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Comments:

Dear Plan Revision Reviewing Officer,

Please accept the attached comments on behalf of Western Watersheds Project.

Thanks,

Josh Osher

Western Watersheds Project ([ldquo]WWP[rdquo]) is pleased to provide comments in response to the Custer Gallatin National Forest[rsquo]s ([ldquo]CGNF[rdquo]) Draft Environmental Impact Statement ([ldquo]DEIS[rdquo]) and Draft Forest Plan ([ldquo]DFP[rdquo])

WWP is a nonprofit organization dedicated to protecting and restoring western watersheds and wildlife through education, public policy initiatives, and legal advocacy. With over 5,000 members and supporters throughout the United States, WWP actively works to protect and improve upland and riparian areas, water quality, fisheries, wildlife, and other natural resources and ecological values, including the subject areas within Custer Gallatin National Forest.

In addition to the comments contained herein, WWP incorporates by permission and by reference the comments submitted by the Alliance for the Wild Rockies, the Buffalo Field Campaign, the Prairie Hills Audubon Society, and George Wuerthner.

Scoping

Western Watersheds Project submitted detailed scoping comments for the CGNF Proposed Action including providing scientific studies as requested by the Plan Revision team. Unfortunately, the DEIS and DFP do not reflect any of the recommendations made by WWP nor is the analysis significantly expanded from the

assessment phase to the DEIS. Therefore, we incorporate our scoping comments by reference to be considered again as they relate to the current DEIS and DFP. Issues discussed in detail in the scoping comments will not be reiterated here. Additional comments relating to specific aspects of the DEIS and DFP are as follows:

## Purpose and Need for Action

In addition to the failure of the DEIS to express a need for action based on the failure of the previous forest plans to significantly improve degraded conditions on the National Forest or even to require and accomplish adequate monitoring to identify the ecological condition of the landscape in a manner that allows for trend determination, the Purpose and Need for Action sections fails to mention adaptation to climate change as a changed circumstance that requires action. While climate change is moderately addressed in the DEIS, the emphasis on creating a management paradigm to address the myriad threats to ecological, economic and social health is severely lacking.

## Climate Change, Soil Carbon Sequestration, Livestock Grazing, Invasive Annual Grasses

WWP's scoping comments contained detailed analysis about the connection between climate change and livestock grazing. Unfortunately, the DEIS contains almost no analysis about this relationship other than to suggest that climate change may impact available forage and therefore could impact annual management of grazing allotments. However, this is far from the only aspect of climate change in relation to livestock grazing. The best available scientific evidence, most of which was already provided to the Plan Revision team, indicates that livestock grazing exacerbates the negative impacts of climate change on soils, vegetation, water quality, water temperature and stream function and thus the host of associated aquatic and terrestrial wildlife species.

To supplement the material already provided, some additional analysis of the potential for climate change to support the increased spread of annual invasive plants such as cheatgrass is provided below.[1] Note the large potential expansion area in the CGNF. In addition to cheatgrass, medusahead rye and ventenata are expanding into Montana and will be encouraged by both climate change and current livestock grazing practices. Neither species is even mentioned in the DEIS. These plants have the ability to fundamentally change the landscape of the NF and deserve specific attention.

It is interesting to note that the CGNF chose to address soil carbon sequestration but utterly failed to identify the factors that have reduced the capacity of soils to sequester carbon, specifically continuous livestock grazing. The DEIS further fails to identify one of the simplest, proven, low-tech solutions to increase soil carbon storage and restore degraded landscapes [ndash] the removal of livestock. Numerous scientific studies and reviews support this conclusion:

\* [ldquo]The results of our work indicate that sagebrush restoration may have the potential to offset 23% of annual US carbon emissions.[2]

\* [ldquo](G)razing exclusion is an effective ecosystem restoration approach to sequester and store carbon in the living biomass and soil profiles.[rdquo][3]

\* [ldquo]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 (Wu and others 2008, citing Jones and Donnelly 2004)[rdquo].[4]

\* [ldquo]The elimination of perennial understory vegetation and cryptobiotic crusts is a nearly inevitable consequence of livestock grazing in deserts. This opens these systems to annual grass invasion, subsequent burning, and loss of a major carbon sink, a heavy price to pay for the minimal economic gains derived from direct use of these intrinsically unproductive lands for livestock production.[rdquo][5]

\* [ldquo]While continuous overgrazing in the erosion-prone desert steppe is detrimental to soil and vegetation, this can be reversed and significant increases in soil fertility, cover, and biomass can be achieved by grazing exclusion.[rdquo][6]

\* [ldquo]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 (White et al., 2000; Paruelo et al., 2010) where it is usually better protected from atmospheric release than carbon stored in vegetation..[rdquo][7]

Conversely, active restoration approaches, particularly those that involve increased grazing, often lead to negative consequences that exacerbate the existing problems.

\* [ldquo]Reisner et al. (2013) found that livestock grazing increases cheatgrass dominance in sagebrush steppe, livestock grazing is not likely a viable tool for reducing cheatgrass dominance because it promotes cheatgrass invasion, and reduced grazing may be one of the most effective means of conserving and restoring imperiled sagebrush ecosystems.[rdquo][8]

\* [ldquo]While active restoration approaches in herbivory-degraded landscapes may have some utility, such projects are often small in scope, expensive, and unlikely to be self-sustaining; some can cause unanticipated negative effects (Kauffman and others 1997).[rdquo][9]

\* [ldquo]Campbell et al. (2012b) suggest that expanding juniper woodlands in Oregon are sequestering carbon and that treatments removing trees do not mitigate carbon loss from forest fires.[rdquo][10]

\* [ldquo]Disturbance by shrub removal (root ploughing) and/or livestock grazing significantly reduced the amount of soil organic carbon (SOC). The most disturbed treatment (grazed and ploughed) contained the least SOC (15.30 Mg C ha<sup>-1</sup>) while protection from grazing and shrub removal led to the greatest SOC (28.49 Mg C ha<sup>-1</sup>).[rdquo][11]

In terms of the effectiveness of removing livestock to recover degraded rangelands, a picture is worth a thousand words.

Photos from Hart Mountain National Wildlife Refuge [ndash] 25 years after the removal of livestock:[12]

## Forest Plan Implementation and the NEPA Shell Game

The DEIS and DFP repeatedly state that livestock grazing will continue as currently authorized until site-specific analysis is conducted to create or revise allotment management plans. The only exception is the immediate implementation of the 4- to 6-inch stubble height guideline in certain Rosgen E and C channels

[ldquo]The grazing prescription in each allotment would remain the same as it is currently, and permitted AUMs for each active allotment is not expected to increase or decrease unless changed through a site-specific analysis or allotment management plan update. However, a permit modification to all permits would incorporate the end of season 4- to 6-inch stubble height guideline in low gradient riparian greenline areas under all revised plan alternatives.[rdquo][13]

Numerous further instances exist in the DEIS that reiterate this position:

Desired conditions for livestock grazing emphasize sustainable grazing, stable soils, diverse vegetation and native plant communities, as well as riparian and wetland health. Movement toward these conditions would be achieved through implementation of the standards and guidelines for grazing and the other resource areas. Necessary changes to move towards desired conditions would be determined and implemented at the allotment management plan/project level. (emphasis added)[14]

and;

None of the revised plan alternatives change existing allotment management or provide specific direction regarding current livestock management. No allotments or portions of allotments are proposed for closure to grazing due to other resource needs. Under all revised plan alternatives, changes to livestock management and allowable forage use levels at the site-specific scale would be made during allotment management plan revision. Furthermore, resource mitigations and best management practices are part of allotment plans designed to protect or mitigate forest resources from potential disturbances by livestock grazing. These elements are site-specific for each allotment and not part of this analysis.(emphasis added)[15]

So without site-specific analysis and specifically a revision to an allotment management plan that must be completed through a NEPA compliant process, none of the plan direction for vegetation, riparian resources (with the exception of the stubble height requirement), wildlife, and grazing will take effect or receive consideration. Grazing will continue as usual. When permits expire, they will be automatically renewed for a new 10-year term under the same terms and conditions of the existing permit under the language in the Rescissions Act or FLPMA Section 404 (c)(2).

In fact, the DEIS clearly states that Forest Service has no intention of revising any existing allotment management plan or grazing permit conditions except for those allotments when NEPA analysis has never been completed.

Some level of allotment management planning has been completed on nearly all of the 234 active and vacant allotments on the Custer Gallatin National Forest. About 91 percent or 212 allotments (active and vacant) have had National Environmental Policy Act environmental analysis. Currently, the 22 allotments (15 active and 7 vacant) that have not had environmental analysis conducted have been scheduled for revision over the next 10 years. Other allotments may also have priority needs for assessment as well.[16]

A look at the National Allotment NEPA Schedule for 2017-2028 essentially confirms that Forest only plans to analyze or revise grazing permits on 28 total grazing allotments through 2028.[17] Many of these allotments are currently vacant indicating that the only changes in management would occur if grazing were authorized. Furthermore, the expected date for NEPA analysis on many of the allotments is 2019. To date, the Forest has not completed a single NEPA analysis this year and the only allotments that are in progress are the East Paradise allotments which are currently vacant. The remainder are scheduled for 2022. According to the schedule, once these NEPA analyses are completed, the Forest has no plans to conduct further NEPA on any grazing allotments until at least 2029. By that time, roughly half of all the allotments on the CGNF will have AMPs or other analysis that is over 30 years old. The vast majority of the remaining allotments analyses will be 20 years old or more.

The Forest is violating the National Environmental Policy Act, 42 U.S.C. [sect]4321 et seq. and its implementing regulations, 40 C.F.R. [sect]1500 et seq., by issuing grazing permits and making important grazing management decisions on allotments throughout the Forest without compliance with NEPA's environmental analysis or public participation requirements; and by failing to revise their outdated AMPs. This fact is not remedied by the revision process but is rather exacerbated by the clear direction to continue issuing status quo grazing permits that do not conform with the revised plan.

The direction in the DFP and the discussion in the DEIS 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.

The problems with deferring any action to site-specific analysis are manifold given the tremendous impact livestock grazing has had on the ecological conditions of the CGNF. WWPs scoping comments examined in detail the impacts of grazing in general and specifically in relation to the forest's assessment reports. Unfortunately, the DEIS analysis of grazing is sparse to say the least and ignores the degraded conditions that currently exist and are being exacerbated by current livestock grazing. However, some sections of the DEIS are telling. For example:

Measurements gathered from woody draw health surveys were used to generate estimates of conditions. On the Sioux District, 137 sites (acres not determined) were inventoried of which 21 percent were found to be functioning, 63 percent were at-risk, and 22 percent were nonfunctional. On the Ashland District, of the 299 acres inventoried, approximately 16 percent were considered healthy, 59 percent considered at-risk, and 25 percent considered nonfunctional. Legacy issues such as unmanaged grazing during the turn of the 20th century

have contributed to current conditions.[18]

It is disingenuous to say that current livestock grazing is not also a causal factor for the degraded conditions described above. In looking at table 73 in the DEIS, 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.

Furthermore, the DFP contains the following desired condition which specifically relates to green ash woodlands as well as other sensitive areas:

Non-grazed areas represent reference conditions (natural or near natural conditions) in locations where reference habitats do not currently exist or are locally underrepresented, such as riparian, woody draws, ecotonal habitats, and upland vegetation.[19]

However, without a revision of AMPs it will be difficult if not impossible to establish such areas which will require new fencing or grazing management.

Several solutions are available to the Forest Service to remedy this problem. First, the DEIS could 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 could 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 could implement interim standards similar to the stubble height guideline but also including all riparian areas with Allowable Use Limits ([ldquo]AULs[rdquo]) 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.

Vacant Allotments and Voluntary Permit Retirement.

Alternative D is on the right track when it comes to vacant allotments. However, this still does not go far enough. The DEIS should have analyzed an alternative that closes all vacant allotments that are not currently being considered for forage reserves. Further, any vacant allotments in connectivity corridors or in the Primary Conservation Area for grizzly bears should be closed 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.

Furthermore, as mentioned in WWP's scoping comments, the DEIS should have analyzed an alternative that allows for the permanent retirement of grazing allotments that are waived by the permittee for the purpose of permanently ending grazing on that allotment. 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 permit retirement may also assist in created reference areas as directed by the desired condition on such discussed above. Again, the land use planning process is the perfect opportunity to examine changing allocations as a result of conservation efforts such a permit retirement.

## Bighorn Sheep

### SCC

#### \* Intro

\* Bighorn sheep must be listed as SCC, and the Forest Service should select modified Alternative D which includes enhanced standards for bighorn sheep.

#### \* Rangewide Threats

\* The primary threats to bighorn sheep viability are well established, and the effects of those threats on bighorn populations are evident throughout the species's range. Bighorn sheep populations Westwide remain at less than 10% of historic numbers despite more than a half century of restoration and reintroduction efforts, and many bighorn herds occur as small, isolated populations. While the Custer-Gallatin National Forest states that "[d]isease-related die-offs and lowered lamb recruitment periodically affect individual herds throughout the west, including some on the Custer Gallatin [rdquo] [DEIS at 429], disease related die-offs are in fact widespread, occurring annually and concurrently, not periodically. Recruitment losses are likewise widespread and chronic, not periodic. Low or null recruitment rates hamstring populations Westwide, often lasting for a decade or longer, and the loss of lamb recruitment following a catastrophic die-off can, and does, lead to total local extirpation of bighorn herds. Those herds that are not extirpated become potential vectors of domestic sheep pneumonia pathogens and may be culled to prevent further die-offs. While it is technically true that "[t]he distribution of bighorn sheep has improved [rdquo] [Id.] as a result of 20th Century restoration efforts, the Forest Service's 2010 determination that "[w]ith the exception of bison, the bighorn is the native ungulate in R1 with the most reduced numbers and range relative to pre European colonization [rdquo] [20] more accurately conveys the species's condition. This mischaracterization of the species's rangewide status throughout the DEIS fails to acknowledge the ongoing threats to the species's persistence, obscures Federal land management agencies' role in perpetuating those threats, and misleads the public by minimizing the causes, extent, and severity of the issue.

#### \* Regional Threats

\* Bighorn sheep were designated as a Sensitive Species in Forest Service Region 1 nearly a decade ago, when the Forest Service recognized population trends indicating that inaction may necessitate ESA listing, and when the Regional Forester determined that substantial threats to viability exist throughout Montana. In the 2010 Region 1 Sensitive Species assessment, the agency concluded that "[d]Montana had approximately 5,700 bighorns prior to the dieoffs occurring over the last year, with historic numbers estimated at well over 100,000. The six dieoffs in MT represent 55% of the dieoffs occurring nationwide in bighorns over the last year (11 in total). Four of the dieoffs occurred prior to 2010's lambing season. Preliminary surveys indicate that in three out of the four dieoff populations lamb survival through mid summer is between zero and "[v]ery low [rdquo]. These dieoffs contributed to a statewide decline of between five and 10 percent over a short time period, indicating the volatility of the situation and the vulnerability of populations. [Id.] In the intervening years, neither the volatility or vulnerability has abated.

#### \* CGNF Threats

\* Specific threats to each bighorn herd occur on or adjacent to the Forest, as detailed in previous comments by WWP and others, and those threats contribute to substantial concern for the persistence of bighorn sheep forestwide. Domestic sheep and goats on private lands, habitat loss, pathogens carried by cattle[21], disturbance resulting from commercial or recreational use, disease transmission from other bighorn herds, and even severe weather impact bighorn sheep populations. Additional threats from climate change, and from wildlife species which could serve as intermediate disease vectors between domestic sheep and bighorn sheep[22] may exacerbate known risks or pose new ones. No plan alternative adequately addresses these threats.

\* Another factor likely to significantly affect bighorn persistence over the long term is the continued isolation of herds. The Forest Service's statement, in the Terrestrial Species SCC evaluation, that occurrence of bighorn sheep in small isolated populations [ldquo]is typical for this species[rdquo] is misleading, and its inclusion in the SCC assessment report again deprives the public of meaningful opportunities to understand and provide comment on Federal management of public resources. While many populations, including most of those in Montana, do currently occur in small, isolated populations, this state is an artifact of more than a century of anthropogenic impacts on the species and its habitat, and not a naturally occurring trait of bighorn sheep. The Forest Service here fails to utilize the Best Available Science regarding the historic metapopulation structure of bighorn sheep herds.

\* Small population size and isolation increase the risk to bighorn sheep in multiple ways, none of which are disclosed in the SCC assessment or DEIS or addressed through the proposed plan alternatives. The DEIS must contain an assessment of the potential for genetic isolation and inbreeding to contribute to reduced breeding success, reduced adaptability to climate change and landscape disturbance, reduced overall fitness, the perpetuation of deleterious alleles, and the increased likelihood of extirpation as a result of stochastic disturbance. It must consider genetic fitness in the context of the precipitous 19th-century Westwide declines that constituted a genetic bottleneck for the species, of the reestablishment of Montana's majority small, isolated populations from limited source stock, and of the ongoing threats to individual populations on National Forest lands Westwide. It must disclose the cumulative effects of genetic isolation on federal lands and as a result of federal management across the species's range. Habitat and population management standards must be included which prioritize the recovery of the metapopulation structure under which bighorn sheep evolved. Standards addressing genetic isolation and promoting natural dispersal must be included in the selected alternative.

## Plan Components

### \* Vacant Allotments

\* A mechanism for permanent closure of currently vacant allotments must be included in the selective alternative to increase the likelihood of persistence of bighorn sheep. Legislative action to restock vacant allotments has been proposed numerous times, and will likely be proposed in the future. Should such action direct the Forest Service to restock vacant allotments on the Custer-Gallatin National Forest, the consequences to bighorn sheep would be dire. The Forest Service is required to consider all reasonable alternatives, even when aspects of those alternatives fall outside the jurisdiction of the Forest Service (40 CFR 1502.14). The Forest Service must recognize the tenuous situation of domestic sheep allotments held vacant but not closed, and act to eliminate the risk posed by those allotments to bighorn populations on the Forest.

\* Because threats to bighorn sheep are not limited to those posed by domestic sheep and goats on public lands, the Custer-Gallatin National Forest's efforts to vacate domestic sheep allotments, though laudable, are not sufficient to protect the species. Bighorn sheep die-offs have occurred on National Forest lands even when domestic sheep were not located nearby, including all those that occurred in Montana during the winter of 2009-2010, illustrating the inadequacy of the Forest Service's apparent determination that a lack of domestic sheep or goats on the Forest will ensure the species's persistence.

\* No plan alternative adequately addresses the need for reintroduction or natural expansion of bighorn sheep into unoccupied historic habitat. Bighorn sheep populations are limited in both size and distribution, with a lack of suitable, disease-vector-free unoccupied habitat standing as a major limiting factor to the species's recovery across its range. Domestic sheep and goats must be prohibited from use on historic bighorn range to prevent entrenchment of bighorn-limiting activities in those areas, and the Forest Service must engage other land management agencies and private landowners in efforts to enhance habitat suitability in areas where bighorns may pioneer or be reintroduced.

\* The DEIS fails to disclose the probability and potential effects of changes to landscape permeability on bighorn sheep. Fire, insects, pathogens, and the effects of climate change on vegetation have the capacity to



alter the distribution and density of barriers to bighorn sheep movement, including at the public-private interface where domestic sheep on private lands may come into contact with bighorn sheep on public lands. If bighorn sheep are not designated as SCC, it is unlikely that consideration of permeability and its consequences would be included during the analysis of site-specific vegetation management projects. Failure to consider how such projects may increase the disease risks to bighorn sheep from domestic livestock on private lands increases the likelihood of die-offs on the Forest.

\* Conversely, changes to landscape permeability from the aforementioned factors may positively affect bighorn sheep when those changes result in more open space in the interior of the forest or at the boundary to suitable habitats not occupied by domestic livestock. Standards promoting natural and artificial vegetation alteration, including those which would allow natural fires to burn where appropriate, are necessary to promote the recovery and expansion of suitable habitat for bighorn sheep should be included in the selected alternative.

#### \* Conclusion

\* Bighorn sheep are at risk across their range, including throughout Montana and on the Custer Gallatin National Forest. Failure to list bighorn sheep as SCC will lead to further declines, reduced fitness, and the loss of unique genetic material. Failure to list as SCC will also result in a failure to assess impacts to bighorn sheep during site specific actions which may alter the permeability of the forest, including the alteration of dense brush and other potential barriers between bighorn sheep on public lands and domestic sheep on private lands.

\* A recent study showed that 85% of domestic sheep operations, and 100% of those grazing in an open range setting, carried one or more strains of *Mycoplasma ovipneumoniae*[23], so the incursion of domestic sheep and goats on public lands where bighorn sheep may occur is not appropriate. FW-STD-GRAZ-06, which would prevent turnout of [ldquo]sick and diseased[rdquo] animals, is inadequate, as domestic animals harboring pneumonia-inducing pathogens are asymptomatic. While they are likely [ldquo]diseased[rdquo] in the technical sense, the presence of pathogens that are deadly to bighorn sheep is not readily apparent without a diagnostic test. Such tests are not routine. The FS should select a modified alternative D, which prohibits domestic sheep and goat use, and should amend that alternative to include standards addressing the points raised above. The Forest Service should also develop additional standards that would ensure Desired Conditions and Guidelines included in Alternative D are met.

#### Objectives and Monitoring

The DFP should include an Objective to complete NEPA processing and revise AMPs through a NEPA compliant process for all CGNF grazing allotments within the life of the plan. This would be in line with meeting the Desired Condition of ensuring that permitted livestock grazing is maintaining or moving toward ecological desired conditions. The DFP should also include a monitoring component to track the progress in RPM revision and NEPA compliance.

In addition to the Objectives Monitoring in the DFP, the DEIS should fully analyze and the DFP should contain direction for annual compliance monitoring on all grazing allotments as well as a delineated schedule for repeat monitoring of riparian and upland conditions. This issue was covered in more detail in WWPs scoping comments so will not be further discussed here.

#### Standards and Guidelines

FW-STD-GRAZ suffers 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 FS has no intention of actually undertaking. Furthermore, as identified in WWPs scoping comments, there is no direction as to how decisions

will be prioritized in terms of the avoid, minimize, mitigate, framework. Mitigation in the form of livestock infrastructure and riparian fencing should always be a last resort. The best way to avoid impacts is through competent livestock husbandry practices. In fact, an appropriate addition to the standard would be to require herding and riding as a term and condition of grazing permits to ensure that livestock do not spend too much time in riparian or other sensitive areas. This is much less impactful to the environment than physical infrastructure and is often more effective.

The prescriptive grazing guidelines with the exception of the stubble height guideline (which should be part of interim standards) also generally require NEPA analysis before taking effect. Since little to no NEPA is likely to be accomplished or undertaken on the majority of allotment, these guidelines should apply to annual operating instructions to the extent allowable by law. Stocking rates can be adjusted, timing and duration of grazing can be modified and riders/herders can be implemented on an interim basis until new AMPs are completed. As discussed earlier, interim standards should be put into place that include metrics to protect stream bank integrity, plant species biodiversity and wildlife habitat needs.

## Predators and Carnivores

The DEIS and FP are largely silent on the impacts of livestock grazing on native predators and carnivores. For example, wolves are only mentioned three times in the entire DEIS and not in relation to any effects analysis. Wolves are a native species that is still recovering in the CGNF. Wolves are often killed as a result of management actions and in some cases relating to depredation of livestock on public lands. The DEIS must consider the impact of livestock grazing on healthy wolf populations and should include standards or guidelines to avoid livestock related conflict. For example, placement of salt and other attractants should not be near known wolf denning and rendezvous sites. Livestock should not be released near these sites. In areas where wolf conflicts have occurred, herders/riders should be present with livestock and practice animal husbandry techniques that reduce predation. These same concepts could and should also be applied to grizzly bears. Further, the FP should include a standard that clearly states that in situations where there is livestock predation by native predators, the livestock should be moved rather than removing or killing the native wildlife. Finally, the CGNF should include FP direction that animal killing contests are not a suitable activity on national forest lands.

Western Watersheds Project thanks you for the opportunity to comments on the CGNF FP Revision. Please keep Western Watersheds Project on the list of interested public for this project

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[2] Austreng et al. (2011) [ldquo]Carbon sequestration in semi-arid ecosystems: Potential benefits of sagebrush restoration.[rdquo] American Geophysical Union, Fall Meeting 2011, abstract B23F-08.

[3] Gebrehaweria Kidane Reda. 2018. Effect of grazing exclusion on carbon storage on grazing lands: A review, International Journal of Development Research, 8: 22870-22878.

[4] 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[ndash]491

[5] Meyer, S. E. 2011. Is climate change mitigation the best use of desert shrublands?, Natural Resources and Environmental Issues: 17(2). Available at: <http://digitalcommons.usu.edu/nrei/vol17/iss1/2>

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[7] 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.

[8] Beschta et. al. 2014. Reducing livestock effects on public lands in the western United States as the climate changes: A reply to Svejcar et al. *Environmental Management*, 53(6), 1039-1042. doi:10.1007/s00267-014-0263-5

[9] Ibid.

[10] Jones, A. 2019. Do mechanical vegetation treatments of pinyon-juniper and sagebrush communities work? A review of the literature. Wild Utah Project, Salt Lake City, UT.

[11] Daryanto et al. 2013. Managing semi-arid woodlands for carbon storage: grazing and shrub effects on above- and belowground carbon. *Agriculture, Ecosystems & Environment* 169: 1[ndash]11. See also Austreng, A.C. 2012. The carbon budget impact of sagebrush degradation, M.S. Thesis, Boise State Univ.

[12] Batchelor et al. 2015. Restoration of riparian areas following the removal of cattle in the northwestern Great Basin. *Environ. Manage.* DOI: 10.1007/s00267-014-0436-2

[13] DEIS, p. 570

[14] DEIS, p. 587

[15] DEIS, p. 587

[16] DEIS, p. 572

[17]<https://www.fs.fed.us/rangeland-management/documents/rescission/NationalAllotmentNEPASchedule2017-2028.pdf> , last accessed 6/6/2019.

[18] DEIS, p. 578

[19] DFP, p. 76

[20] USFS. 2010. Evaluation of Rocky Mountain Bighorn Sheep for Sensitive Species Status in R1.

[21] Wolfe et al. 2010. A bighorn sheep die-off in southern Colorado involving a Pasteurellaceae strain that may have originated from syntopic cattle. *Journal of Wildlife Disease* 46(4):1262-8

[22] Highland et al. 2018. *Mycoplasma ovipneumoniae* in Wildlife Species beyond Subfamily Caprinae. *Emerging Infectious Diseases* 24(12):2384-2386

[23] Manlove et al. 2019. Risk factors and productivity losses associated with *Mycoplasma ovipneumoniae* infection in United States domestic sheep operations. *Preventive Veterinary Medicine* Volume 168:30-38