to list the American bison as a species of conservation concern.

i. American bison were wrongfully excluded from the Species of Conservation Concern List

The Regional forester failed to incorporate a review of the best available scientific information that was submitted during the 2019 public comment period. In fact, the SCC list was released prior to the DEIS and DFP public comment period. But, Regional Forester Marten's decision must conform to National Forest planning rule requirements to consider all public comment, document "the use of the best available scientific information," and ensure "the rationale for decisions is transparent to the public."[69]

American bison meet all of the Forest's criteria for listing as a species of conservation concern, yet the Forest has arbitrarily chosen to not include the species on the list. "Agency planning policy requires that species identified by states as being at risk be considered as potential SCC."[70] The state of Montana has identified American bison as being at risk, yet the Forest has still failed

[68] 36CFR §219.9(c), National Forest System Land Management Planning final rule and record of decision, 77 Fed. Reg. 21162, 21265 (Apr. 9, 2012).
[69] Ibid
[70]See Attachment C- Martin Nie et al., Fish and Wildlife Management on Federal Lands: Debunking State Supremacy, 47 Environmental Law 797, 862 (2017) (citing Forest Service Handbook: Land Management Planning Handbook § 1909.12 (2013)).

to include it as SCC. In fact, the Montana Natural Heritage Program[71] found that only 1% of American bison's breeding range in Montana is available to perpetuate populations of the species in the wild. This breeding range is on the Custer Gallatin, and the Forest is required to protect and conserve this habitat.

NatureServe's state listing for American bison is S2, "Imperiled— At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors."[72] Additionally, Montana Fish, Wildlife and Parks, and the Montana Natural Heritage Program list American bison as a species of concern due to declining populations, threats to habitat, and restricted distribution, which demonstrates the use of best available scientific information that the Forest should be applying.

Cumulative impacts well understood by the Forest were ignored in this decision making. Bison experience stressors curtailing their natural range, fragmented habitat, agency permitted actions that disrupt connectivity to habitat, cattle grazing allotments, fences in migration corridors, climate change uncertainties, drought, and fires that may shift bison into intolerant "management zones." Bison clearly meet the criteria to be listed on the SCC list so their exclusion is a violation of law.

Suggested Resolution: Regional Forester Marten's decision should be reversed, and her assessment and evaluation of the best available scientific information for listing American bison as a species of conservation concern publicly disclosed.

ii. Plan Components Fail to Provide Habitat and Connectivity

Alternative F does not "provide the ecological conditions to both maintain diversity of and support the persistence of" American bison, a native migratory species, in the plan area as the National Forest planning rule requires. The vague plan components are not adequate to conserve genetically distinct and unique bison subpopulations. The current population estimate is 1,162 Central herd bison[73] which is far below the minimum required to avoid inbreeding.[74] The final alternative must include standards conserving habitat for the viability of American bison subpopulations and persistence of the population as a whole.

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[71] See Attachment C- Montana Natural Heritage Program, SOC Report Animal Species of Concern (last updated April 16,
2020).
[72] See Attachment C- https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.101908/Bison_bison
[73] See Attachment C- Chris Geremia et al., Status Report on theYellowstone Bison Population, page 1 (October 2019).
[74] See Attachment C- Philip W. Hedrick, Conservation Genetics and North American Bison (Bison bison), 100(4) Journal of Heredity 411, 419 (2009); Natalie D. Halbert et al., Genetic Population Substructure in Bison at Yellowstone National Park, Journal of Heredity, Advance Access published (Feb. 8, 2012).

The lack of standards for American bison and their habitat is unacceptable. With only desired conditions, there are no specific or enforceable plan components, thus violating the law. Simply stating that the Forest desires stable and increasing genetic diversity will do nothing to ensure that bison on the Forest achieve that. Further, because of the potential for changing conditions, bison may be shifted into intolerant management zones where they may be killed. Without increasing habitat and range of bison, the population will continue to decline or stagnate.

FW-GDL-WLBI-03 is contrary to the Forest's requirement to provide for connectivity. The Forest must include a standard that does away with these barriers to connectivity and provides for free migration of this native species. The Forest Service must "stop the practice of reflexively acquiescing to state claims of wildlife authority"[75] and follow your duty to provide for diversity and viability of native species including American bison.

Suggested Resolution: The final alternative must include standards constraining the Forest, and imposing legal duty to provide habitat for a viable population of American bison with "stable and increasing genetic diversity" on our National Forests. Additionally, the Forest must close all active livestock allotments within the American bison's range. Bison are harassed and killed for simply occupying their native habitat in the Forest and this needs to end. The solution would be to proactively close all cattle allotments within bison range.

c. Greater Sage-grouse

Greater sage-grouse (sage-grouse) were appropriately included as a species of conservation concern. However, plan components and the FEIS analysis are still not adequate. The Forest failed to use the best available scientific information that was submitted by the public. WWP submitted substantial scoping comments[76] documenting the extensive scientific evidence that sage-grouse and other sagebrush obligate species require levels of sagebrush significantly higher than what is available in the Plan area, and the cited 1-10 percent canopy cover.[77] Despite the evidence cited in WWP's scoping comments, the Forest failed to analyze the impacts of long-term active management and its impacts on sagebrush communities and obligates compared to the impacts of removing livestock and allowing these communities to recover naturally. Livestock grazing is considered the single most important influence on sagebrush habitats and

[75] See Attachment C- Martin Nie et al., Fish and Wildlife Management on Federal Lands: Debunking State Supremacy, 47 Environmental Law 797, 905 (2017).
[76] WWP Scoping at 17
[77] FEIS volume 1 at 478

fire regimes throughout the Intermountain West in the past 140 years.[78] Livestock grazing disturbs the soil, removes native vegetation, and spreads invasive species in sagebrush steppe[79] Yet, the Forest failed to consider an alternative that would address this pervasive use of sensitive habitat occupied by a SCC.

Despite their extent, sagebrush-dominated communities are among North America's most critically endangered ecosystems as a consequence of losses to agriculture, conversions to exotic annuals, and/or degradation due to excessive grazing by domestic livestock.[80] Since sagebrush communities on private lands have been converted to agricultural or other uses or are not being managed in a manner compatible with sagebrush dependent wildlife, the importance of maintaining the integrity of sagebrush habitats on FS lands within the planning area to provide taller, denser stands for mule deer, pronghorn, and sage-grouse is extremely important. However, the Forest relies on inadequate standards and guidelines to protect this sensitive species.

The Forest's own analysis returns that:

> *"Much of the designated sage-grouse habitat on the Custer Gallatin is located within permitted livestock grazing allotments. Improper utilization by livestock has the potential for impacts across all seasonal habitats (U.S. Department of Interior 2013c). Grazing can influence sagebrush communities through reduced productivity, changing plant composition, and herbaceous structure. Indirect effects include those associated with grazing infrastructure, including mortalities associated with water troughs and fence strikes"*[81]

> *"Fire, both natural and human caused, is a major factor associated with loss of sagebrush habitats and corresponding population declines for sage-grouse. Fire frequency and associated habitat loss has increased in the western portion of sage-grouse range in recent years, at least partly facilitated by the presence and spread of non-native grasses such as cheatgrass, Japanese brome, and timothy. Other invasive plants may also impact sage-grouse habitat. Climate change has the potential to influence the spread and distribution of non-native plants over time, as well as to increase the frequency and severity of fires."*[82]

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[78] See Attachment C- Knick, S. T., A. L. Holmes, R. F. Miller. 2005. The role of fire in structuring sagebrush habitats and bird communities. FIRE AND AVIAN ECOLOGY IN NORTH AMERICA. Studies in Avian Biology, no. 30. Page 68. Cooper Ornithological Society. Boise, ID.
[79] Ibid
[80] See Attachment C- Reisner, Michael D.; Grace, James B.; Pyke, David A.; Doescher, Paul S. 2013. Conditions favouring Bromus tectorum dominance of endangered sagebrush steppe ecosystems. Journal of Applied Ecology.
[81] FEIS volume 1 at 487
[82] FEIS volume 1 at 481

Despite this, there are weak and inadequate plan components. In fact, there is only one standard governing how sage-grouse are meant to be managed and it only discusses one management activity. There are no specific and enforceable plan components that address the impacts of livestock grazing on the sagebrush ecosystem or on sage-grouse. Additionally, relying on language that allows management activity if there is no net loss or a "net conservation gain" is not specific and may not be appropriate. If priority habitat is being destroyed that's okay as long as another chunk of habitat is restored elsewhere? What is the Forest's success rate with sagebrush restoration projects? These plan components were not adequately analyzed and the Forest must do so before issuing a final decision.

Suggested Resolution: The forest should ban the construction of any new utilities, facilities, livestock infrastructure, or mining developments within priority habitat. If net conservation gain is defined, then new developments that result in net conservation gain can be considered. Livestock grazing in priority habitat should be disallowed and these lands should be used to study the benefits of livestock removal on sagebrush habitat.

7. Sustainable minimum road system

The infrastructure plan components are inconsistent with the 2012 planning rule requirements and Forest Service directives, and the Forest Service fails to sufficiently analyze the environmental consequences of the transportation system. In our previous comments, we urged the Forest Service to comply with the substantive mandates of the 2012 planning rule and Forest Service directives. Yet, the revised plan components fail to do so because the Forest Service did not consider the best available scientific information, did not provide standards and guidelines consistent with the sustainability and diversity requirements, omitted a sufficient monitoring program, and failed to provide for a realistic and sustainable desired infrastructure.

A. Failure to Provide for a Sustainable Minimum Road System

In our previous comments, we explained how the Travel Management Rule under Subpart A intersects with the 2012 Planning Rule, and how it is necessary for the Revised Plan to include infrastructure components "...to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity."[83] We also explained the Forest Service failed to properly analyze its road system, especially how the deferred maintenance backlog affects resource conditions under each alternative. The Forest Service asserts it provided

[83] 36 C.F.R. § 219.8(a)(1)

sufficient analysis and has met its regulatory requirements in this regard, responding in part, "[t]he revised plan includes direction to guide management of the transportation system to avoid, reduce, or mitigate road-related risks, such as FW-DC-RT-01; FW-STD-RT-01 through 05; FW-GDL-RT-03 through 11; FW-GDL-SOIL-02 and 03; FW-GDL-RMZ-03; FW-OBJ-CWN-01; and FW-GDL-CWN-01."[84] The agency's response referencing specific plan components fails to adequately respond to our comments or the need for the Forest Service to include stronger direction in the Revised Plan to comply with the 2012 Planning Rule. Specifically, while all plan components are enforceable[85] several of those cited in the agency's response to our comments fail to provide adequate or clear direction which undermines the ability for the Forest Service to ensure project consistency with the Revised Plan.[86]

For example, the desired condition FW-DC-RT-01 directs "[t]he transportation system and its use have minimal impacts on resources including ecological integrity and diversity, threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species."[87] While we support the intent of this direction, "minimal" is too ambiguous to provide for the protection of National Forest System lands as the travel management rule directs. 36 C.F.R. 212.5(b). Further, the Revised Plan lacks the corresponding components to achieve the desired condition. In particular, FW-STD-RT-04 states, "[n]ewly constructed or reconstructed roads shall not encroach into streams and riparian management zones in ways that impact channel and floodplain function, geometry, or sediment delivery in the long term."[88] Yet, there is no definition for what "long term" means, and given projects can take years if not decades to complete, the Forest Service needs to include some temporal limits in this standard in order to be enforceable. Further, the Revised Plan fails to include adequate components, including standards and guidelines that protects streams and RMZs in the short term as it relates to road management in order to meet 2012 Planning Rule requirements.[89] For example, FW-OBJ-CWN-01 directs "[r]educe sediment production on five to eight miles of National Forest System roads, per year, within the conservation watershed network by enhancing the roadway drainage erosion control mechanisms."[90] The Forest Service fails to quantify the sediment reductions or demonstrate in the FEIS that an "enhanced" control mechanism will achieve those reductions. Further, the FEIS fails to disclose the miles of road within CWNs or the number of roads that need sediment reductions in order to maintain viable populations of species of conservation concern. As such, it is unclear if enhancing five to eight miles of road

[84] FEIS Vol. 4, Appendix F at 42.
[85] 36 C.F.R. § 219.15(d)
[86] Brown, S.J., and M. Nie. 2019. Making forest planning great again? Early implementation of the Forest Service's 2012 national forest planning rule. Nat. Resour. Environ. 33(3):3–7. (explaining " In practice, however, enforceability will be difficult if a component is written in an unclear or vague manner."). Attachment A.
[87] Revised Plan at 83.
[88] Revised Plan at 84.
[89] 36 C.F.R. 219.9(a),(b).
[90] Revised Plan at 29.

annually will have any measurable benefit to at-risk species or if the benefit will be sufficient to meet the 2012 Planning Rule requirements.[91] Further, the Revised Plan component FW-GDL-CWN-01 directs the agency to avoid net increases over the life of a project in stream crossings and road lengths within riparian management zones.[92] Given the Forest Service is currently contemplating projects that span more than a decade,[93] the guideline is too vague to offer sufficient direction for Revised Plan compliance to actually result in the maintenance or restoration of rare aquatic animal communities, or conserve candidate species, or to maintain a viable population of each species of conservation concern within RMZ within the planning area. In addition, the guideline's language of no net increases would still allow new stream crossings and road construction within the RMZ. Without specific restrictions on the number of crossings or miles constructed, the guideline is too vague to comply with the 2012 Planning Rule or provide for the protection of National Forest System lands as the TMR subpart A directs.

The Forest Service also refers to the FEIS and other Revised Plan components in response to our comments to include stronger direction to identify and implement a minimum road system.[94] The agency asserts that it had already identified the MRS in previous travel management plans completed in 2009. To be clear the Beartooth, Ashland and Sioux Ranger District Travel Management decisions did include statements asserting TMR subpart A compliance, but did so more as an afterthought rather than including such action as a purpose and need for the project as we explained in our previous comments. Further, the travel management plans failed to incorporate in its supporting NEPA analysis recommendations from a travel analysis report that properly assessed the risks and benefits of the road system. As such, any assertions of TMR subpart A compliance in past travel plan decisions are not supported by the requisite science-based analysis. In addition, the Gallatin Travel Plan was completed in 2006 and did not include in its decision any reference to identification of the minimum road system or compliance with the TMR subpart A provisions. Further, the Revised Plan FEIS explains the Forest Service has removed over 2,000 miles of "project roads" that have been or will be restored:

> Finally, there are over 2,000 miles of project roads (see glossary) that have been removed (decommissioned) from the National Forest Transportation System and either restored back to the natural landscape or scheduled for restoration. These historic road corridors may be reused in the future for specific project access and implementation.[95]

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[91] 36 C.F.R. 219.9.
[92] Revised Plan at 29.
[93] See the Ecotonal Habitat Restoration Project scoping notice, ("Project implementation would be ongoing and could span 10 to 15 plus years") and the Ash Creek Restoration and Resiliency Project scoping notice, ("Project implementation would be ongoing and could span 20 to 30 plus years.").
[94] FEIS Vol. 4, Appendix F at 44-45.
[95] FEIS Vol.2 at 184.

We certainly support the Forest Service's efforts to reduce its road management burden, yet it is extremely troubling that the agency considers previously decommissioned roads to be candidates for future use, which runs counter to achieving an ecologically and economically sustainable road system. In fact, such an assertion points to the need for stronger plan components to ensure TMR subpart A compliance, such as those we included in previous comments in addition to a requirement for project-level travel analysis. The Forest Service cannot claim it has already identified a minimum road system forest-wide and therefore does not need to include plan components toward this end, while at the same time disclosing the intent to add decommissioned roads back onto the system. Given such an acknowledgement, it was arbitrary for the Forest Service to delete the objective directing the removal unneeded roads with the rationale that, "additional standards and guidelines are not necessary and the objective included in the draft plan (FW-OBJ-RT-03) to remove remaining not likely needed roads, has been deleted from the revised plan."[96] We strongly object to the removal of this objective and reject the agency's rationale that it is unnecessary because the agency is nearly finished with removing all unnecessary roads.[97] The intent to add decommissioned roads back to the system, along with insufficient road maintenance budgets, and past deficiencies in travel analysis reports and travel plan analyses, indicates the Forest Service should continue to identify unneeded roads. Therefore the deleted objective and additional standards and guidelines are absolutely necessary to ensure the forest transportation system complies with the TMR subpart A provisions and thus the 2012 Planning Rule requirements.

B. Road/Motorized Route Density Standards

Our previous comments provided several plan components and supporting rationale to establish and direct the use of motorized route density standards necessary for compliance with the 2012 Planning Rules and the need to achieve a sustainable road system. The Forest Service response dismisses these comments and arbitrarily asserts such requests are unnecessary because the Revised Plan includes sufficient components that preclude the need for density standards.[98] Further, the agency dismisses the best available science we provided in a 2014 literature review that shows a broad-scale threshold for maintaining functional landscapes for large mammals required road densities below 1 mile per square mile. The agency counters by stating "[h]owever, it should be noted that the scale at which road densities were calculated for the studies cited was not provided."[99] The cited articles clearly indicate the spatial scales supporting the road density thresholds, and although these studies were at different scales and temporal time frames, collectively they demonstrate the importance of retaining low road densities for functional

[96] FEIS Vol. 4, Appendix F at 45.
[97] FEIS Vol. 2 at 183.
[98] FEIS Vol. 4, Appendix F at 44.
[99] FEIS Vol. 1 at 573.

landscapes. We provide an update to the 2014 literature review that reaffirms the need for low motorized route densities to ensure wide-ranging wildlife have the necessary habitat security to ensure the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern within the plan area.[100] Rather than consider road or motorized route densities at appropriate scales in its analysis, the Forest Service apparently averages the miles of road across the entire plan area to arrive at a density calculation that "shows that 72 percent of the entire national forest has motorized access route density at or below 1 mile per square mile."[101] In determining motorized route densities, the Forest Service should only include areas where it authorizes such use, which precludes designated Wilderness areas and areas with primitive and semi-primitive non-motorized ROS allocations. It is arbitrary for the agency to include areas without roads or motorized use to dilute the motorized route densities. Should the agency seek to include such areas, they must be geographically distinct and species specific such as grizzly bear management and analysis units.[102] Another example would be to use elk hunting districts. Conversely, the Forest Service could use the Watershed Condition Framework scale of 12-HUC subwatersheds that the agency already uses to assess its road and trail indicator rankings. The Forest Service cannot dismiss establishing motorized route desinsities by averaging its total road miles across the entire planning area.

Establishing motorized route densities is especially important to ensure wide-ranging wildlife have adequate habitat security within areas of connectivity. Yet, the Forest Service response is that such standards are unnecessary because the Revised Plan includes specific related components citing FW-DC-WL-05 and 07, and FW-GDL-VEGF-02 as examples.[103] Such components are insufficient to comply with the 2012 Planning Rule requirements that require standards and guidelines to maintain or restore areas of connectivity.[104] Relying solely on desired conditions is insufficient to meet this requirement, and in looking at the guideline FW-GDL-VEGF-2, it only pertains to old growth associated wildlife, and then only says road constructions should be avoided and includes major exemptions negating the guideline's effectiveness. Establishing motorized route density standards within mapped key linkages would provide an essential component to help maintain or restore habitat security within these areas, and it would ensure the Forest Service properly complies with the 2012 Planning Rule requirements.

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[100] In previous comments we provided the Forest Service with the paper explaining the benefits of road density thresholds titled "The Wilderness Society, Transportation Infrastructure and Access on National Forests and Grasslands: A Literature Review (May 2014)." Here we provide an update to this paper with 59 additional references in a report titled, "The Environmental Consequences of Forest Roads and Achieving a Sustainable Road System (March 2020)," see Attachment D.
[101] FEIS Vol. 1 at 573.
[102] FEIS Vol. 1 at 394, 395.
[103] FEIS Vol. 4, Appendix F at 44.
[104] 36 C.F.R. 212.9(a)(1).

C. Deferred and Annual Road Maintenance

Overall, the plan components lack direction to work towards a minimum road system, consistent with subpart A of the agency's own rules. Specifically, the Revised Plan fails to ensure the road system provides for the protection of Forest Service system lands and direction for improving habitat and aquatic connectivity. While the desired conditions call for a "cost-effective" road system that has "minimal impacts on resources," the Revised Plan lacks sufficient corresponding objectives, standards and guidelines.[105] The Forest Service manages 3,070 miles of road in the planning area, and 1,430 miles are currently closed, of which 180 miles are in long-term storage. [106] The agency states it only has funds for basic custodial maintenance, which has "not allowed Custer Gallatin road managers to fully manage the roads to their established road management objectives."[107] Yet, the Forest Service fails to provide specific analysis, namely disclosing or discussing how many miles meet their operational and objective maintenance levels, or how many miles currently fail to meet their overall road management objectives. It also fails to disclose past or anticipated funding levels for annual road maintenance, or the amount of the current deferred maintenance backlog. As such, it is not possible to determine how much maintenance is necessary to protect natural resources, or how many miles would constitute a "cost-effective" road system, one that reflects long-term funding expectations as required under subpart A of the TMR.[108] In addition, the Forest Service erroneously removed the road decommissioning objective explaining "the program of removing planned unneeded system roads is nearly completed."[109]

Further, without any discussion of the deferred maintenance backlog and long term funding expectations, it is not possible to determine if the Revised Plan can meet its maintenance objectives or the desired condition to ensure resource impacts are minimal.[110] In other words, the analysis fails to provide enough information to allow for meaningful comment or support the omission of a specific road decommissioning objective. As we stated in our previous comments, the Forest Service needs to provide clear direction to remove roads, especially those that pose high or moderate resource risks as shown in previous ***and future*** travel analysis reports.

D. Unauthorized Roads

[105] Revised Forest Plan at 103.
[106] FEIS Vol. 2 at 184.
[107] *Id.*
[108] 36 C.F.R. § 212.5(b)
[109] FEIS Vol. 2 at 183.
[110] Revised Plan at 83, (FW-RT-DC-01).

In our previous comments we urged the Forest Service to establish plan components to address unauthorized roads. The agency acknowledges "[a]n unknown number of unauthorized routes exist throughout the Custer Gallatin National Forest, created by users to access firewood, campsites, hunting areas, or for game retrieval. Since these are unauthorized, the routes are slated for removal when identified."[111] Yet, the Forest Service failed to include any general plan components that would ensure their removal outside of primitive and semi-primitive non-motorized ROS allocated areas.[112] While it is important to maintain these ROS settings, the Forest Service must address unauthorized roads throughout the planning area. Yet, the agency omits such an objective with the rationale that "[t]he Forest Service considered whether to add a more general objective that speaks to removal of unauthorized roads and trails as they arise and did not include one because objectives need to be measurable and the number of removals is unpredictable."[113] While the miles of unauthorized routes may be unpredictable, the amount of acres the Forest Service proposes to perform active management on each year is not as evidenced by the analysis showing the projected acres of forested vegetation treatments of the first two decades.[114] The analysis demonstrates that the Forest Service could include an objective that specifies the number of acres analysed for unauthorized roads and trails. Yet, it may be more effective to simply include a standard that directs the removal of unauthorized roads and trails in any project area. As it stands, the Forest Service failed to include sufficient plan components to properly address unauthorized roads and trails.

E. Temporary Roads

In our previous comments we provided specific plan components to ensure the Forest Service tracks and properly removes temporary roads in a timely manner (no longer than 3 years following use). Instead of incorporating these recommendations, the Revised Plan retains weak guidance and fails to provide adequate direction to ensure temporary roads do not become unauthorized roads, which the agency then "discovers" for use in future project analysis. That is why it is essential that the Forest Service include the plan components that we recommended to track temporary roads and establish temporary road plans at the project level that defines how the road shall be constructed, managed and fully removed after use. The plan must define the road design, who are responsible parties and their roles in construction, maintenance and decommissioning, the funding source, a schedule for construction, maintenance and decommissioning, the method(s) for decommissioning, and post-decommissioning monitoring requirements for determining decommissioning success. Rather than include these and other plan components that we provided, the Forest Service response actually anticipates future use of

[111] FEIS Vol. 2 at 185.
[112] FEIS Vol. 4, Appendix F at 45.
[113] *Id.*
[114] FEIS Vol. 2 at 144, Tables 35 and 36.

temporary roads that it fails to properly remove by explaining "[i]f a temporary road was to be left on the landscape, site-specific National Environmental Policy Act decision making supported by travel analysis would be needed to become a part of the permanent and minimum road system."[115] To be clear, roads are not temporary if left on the landscape, and the Forest Service must include stronger plan components to ensure their removal.

Overall, the Revised Plan retains the same components in which we commented previously as being insufficient to ensure the Forest Service actually improves habitat and aquatic connectivity. Therefore, our previous comments apply to the Revised Plan and, again, it fails to actually maintain or improve habitat and aquatic connectivity. Similarly, the Revised Plan components are insufficient to ensure compliance with the Clean Water Act, including the Forest Service's duty to not cause or contribute to a violation of Montana water quality standards. While the Revised Plan includes numerous guidelines, they do not carry the force or effect as would standards, which precludes the agency from identifying or working towards an ecologically and fiscally sustainable minimum road system, contrary to Subpart A of the Travel Management Rule and the 2012 Planning Rule.

Suggested Resolution: Establish motorized route trail density standards to provide for the protection of National Forest Service System Lands, and clear direction to identify and implement a minimum road system over the life of the plan that reflect long-term funding expectations and provide for the protection of National Forest System lands. In addition, the Forest Service should incorporate road specific plan components we provided in past comments, especially in regards to temporary and unauthorized roads.

B. *Best Available Science*

The Forest Service must use the best available scientific information to inform the planning process, and in doing so must determine what information is the most accurate, reliable, and relevant. 36 C.F.R. § 219.3. It must document how the best available information was used, and explain how the information was applied to the issues considered. As set forth throughout this objection, the sections outlining how the analysis of infrastructure plan components fails to comply with NEPA or the ESA, the Forest Service fails to use the best available scientific information.

C. Sustainability & Diversity

[115] FEIS Vol. 2 at 144, Tables 35 and 36.

In our previous comments, we clarified the agency's duty under the 2012 Forest Planning Rule to include appropriate provisions related to ecosystem integrity, sustainability, and diversity of plant and animal communities. We explained the draft revised forest plan improperly relied on flawed population estimates and habitat-based recovery criteria; failed to adequately measure motorized route density and failed to account for impacts; and erroneously uses 1998 as a baselines for grizzly bear recovery.[116] The final Revised Forest Plan fails to correct these deficiencies. Notably, it lacks sufficient standards or guidelines for sustainable infrastructure to maintain or restore the ecological integrity of terrestrial ecosystems in the plan area.[117] It fails to include adequate infrastructure standards or guidelines to maintain or restore the diversity of ecosystems and habitat types throughout the plan area.[118] The revised plan components (forest-wide and species-specific) do not provide the ecological conditions necessary to contribute to the recovery of federally threatened grizzly bears as we detail in subsequent sections and in the attached objection from Dr. David Mattson.[119]

The Forest Service explains the Revised Forest Plan retains grizzly bear management direction from the Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem.[120] The Forest Service suggests grizzly bear recovery is successfully proceeding with a stable population of 714 grizzly bears in 2018.[121] In reality, the GYE grizzly bear population is still listed as threatened, and the Forest Service erroneously suggests that maintaining 1998 habitat conditions will be sufficient for the recovery of the GYE population.[122] The fundamental flaw with this assumption is that instead of working towards maintaining or restoring the ecological integrity of terrestrial ecosystems and diversity of ecosystems and habitat types necessary for the full recovery and long-term viability of grizzly bears, the applicable infrastructure plan components focus on maintaining habitat security per the 2006 Gallatin National Forest Travel Management Plan, but then the Revised Plan includes several exemptions.[123] Specifically, FW-STD-WLGB-01, 02, and 03 provides a loophole allowing grizzly bear habitat security to fall below the flawed baseline levels as long as projects create an equal amount in the same bear management unit.[124] Such no net loss management approaches erroneously assume restored areas can provide habitat security in the short-term equal to areas experiencing new disturbance. Further, undermining grizzly bear recovery is the standard that allows temporary reductions in habitat security, especially the allowance of new temporary road construction.[125] Given the

[116] *Id.* at 10.
[117] 36 C.F.R. § 219.8(a)(1).
[118] 36 C.F.R. § 219.9(a)(2).
[119] See Attachment E.
[120] Revised Plan at 62.
[121] FEIS Vol. 1 at 392.
[122] FEIS Part 1 at 335.
[123] Revised Plan at 63, (FW-STD-WLGB-01).
[124] *Id.,* FW-STD-WLGB-02.
[125] *Id.,* FW-STD-WLGB-03.

Forest Service anticipates the use of past temporary roads that it fails to completely remove, coupled with the use of decommissioned roads it calls "historic," the focus on "new temporary roads" fails to address temporary roads reconstructed on old road templates. In addition, the Revised Plan directs that temporary roads must be closed after three years and then decommissioned after an additional year.[126] While we support placing time constraints on the presence of temporary roads, the Forest Service should clarify the closure and decommissioning must occur after its construction or reconstruction to ensure the standard is not misinterpreted to mean closure would occur after project completion. The importance of such clarification is evident since a temporary road may remain on the ground for several years during project implementation, especially for large, landscape scale projects that may take 10, 15 or more years to complete. The Revised Plan includes a loophole where the temporary road must not reduce habitat security for more than "four ***consecutive*** years."[127] It is likely project activities may include closing a temporary road, and then reopening it as a means to avoid its consecutive use past four years. In this scenario, a temporary road may persist on the ground for years, and its repeated use would reduce grizzly bear habitat security since bears would avoid the road for years as a learned behavior, even if the road was closed. Further, the Forest Service cannot assume road closures will be 100 percent effective, and therefore monitoring must verify temporary roads (and all closed roads for that matter) are not experiencing unauthorized access, and if they are, the Revised Plan must state such illegal access constitutes the road as being open for determining grizzly bear habitat security. In other words, the Forest Service must include temporary roads in its baseline calculations of total habitat security when those roads may physically exist on the ground and include them in open motorized route density calculations when being used for project implementation or accessed illegally. In addition, the Forest Service must clarify that the use of unauthorized roads, whether their status is undetermined, historic or some other internal label, must be treated as new construction.

For these and other reasons specified by Dr. Mattson in Attachment E, the Custer Gallatin National Forest's Revised Land Management Plan fails to conserve grizzly bears on the CGNF and fails to include the plan components or ecological conditions necessary to contribute to the legal fulfillment of grizzly bear recovery. The Custer Gallatin National Forest's Environmental Impact Statement and related Endangered Species Act Section 7 consultation documents also fail to adequately evaluate and analyze the direct, indirect, and cumulative impacts of the Custer Gallatin National Forest Revised Land Management Plan on grizzly bears, grizzly bear habitat, and grizzly bear recovery in the CGNF and larger Greater Yellowstone region.

D. Connectivity

[126] Revised Plan at 63, (FW-STD-WLGB-03).
[127] *Id.* (emphasis added).

Compounding the aforementioned fundamental flaws with the Revised Plan is the lack of sufficient plan components that will ensure grizzly bears and other at-risk species have secure habitat within areas of connectivity as required by the 2012 Planning Rule, all of which we explained in our previous comments. While we support the Forest Service's inclusion of Key Linkage areas in the Revised Plan, overall it lacks the necessary standards and guidelines necessary to achieve the applicable desired conditions. For example, the Revised Plan contains two general wildlife desired conditions specific to key linkage areas and habitat connectivity that we support.[128] Yet, the only standard to achieve the desired condition precludes night-time recreation events in linkage areas.[129] The Revised Plan includes several guidelines related to linkage areas, many of which should be clarified and included as standards. We recommend Revised Plan component FW-GLD-WL-05 be converted to a standard as it is the only one that has clear direction. The remaining guidelines lack the necessary clarity that would enable them to be enforceable, and without such clarification they fail to provide sufficient direction to comply with the 2012 Planning Rule. For example, FW-GLD-WL-01 directs that management actions do not create "movement barriers" except for human and wildlife safety.[130] What constitutes a movement barrier is unclear in the guideline. Certainly excessive motorized route densities would qualify as indicated in our updated literature review.[131] Yet, none of the guidelines include specific direction for road or motorized trail management, and as we discussed above, the Revised Plan lacks any motorized route density standards, particularly within key linkages for grizzly bears or other species. While the Revised Plan components FW-GDL-WL-03 could apply to new motorized trails, it is unclear if it does and the guideline actually allows new recreational developments if they are needed to address ecological resource concerns.[132] Such unspecified caveats render the guideline unenforceable and ineffective. All together, the vague guidelines and lack of standards fail to ensure the Forest Service will be able to achieve its laudable desired conditions related to linkage areas and connectivity. We urge the agency to include specific standards that will provide the level of habitat security necessary to ensure wildlife utilize existing key linkage and connectivity areas, as well as provide direction to provide habitat security in future linkage or connectivity areas that will provide for the recovery of listed species and the long-term viability of species of conservation concern. Such standards must include motorized route densities that will ensure habitat security for grizzly bears in their linkage areas.

E. Monitoring

[128] Revised Plan at 53, (FW-DC-WL-05, 07).
[129] *Id.* at 54, (FW-STD-WL-02).
[130] Id. (FW-GLD-WL-01).
[131] See Attachment D.
[132] Revised Plan at 54.

Under the 2012 planning rules, the Forest Service must develop a monitoring program that enables the responsible official to determine if a change in plan components is needed.[133] Monitoring is meant to increase knowledge and understanding of changing conditions, uncertainties, and risks identified in the best available scientific information as part of an adaptive management framework. The requirement to consider best available science is meant to help identify indicators that address associated monitoring questions, and to further development of the monitoring program.[134] According to the Forest Service's planning directives, the objective of a plan monitoring program is to, inter alia, enable the responsible official to determine if a change in plan components or other plan content applicable to the plan area may be needed, and to inform the management of resources on the plan area, through means such as testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving the plan's desired conditions or objectives.[135]

As we commented previously, the Forest Service's proposed monitoring plan components for roads and motorized use is extremely limited. As we explained, the Revised Plan fails to include an adequate range of questions and lacks sufficient indicators to determine the potential need for changing plan components, especially in regards to forest roads and watershed conditions. Specifically, the FEIS utilized the WCF to describe current conditions, as such, the monitoring plan should also include questions specific to the WCF scores, and rankings for WCC indicators and attributes as we proposed in our past comments. Yet, the Revised Plan, under MON-WTR-01, still lacks any outcome indicators specific to the WCF, including indicators for sediment and temperature to track how well plan components protect and restore water quality. The implementation indicators include the "# of road miles with enhanced roadway drainage erosion control mechanisms," which fails to include the potential benefits achieved through road decommissioning.[136] In other words, focusing only on enhancements fails to include benefits from road removal, or from maintaining existing erosion control mechanisms.

We also commented that the Revised Plan should include stronger monitoring components for infrastructure that include implementation indicators specific to road removal and maintenance. Yet, the Forest Service removed road decommissioning as an objective as therefore does not provide any monitoring corresponding components. The agency should still include a road decommissioning objective, and add a new monitoring indicator to track how many previously decommissioned roads it calls "historic" and proposes for use as temporary roads or adds back to the transportation system. Given the reliance the Forest Service places on road closures to mitigate harmful environmental consequences and aid in the recovery of grizzly bear as well as

[133] 36 C.F.R. § 219.12(a).
[134] FSH 1909.12, § 07.11.
[135] FSH 1909.12, ch. 30.2.
[136] Revised Plan at 188.

other at-risk species, the agency should include motorized route closure effectiveness in the monitoring plan. As it stands, the monitoring plan only includes travel incursions related to the primitive and semi-primitive ROS allocations. The Forest Service needs to track incursions where closures are necessary to meet watershed, riparian, CWN, soils, and wildlife resource objectives and desired conditions.

Further, the monitoring plan fails to ask questions or provide indicators pertaining to the capacity for road maintenance. The monitoring plan needs to ask what are the current funding levels for annual road maintenance and how does that compare with the need for annual maintenance. It also must ask how much is the deferred maintenance backlog and how much is it being reduced on an annual basis. Without tracking the agency's capacity for maintaining its road system there is no way to determine if it's actually cost-effective.

As it stands, the monitoring plan will not enable the responsible official to determine if a change in plan components or other plan content applicable to the plan area may be needed.

Suggested Resolution: Revise the infrastructure plan components to reflect best available scientific information, comply with the 2012 planning rule requirements for sustainability and diversity, and include a monitoring plan with meaningful timelines and parameters that enables the responsible official to determine if a change in plan components is needed. Revise infrastructure plan components to work towards a realistic desired infrastructure that is sustainable and can be managed along with plan components for ecological sustainability, consistent with the planning directives. In addition, we support the suggested resolutions offered by Dr. Mattson in Attachment E.

8. Sustainable Recreation Planning and Management

The 2012 planning rule establishes ecological sustainability as the overarching goal of planning, and directs that land management plans should provide people and communities with ecosystem services and multiple uses that provide a range of benefits – including recreational, educational, and spiritual – for the present and into the future.[137] To achieve this, the rule requires the Forest Service to provide for "sustainable recreation," defined as "the set of recreation settings and opportunities on the National Forest System that is ecologically, economically, and socially sustainable for present and future generations."[138]

In regard to the intersection between sustainable recreation and protecting environmental resources, the planning rule requires plan components, including standards or guidelines, to

[137] 36 C.F.R. § 219.1(c).
[138] Id. § 219.19.

ensure achievement of the substantive provisions related to ecological integrity, sustainability, and diversity.[139] The planning rule also requires the plan to include "plan components, including standards and guidelines, to provide for…[s]ustainable recreation, including sustainable settings...."[140] The Forest Service, therefore, has an obligation to develop plan components guiding the management of recreation settings, opportunities, infrastructure, and access that enable the agency to achieve these substantive provisions.

As it stands, the sustainable recreation plan components fail to comply with the 2012 Planning Rule as we urged they do in previous comments. The 2012 planning rule requires plan components, including standards and guidelines, to ensure achievement of the substantive provisions related to ecosystem integrity, sustainability, and diversity of plant and animal communities.[141] By failing to provide meaningful and clear direction for managing motorized recreation, the revised plan components for sustainable recreation fail to comply with the 2012 planning rule requirements.

A. Failure to incorporate the minimization criteria

In our previous comments we explained the need for the Revised Plan to include components, especially standards and guidelines, that will ensure consistency with the Travel Management Rule or Executive Orders 11644 and 11989 (ensuring travel management planning consistent with the minimization criteria). The Forest Service failed to adequately respond to this comment as evidenced by the lack of such components in any of the specific recreation sections of the Revised Plan. Subparts B and C of the Travel Management Rule (TMR) require that motorized use occur only on a designated system of roads, trails and areas. The Executive Orders establish that off-road vehicle trails and areas must be located to minimize damage to forest resources and existing and potential recreation uses. The executive orders also include protective mechanisms designed to ensure that off-road vehicle designations are not impairing the protection of public lands. Specifically, they obligate the Forest Service to: 1) periodically monitor the effects of off-road vehicle use, and based on the data amend or rescind the off-road vehicle designations, and 2) immediately close areas and trails to off-road vehicle use if the Forest Service determines that the use of off road vehicles "will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands … until such time as [the agency] determines that such adverse effects have been eliminated and that measures have been implemented to prevent future recurrence."

[139] 36 C.F.R. §§ 219.8(a) and 219.9
[140] 36 C.F.R. § 219.10(b)(1)(i)
[141] 36 C.F.R. §§ 219.8, 219.

Although travel management for the most part is decided in conforming project-level plans and decisions, land management plans should reinforce the travel management rule's provisions and requirements in standards, and provide the necessary detail on how the Forest Service will carry out and comply with the executive order provisions. Additionally, to the degree land management plans allocate areas as suitable for motorized use, the Forest Service must ensure the Revised Plan includes standards that will meet the 2012 Planning Rule's requirements for ecological sustainability and diversity of species. Incorporating the minimization criteria as enforceable standards and guidelines is the best approach as we explained in previous comments. Specifically, the plan must include standards that establish the Forest Service will apply the Executive Order minimization criteria to projects that propose to create or modify off-road vehicle area or trail designations. Application of the criteria requires the Forest Service to demonstrate how each area and trail as well as the aggregate system minimizes – not just considers – impacts to forest resources and other existing and projected recreation uses.

To the extent that motorized recreation occurs on system roads, plan components must ensure that such access and use is sustainable. To that end, it is necessary to also apply the minimization and monitoring concepts in the Executive Orders to motorized recreation occurring on roads. Specifically, standards and guidelines should ensure that:

- all motorized designations minimize impacts;
- are periodically monitored, reviewed, and modified as needed; and
- are modified immediately when considerable adverse damage is occurring.

These plan components are necessary to ensure that recreation is sustainable regardless whether it occurs on a trail, in an area, or on a road. Yet, the Revised Plan lacks any components incorporating the minimization criteria. Such failure means that the Forest Service has not met its requirements to provide for sustainable recreation. For example, the Revised Plan includes a general desired condition that states recreational uses "have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species."[142] As laudable as this is, the Revised Plan fails to include any standards or guidelines necessary to achieve the desired condition. Rather it relies on suitability and ROS allocations, which fails to address off road vehicle use, including over-snow vehicles, in areas available for motorized recreation.

B. Sustainability, Diversity of Plant and Animals

[142] Revised Plan at 89, (FW-DC-REC-05).

The lack of standards to incorporate the minimization criteria compounds the Revised Plan's additional failure to ensure recreational components comply with the 2012 Planning Rule's requirements for sustainability and diversity of wildlife.[143] As it stands, the revised plan fails to include standards or guidelines for sustainable recreation that will maintain or restore the diversity of ecosystems and habitat types throughout the plan area.

Grizzly bears

The Revised Plan directs that OSV use inside the grizzly bear recovery area is a suitable use "unless such use results in grizzly bear den abandonment, or bear-human conflicts shortly after den emergence, or new research identifies a threat."[144] Yet, the monitoring plan fails to include a question or indicator specific to den abandonment or conflicts, and it is unclear what evidence the Forest Service would require for demonstrating OSV use is no longer suitable. Further, as we explained in previous comments, ample science already exists showing the harmful effects of OSV use on grizzly bears, especially during the spring season when grizzly bear den emergence coincides with ongoing snowfall and OSV use. See our prior comments for specific impacts to grizzly bears from motorized winter recreation, along with supporting citations. As such, the Forest Service should revise its suitability component to clarify OSV use is not suitable in grizzly bear denning habitat.

In addition, ***outside*** of the recovery area the revised plan fails to protect denning grizzly bears from winter motorized recreation; to protect grizzly bears emerging from dens that are outside of Montana state's modeled denning habitat; or to protect grizzly bears denning or emerging from dens. Moreover, the Revised Plan fails to include any standards or guidelines that will ensure motorized use does not harass grizzly bears or significantly disrupt grizzly bear habitat outside the recovery zone, especially in key linkages. As such, the Revised Plan's lack of standards and guidelines constitutes a failure to adequately contribute to grizzly bear recovery or maintain ecological conditions on the CGNF that will maintain a viable population of grizzly bears within its range.[145]

Further, the inclusion of a new approach to developed site standards without the opportunity for the public to review this new definition is a violation of law. The inclusion of the "footprint approach" is new since the last opportunity for public comment, and has yet to be approved by the Yellowstone Ecosystem Subcommittee (YES) of the Interagency Grizzly Bear Committee (IGBC). By adopting standards that will allow for an increase in developed sites, the Forest is working against its mandate to protect endangered species. It is well documented throughout the

[143] 36 C.F.R. §§ 219.8(a) and 219.9.
[144] Revised Plan at 66, (FW-SUIT-WLGB-1.c.).
[145] 36 C.F.R. § 219.9(b)(2).

FEIS and in the scientific literature that conflicts with humans are a leading cause of grizzly bear mortality. Yet, the Forest is trying to incorporate "pending changes to the conservation strategy that would allow greater management flexibility to increase the number and/or capacity of developed sites to address recent unprecedented human population growth (in both permanent and seasonal residents) in the Greater Yellowstone Ecosystem, as well as dramatic increases in visitor use of public lands (Yellowstone Ecosystem Subcommittee 2016b, Developed Site Technical Team 2019)."[146]

While the recognition of different sizes and uses between sites is important, this should not be used to incorporate flexibility in increasing site capacity, particularly since this version of the developed site standards has not been subject to public review and comment, nor approved by the YES.

Canada lynx

The Revised Plan's failure extends beyond grizzly bears as it lacks any standards or guidelines protecting Canada lynx from recreational use, in particular over-snow vehicle use. The Forest Service also failed to provide the necessary analysis that would have supported such plan components. In particular, the agency failed to sufficiently analyze how allowing motorized access (both summer and winter) into areas occupied by lynx directly, indirectly and cumulatively (in conjunction with other plan-level and site-specific level activities, including vegetative treatments/management) impacts the species. The Forest Service failed to adequately analyze and examine motorized ROS allocations and existing motorized designations within each LAU to determine the level of stress imposed on lynx in these areas and to compare and contrast lynx occupancy within LAUs vis-a-via the amount of motorized use. The FEIS also failed to adequately consider that as snow levels diminish with climate change, dispersed use of over snow vehicles will become more concentrated in those snowy areas still remaining – exactly where lynx are trying to persist as well. Winter recreation will thus continually become a more serious threat to the persistence of the population over time. In addition, human access via forest roads can increase the potential for mortality or injury of lynx captured incidentally in traps targeting other species or through illegal shooting. The LCAS agrees that open roads can increase lynx vulnerability to hunting, trapping and/or poaching. The Forest Service must therefore take a hard look at this indirect impact. We request that the number of miles of roads and trails open to motorized use within mapped lynx habitat be analyzed in the EIS as part of the forest plan revision. Such analysis would undoubtedly support the need to include specific standards that direct motorized designation must be done in a manner that minimizes harassment of Canada lynx or significant disruption of its habitat.

[146] FEIS volume 1 at 424

Wolverine

Our previous comments explained the need to protect wolverine maternal denning habitat from OSV use by identifying those areas as unsuitable for winter motorized use and include a standard to minimize wolverine harassment and significant disruption of wolverine habitat. The Revised Plan lacks such direction and as such fails to conserve the species as required under the 2012 Planning Rule.[147]

The best available science, including every published peer-review paper on the topic, reveals the wolverine – a snow-dependent species – is threatened by climate change.[148] The science also reveals wolverines are threatened by an extremely small population size (only 250-300 remain in the contiguous United States) and by the cumulative effects of multiple threats. See Id. In addition, the best available science (all of which was already provided and/or is in the record) reveals that dispersed recreational activities – especially winter recreational activities – have the potential to adversely impact wolverine because they disrupt and limit use of wolverine natal denning areas.[149]

Because the Custer-Gallatin National Forest remains one of the few remaining places in the contiguous United States that is still home to wolverine, it is in a unique position to make positive strides in wolverine conservation. It is critical, therefore, that the revised forest plan and FEIS: (a) carefully analyze and consider how its plan components directly, indirect, and cumulatively impact wolverine on the forest in both the short and long term; and (b) take affirmative, proactive steps within its control and authority to eliminate or reduce the number of non-climate stressors on the species. As written, however, the revised forest plan adopted by the draft ROD falls short. So too does the Service's EIS analysis of impacts to wolverine.

The Service's 2012 planning rule implementing NFMA, tasks the forest with the obligation to determine whether or not the components (both ecosystem and species-specific) included in the revised plan – including whether the proposed standards, objectives, desired conditions and guidelines – "conserve" wolverine, a species currently proposed for listing under the ESA.[150]

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[147] 36 C.F.R. 212.9(b)(1).
[148] See Defenders of Wildlife v. Jewell, -- F.Supp.3d – , 2016 WL 1363865 (D. Mont. 2016) (discussing best available science regarding climate change threats); 78 Fed. Reg. 7864 (February 4, 2013)(proposed rule to list wolverine); McKelvey (2011); Copleland (2010). Attachment F
[149] See Heinemeyer (1999), Heinemeyer (2001), Heinemeyer (2012), Heinemeyer (2013), Heinemeyer (2014), Heinemeyer (2015), Stewart (2016); Heinemeyer (2017); Heinemeyer (2019). Attachment F
[150] 36 C.F.R. § 219.9 (b).

For the purposes of 36 C.F.R. § 219.9, "conserve" means to protect, preserve, manage, or restore natural environments and ecological communities to potentially avoid the federal listing of proposed and candidate species. 36 C.F.R. § 219.19. This means the forest must do more than merely maintain the status quo and existing population numbers of wolverine on the forest (which the best available science reveals are already dangerously low). The forest – through the forest plan revision process – must take proactive steps to avoid federal listing of wolverine in order to "conserve" the species. This duty to "conserve" wolverine must inform and drive all management decisions concerning wolverine and other species proposed for listing or candidate species. Persistence and survival of wolverine is insufficient; the Custer-Gallatin National Forest must provide ecological conditions necessary to avoid listing. The revised forest plan, however, fails to include the necessary ecosystem components (standards, guidelines, desired conditions and objectives) to "conserve" wolverine. No enforceable standards exist – at all. Rather, the Revised Plan includes a guideline that there be no increase in winter route designations, which omits OSV area designations. Further, the guideline retains existing OSV designations which fails to account for the fact that the Gallatin Travel Plan is now 14 years old and therefore does not consider the best available science, some of which the Forest Service references in the FEIS. As such, these winter motorized uses are "grandfathered" in the Revised Plan without consideration of the wolverine's current status and without incorporation of the best available science as required by NEPA and the travel management rule. Further, the Forest Service has yet to comply with the TMR subpart C in the other travel plans. Therefore, the Revised Plan's supporting analysis in the FEIS lacks the specificity to support existing OSV use in the planning area, which is why we urged the Forest Service to include an objective to update existing travel plans to comply with the TMR subpart C provisions that reflect the best available science.

Further, because the revised plan's ecosystem components are insufficient to ensure the conservation of wolverine – as written – the 2012 planning regulations direct the Service to develop "species specific plan components," including specific standards and guidelines for the species.[151] But no such specific-specific standards are included in the draft ROD. This is major oversight. The forest must develop and adopt meaningful standards to manage wolverine and not simply rely on vague, unenforceable desired conditions and guidelines.

In addition, the forest cannot (and has not explained how it can) comply with its obligations to manage for a diversity of species, including its duty to "contribute to the recovery" of federally protected ESA species and "conserve" candidate species and species proposed for ESA listing, see 36 C.F.R. § 219.9(b), like wolverine, in the absence of enforceable and meaningful standards.

[151] 36 C.F.R. § 219.9(b).

Now that a sizeable body of research about the habitat and life-cycle needs of wolverines is available, and given the importance the Custer Gallatin National Forest plays in wolverine conservation, the forest should exercise its authority under NFMA, comply with its legal obligations under the 2012 planning rule to "conserve" wolverine, 36 C.F.R. § 219.9(b), and adopt protective standards for wolverine as part of the revision process. This would include standards designed to protect denning habitat, protect wolverine from trapping, restrictions on travel planning, standards to preserve connectivity, and other standards designed to protect wolverine from human disturbance.

In addition, the Forest Service should work with the U.S. Fish and Wildlife Service ("FWS") and other experts to prepare a Wolverine Conservation Assessment and Strategy ("WCAS"), enter into conservation agreements with the agencies, and then develop region-wide management direction for wolverine including a Northern Rockies Wolverine Management Direction that amends all Forest Plans within occupied wolverine habitat.

Restoring and maintaining connectivity among species like wolverine that are threatened by climate change is critical to "conserving" the species and should be one of the highest management priorities for the Custer-Gallatin National Forest. Wolverines in the contiguous United States likely exist as a meta-population. As explained by FWS, a meta-population "is a network of semi-isolated populations, each occupying a suitable patch of habitat in a landscape of otherwise unsuitable habitat. . . . Meta-populations require some level of regular or intermittent migration and gene flow among subpopulations, in which individual populations support one another by providing genetic and demographic enrichment through mutual exchange of individuals. Individual subpopulations may go extinct or lose genetic viability, but are then 'rescued' by immigration from other subpopulations, thus ensuring the persistence of the meta-population as a whole."[152] Some of the subpopulations within this meta-population – including those inside the Custer-Gallatin National Forest – are extremely small and vulnerable, with some consisting of less than 10 individuals.[153]

According to the best available science, if the meta-population dynamics break down, either due to changes within the subpopulation or due to the loss of connectivity (from climate change or development) then "the entire meta-population may be jeopardized due to subpopulations becoming unable to persist in the face of inbreeding or demographic and environmental stochasticity."[154] Therefore it is extremely important that the Revised Plan include components, especially standards, that provide for the protection of key wolverine linkages. In fact the Forest Service acknowledges the importance explaining,

[152] 75 Fed. Reg. at 78031.
[153] 78 Fed. Reg. at 7867.
[154] 78 Fed. Reg. at 7867.

> Another area for wolverines has been coined the "Central Linkage Region" by Inman et al. (2013).This region includes the Bridger, Bangtail, and Crazy Mountains Geographic Area, which could be highly important for wolverine metapopulation persistence, because its position on the landscape may provide habitat connectivity and linkage between large contiguous blocks of suitable wolverine habitat to the north and south.[155]

As such, it is extremely important for the Service, in concert with other federal (BLM, FWS, Forest Service, Park Service) and state land management agencies to take any and all available steps to maintain, protect and restore connectivity between isolated subpopulations of wolverine. Existing "linkage zones" between subpopulations of wolverines within and adjacent to the Custer-Gallatin National Forest should be identified and protected, especially when those areas overlap with public lands (federal or state). So too should corridors or linkage zones between subpopulations in Montana and the contiguous United States and populations to the north in Canada.[156]

According to FWS, "The apparent loss of connectivity between wolverines in the northern Rocky Mountains and Canada prevents the influx of genetic material needed to maintain and increase genetic diversity in the contiguous United States. The continued loss of genetic diversity may lead to inbreeding depression, potentially reducing the species' ability to persist through reduced reproductive output or reduced survival."[157]

As noted by Brock (2007), safe places where wolverines can find food, shelter, and security while moving across the landscape between areas of suitable habitat must be identified and protected. "Appropriate management of wolverine linkage zones in public ownership . . . is crucial."[158] The revised forest plan, however, fails to include any meaningful direction or standards for maintaining and restoring connectivity or protecting linkage zones for wolverine.

Suggested Resolutions: Adopt forest-wide directions as we specified in our Draft EIS comments and in particular:

- standards that will protect Key Linkages from motorized disturbance for wolverine, lynx and grizzly bears;
- specify that OSV use is not suitable in grizzly bear or wolverine denning habitat; and

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[155] FEIS Vol. 1 at 459.
[156] 78 Fed. Reg. at 7885.
[157] *Id*.
[158] Brock, B. L., R. M. Inman, K. H. Inman, A. J. McCue, M. L. Packila, and B. Giddings. 2007. Broad-scale wolverine habitat in the conterminous Rocky Mountain states. Chapter 2 in Greater Yellowstone Wolverine Study, Cumulative Progress Report, May 2007. Wildlife Conservation Society, North America Program, General Technical Report, Bozeman, Montana, USA at 30. Attachment F.

- include a standard that all off-road vehicle designations made through implementation - level travel planning will be located to minimize resource impacts and conflicts with other recreational uses.

Thank you for the opportunity to submit our objections and we look forward to hearing from you regarding the objection resolution process. Please include the signatories as interested parties for all future communications.

Sincerely,

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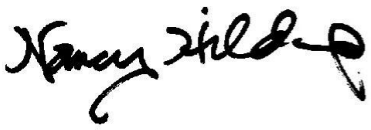

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Attachments

- Attachment A - Livestock Grazing, Affected Environment, and Environmental Consequences; Forest Plan Implementation and the NEPA Shell Game; Vacant Allotments and Voluntary Permit Retirement; Livestock Grazing Standards and Guidelines
- Attachment B-Livestock and Grazing Coexistence
- Attachment C - Wildlife
- Attachment D - The Environmental Consequences of Forest Roads and Achieving a Sustainable Road System (March 2020) with cited articles
- Attachment E - Dr. David Mattson Objection and cited literature
- Attachment F - Wolverine citations