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Comments:
SD Dept of Game, Fish and Parks comments. Sent in two separated .pdf files

The South Dakota Department of Game, Fish and Parks (SDGFP) submits comments on the above[shy] referenced matters. We have a great appreciation for the tremendous amount of work the Plan Revision Team has undertaken for the Forest Plan Revision. Combining two administrative Forest Service Units required considerable work. We are sincerely grateful for the opportunity to participate as a Cooperating Agency. We look forward to a continued participation to provide substantive comments as the Team prepares the final documents.

Overall, SDGFP generally supports Alternative D, modified with many of our suggested edits for increased ecological conservation in the Draft Plan and DEIS. We were not able to review all draft documents and supportive information. We propose all Alternatives for the Revised Plan consider our edits. Alternative D best meets the 2012 Planning Rule for ecological integrity and long-term persistence of rare species.

We offer no opinion on Alternatives which pertain specifically to montane ecosystems and areas designations, such as Wilderness or Scenic River recommendations, or species which do not occur in South Dakota. Some of our ecological concerns may apply to the entire CGNF planning area but generally are targeted for the pine savanna geographical areas within the Northern Great Plains.

In summary, we list a few highlights which continue to be topics we have previously commented on, some at great length in the past and again today.

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* Riparian Areas: The Plan efforts to restore and maintain riparian areas, which would comply with the 2012 Planning Rule, are very encouraging and highly supported. We offer additional suggestions for Plan Components and additional relevant science for the Final EIS and final Plan. We emphasize the need to develop Components for streambank stability and alterations, stubble height to include both hydrophilic and non-hydrophilic species along the greenline, and methods which may be more applicable for the non-salmonid riparian systems in the Northern Great Plains.

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* Old Growth and Large Trees: A repeat of previous comments for the pine savanna geographical areas. We look forward to meeting with staff in the near future and appreciate their willingness to discuss our concerns and ideas.

* Greater Sage-Grouse: This section of the draft documents needs considerable revision in our opinion. This species has been selected as a candidate for the Species of Conservation Concern list and is afforded the attendant 2012 Planning Rule requirements for long-term persistence. In that context, we offer what we believe to be relevant, substantive, and necessary information to ensure this species is afforded the greatest conservation and mitigation efforts within the CGNF final Plan and monitoring Plan.

* Rangeland Management: As we stated earlier, we believe the rangeland and grazing sections have developed well since the earlier drafts, but these sections continue to require additional ecological and rangeland considerations, in our opinion. SDGFP has years of experience working with various FS Units on range ecology, including comments on the Grassland Plan Revisions in the early 2000's. SDGFP has knowledge of vegetation and the key disturbances that create and/or maintain vegetation conditions in the Northern Great Plains. We are specialists in understanding the life requirements of the flora and fauna which reside within the harsh conditions of the Northern Great Plains. The DEIS and Draft Plan are still shy of offering an evolved, updated, ecological approach to range management when today's rangeland ecology sciences are abundant and sufficient to support necessary management measures. In particular, the DEIS and Plan Components need to develop grassland structure and seral stage directives

for heterogeneous rangelands, and increased protections for shrinking, but unique habitats such as woody draws, shrublands, and hardwoods.

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* Finally, in the attached addendum, we offer our comments on the draft documents. Some information is new and some is a repeat of previously submitted official correspondence to CGNF. Together these substantive comments represent the best information our Department has to offer in this Plan Revision process within the given comment period.

As we have stated before, we offer to meet and/or talk with various staff specialists who have contributed towards this incredible plan revision effort. A special thank-you is offered to Virginia Kelly who has graciously kept our Department in the loop during all aspects of this process. We also appreciate Bev Dixon and Gunnar Carnwath. Their admirable biological knowledge and willingness to share information are critical to our agency's success as a Cooperator in this process.

GENERAL SDGFP COMMENTS

Throughout our comments, direct portions of the DEIS, Draft Plan, or Draft Monitoring are either in quotes or are discussed in general terms. SDGFP offers edits to these selected portions as edits which are generally in red type for ease of viewing the suggested changes. We support suggested edits with an indented response section which contains justifications or substantive (2012 Rule [sect]219 .62) reasons for our suggestions.

Comments are generally arranged by subject matter although many resource subjects overlap. Those suggestions which do not fit within that subject matter, are still pertinent and should be directed to the appropriate subject placement by CGNF Planning Team. Within each subject are segments from both the DEIS or draft Plan. This makes it a bit awkward to include both draft documents within one subject heading, but makes it easier to edit on a holistic basis by subject matter.

Many of the comments and scientific references we previously provided were integrated into the riparian habitat and big game sections in the DEIS and Draft Plan. We appreciate the inclusions of our information because it adds to the depth of proper resource management required in the Northern Great Plains.

Unless specifically stated, SDGFP does not make geographic area recommendations for new or edited Plan Components and rather believes proper placement of Plan Components should be the discretion of CGNF. However, we certainly are willing to discuss applicability to a geographic area such as the Sioux Ranger District.

SDGFP's use of the term "livestock" usually includes any domestic animal for human use such as pack animals, goats, sheep, bison, horses, wild horses, llamas and/or cattle.

Incorporate by reference: [sect]219.54(b) allows formal comments previously provided to the FS during a proposed plan or plan revision comment period. As a formal Cooperating Agency, SDGFP submits that all comments we have provided are formal and should be incorporated into the Administrative Record.

Correspondence incorporated by reference includes, but is not limited to:

2/26/18: Comments, citations, and references on Proposed Action Appendices. 50 pp.

9/17/18 and 9/28/18: Comments, citations, and references on RI Draft EIS Chapter 3 and Draft Plan: cover letter plus edited Word files of said documents.

6/13/18, 7/6/18, 11/13/18, 12/2/18, and 5/17/19: Comments, citations and references on old growth and large tree definitions, science, and applicability to ponderosa pine in the pine savanna geographical areas.

10/23/18, 11/2/18, 12/7/18, and 5/14/19: Comments, citations, and references with an emphasis on Greater sage-grouse, sage steppe habitats, and various multiple uses which could impact grouse and habitats.

11/20/18, 11/21/18, and 12/7/18: Comments, citations, and references regarding various wildlife species, unique and rare habitats, and status of various wildlife within South Dakota.

2.3.3 SOILS {SOIL}

FW-STD-50/L Plan pages 19-20

Standards 01-02: The DEIS (page 52) states, "Detrimental soil disturbance is management caused soil disturbance in vegetation management areas that persists on the landscape for an extended period of time (minimum of 40 years), unless restoration actions are taken and are severe and extensive enough to reduce soil productivity or the ability of the land to provide desired goods and services. "

Response: SDGFP supports Plan Components to protect all soil types from all human-caused activities and actions, which will aid in surface vegetation to ameliorate the effects of natural disturbances. Both Standards

should clarify what activities these standards impact. We suggest, "vegetation management, which includes livestock grazing activities,..... " See SDGFP comments

2-26-18 and 9-28-18. In the DEIS elsewhere, it does mention that livestock grazing activities can cause detrimental soil disturbance.

The Plan should clarify or define the area (size) in which the 15% detrimental soil disturbance area is measured: an entire timber sale area, an allotment, etc. The DEIS (page 56) states, "Revised plan alternative soils plan components would help ensure that timber harvesting units under all revised plan alternatives meet the 15 percent maximum detrimental soil disturbance standard, to both protect soil productivity and promote ecological integrity."

04 To maintain soil productivity, mechanical scarification used to prepare a seedbed for conifer reestablishment should not result in detrimental soil displacement or invasive vegetation establishment.

Response: See SDGFP comments 2-16-18, 9-28-18 with literature cited. The Plan should justify

why seed bed site preparation necessary where ponderosa pine is easily established such as in the pine savanna geographical areas. "Mechanical scarification" is mentioned in the DEIS (pages 56-58) as, "They [refers to guidelines but maybe should state "standards or components"] also cover the extreme instances of improper land scarification practices that were previously used." We suggest that "extreme instances" were not analyzed nor addressed in the DEIS. The impacts (positive and negative) of mechanically ripping of native soils should be better included in the soils analysis and discussed in the Final EIS to demonstrate how the practice either outweighs long-term negative impacts to understory vegetation and soils, or does not offer a significant increase in tree seed establishment compared to non-scarified areas. The Standard should have

tighter directions on when and where it is used because delineating 15% DSD may be difficult in an entire timber sale unit, be diluted because of the large planning area, or truly not capture the negative impacts of ripping within localized areas of application. Some localized areas can experience long-term impacts which SDGFP has seen in similar ponderosa pine forests of South Dakota.

07 To maintain the productivity of conifer and hardwood inclusions and stands, woody draws,

shrublands and as well as all inner riparian management zones (inner riparian management zone), vegetation management prescriptions in those areas should ensure that sufficient quantities of coarse woody debris (CWD) are left on the ground site after timber harvesting and other vegetation treatments. This guideline standard applies to all timber harvesting and vegetation activities,

including salvage, non-commercial treatments, and wildlife treatments where commercial material remains on site.

Response: Suggested added text to be more holistic in CWD management. The more debris left in plant communities such as hardwoods and woody draws, the more protected the

regeneration from livestock and wild ungulate browsing and animals which camp out under the cool shade of these plant communities and cause soil compaction and understory trampling.

Many of these sensitive plant communities are incredibly small in area and not widely available across the landscape. Therefore, they become a targeted use area by large animals or humans within recreation areas.

2.3.5 WATERSHED AND AQUATICS (WTR)

The corresponding DEIS section was extremely well written and thorough with the exception of some multiple uses and impacts to pine savanna/Northern Great Plains ecosystems. We have a few suggested edits integrated below. The Draft EIS and Plan Components regarding riparian areas and livestock grazing are disconnected in information presentation. The DEIS makes statements or lacks statements which truly are correlated to the Draft Plan. We point out those incongruences below.

Desired Conditions Plan page 22

05 The sediment regime within water bodies is within the ,...,ithin the range of conditions of the reference watersheds, as defined by agency monitoring.....

Goals page 23

01 The Forest Service cooperates with Montana Fish Wildlife and Parks and South Dakota Department of Game, Fish and Parks Fish and Game to reintroduce genetically pure native fish species in their historic range or introduce in locations the state(s) and the Custer Gallatin agree to for native fish species conservation.

Response: Throughout the DEIS, Draft Plan and elsewhere, please correct the title of theSouth Dakota Department of Game, Fish and Parks. Abbreviations can be SDGFP or SD Game, Fish and Parks or SD GFP. DEIS page 240, correct the citation (2014) to one of the suggestions above.

Guidelinespage 35

03 To protect the ecological functions that beavers provide , management actions to reduce beaver threats to infrastructure should use techniques that sustain beavers (such as, using pipes to reduce water levels, notching dams to restore streamflow, or beaver deceivers).

Response : See SDGFP comments to CGNF on beaver and damage control 9-28-18.

STREAMBANK INTEGRITY 2.3.6 .6 RIPARIAN MANAGEMENT ZONES

Desired Conditions Plan page 26

01 Riparian management zones have native and desirable non-native assemblages of flora and fauna; well distributed "

Response: Both Montana and South Dakota have introduced non-native fish into watersheds.

Standards page 28

SDGFP response to all permanent and seasonal water sources: All standards and guidelines should include the words " seeps, springs, wet meadows, and ephemeral streams" because they are critical aquatic resources within the pine savanna geographical areas. With only 4% of perennial streams on the CGNF within the pine savanna, most of the standards and guidelines will not protect seeps, springs, and ephemeral stream.

0 5 Annual streambank alterat ions of ephemeral and perennial streams will not exceed 25% and long [shy] term (such as 3-year) average bank stabilizati on will not be less than 75% (of reference conditions where they exist or of the most healthy, similarly represented segment of ripari an area available) by humans, livest ock (all types, ages and breeds) or other managed activities. This standard will incr ease the likelihood of

ecological integrity along stream s (permanent and ephemeral) and maintain or improve the greenline to greenline distance. It will also reduce the likelihood of significant bank sluffing, unstable banks, erosion, sedimentation loads, loss of native hydrophilic vegetation, and loss of streamside shading.

Response: The DEIS (page 66) states, "integrity relates directly to functionality... geomorphic functionality or integrity is defined in terms of attributes such as slope stability, soil erosion, channel morphology, and other upslope, riparian, and aquatic habitat characteristics. Hydrologic functionality or integrity relates primarily to flow, sediment, and water quality attributes.

Biological functionality or integrity is defined by the characteristics that influence the diversity and abundance of aquatic species, terrestrial vegetation, and soil productivity..... Some

characteristics of channels commonly measured to help identify changes caused by management include the frequency and depth of large pools, the width-depth ratio of stream channels, and the percentage of fine sediment contained in the substrate (Al-Chokhachy et al. 2010)."

To aid in meeting this definition of integrity and to identify "characteristics of channels commonly measured to help identify changes caused by management", SDGFP highly suggests that this measurable and repeatable standard should be included in the Final Plan to ensure healthy, resilient riparian corridors within the water influence or riparian influence zone. This standard will also reduce the number of functioning at-risk watersheds (DEIS Table 13 page 67) caused by large animal or human-caused bank issues.

One-fourth or 25% of pine savanna 6th level watersheds are at functioning at-risk. This is astoundingly high and unfortunate given that the pine savanna has only 4% of perennial streams on the CGNF (DEIS page 72). There are numerous ephemeral streams and seeps which require great management oversight to remain intact. Northern Great Plains systems may have more fragile and erodible soils compared to the montane ecosystems. Prairie systems do not quickly rebound once a disturbance has ceased (SDGFP experience). DEIS (page 71, third paragraph) correctly describes prairie riparian systems. This information all leads to the conclusion that prairie systems (perennial and ephemeral) are disproportionately important to both terrestrial and aquatic flora and fauna within the Northern Great Plains. It is well known that riparian areas are the most diverse ecosystem in the West. Therefore, management requires a high bar and adherence to the new Plan will remedy those actions which currently are not maintaining or improving long-term stream and riparian integrity.

The DEIS (page 72) states that the PIBO methodology is not suitable for pine savannas because it was developed for salmonid habitats. Instead, SDGFP encourages CGNF to integrate not only the above 2 metrics, which can be easily measured, but investigate the utility and applicability of the Multiple Indicator Monitoring or MIM (Burton et al. 2011) system for non-salmonid habitats. In the meantime, the above 2 suggested metrics should be Plan Components and would be used as design criteria for project planning and management monitoring. SDGFP is available to discuss MIM and its ability to be adapted to local environments.

Streambank alteration is an annual metric while streambank stability is a long-term metric. The suggested percentage limits on degradation are recommended from other Resource

Management Plans similar to the pine savanna. The temporal suggestion for bank stabilization is to place sideboards on "long-term" and could be established up to a 5-year average. The CGNF would determine what reasonable length of stream would be measured to achieve the desired stability and alteration percentages. MIM offers transect lengths for this purpose. Regardless of percentages and temporal repeatable measures, the Draft Plan appears to lack directives to reduce two measurable and damaging impacts to streambanks which can be easily measured.

Streambank is defined as that part of the channel between the scour line and edge of the first relatively flat bench above the scour line (Burton et al. 2008, 2011). This part of a stream is vulnerable to erosion during naturally occurring high flows and is influenced by the presence and type of vegetation (hydric vs. upland). Changes or losses to deep-rooted shoreline vegetation will decrease stability as the DEIS has acknowledged. Unstable banks result from mass wasting, breakoff, hoof slides and shears, and trampling by large animals or other physical disturbances. The Forest Service can control human impacts to streams due to recreation, vegetation treatments, travel, and livestock management, for example. With the MIM methodology, streambanks are recorded as either depositional or erosional, and vegetative covered or uncovered (Burton et al. 2011 at page SO). Only erosional banks are assessed for stability class such as fracture, slump, sluff, eroding, or absent of eroding.

Streambank alteration is a direct disturbance by other than natural forces of water, ice and debris. Large herbivores (cattle, sheep, horses, elk, bison, moose, deer, etc.), humans, off-highway vehicles, recreation use, road construction, timber harvesting, energy development, and mining are examples of activities that can cause streambank alteration (Cowley 2002).

Excessive degree of streambank trampling and instability are adverse to water quality, stream temperature, streambed substrate, channel configuration and aquatic habitat; all the ecosystem services and functions that the 2012 Rule and the Draft Plan propose to conserve and protect.

Streambanks should be stabilized and can achieve a degree of repair due to annual alterations. However, year after year of impacts creates a much longer healing time once the degrading actions have been removed. Natural disturbances will repair over time but the addition of human-caused impairment year after year can render some stretches of streams improperly functioning and will result in a loss of ecosystem services.

Streambank integrity overlaps with the livestock grazing section and is discussed herein.

FW -GDL-GR AZ Plan pages 77-78

1. New or revised allotment management plans should be designed to maintain stream, seep and spring habitat and water quality by minimizing sediment delivered to watercourses and degradation to streambank stability and saturated soils from livestock grazing in riparian areas.

Response: see SDGFP 9-28 -18 comments. Clarification. See similar SDGFP comments for the

DEIS below. Guidelines which state "new or revised AMPs". Is this suggesting that current grazing practices do not have to meet these guidelines now and in the future prior to a revised AMP? See discussion above for justification for these edits to this guideline. GDL 01 for livestock grazing mentions streambank stability and yet no apparent methodology or streambank stability endpoints are delivered as a definition of degradation in the Draft Plan. The Plan needs definition of lower limits for impacts on annual and long-term basis. In practice, GDL 01 does not meet an intent to protect streambanks from livestock, other large animals, or

human-caused activities because it is extremely vague. To remedy this, SDGFP offers substantive comments and suggestions herein to remedy this omission. Also, because CGNF currently has no methodology to determine streambank alterations/stability, it will be difficult for the public and management to offer adaptive management strategies.

1. To maintain or improve riparian aquatic habitat and achieve riparian habitat desired conditions specific to an ecological site over time, low gradient, alluvial channels should have end of season stubble height of hydrophilic and/or terrestrial vegetation along the greenline be at least 10 to 15 centimeters (4 to 6 inches). Alternative use and disturbance indicators and values, including those in current Endangered Species Act (ESA) consultation documents, may be used if they are based on site capability, relevant science, monitoring data and meet the purpose of this guideline.

Response: see SDGFP 9-28-18 comments. Some degraded systems may have very little or no

hydrophilic vegetation. As it reads, only those systems with proper hydrophilic vegetation are included in this standard. See also DEIS pages 74-75 which indicate non-hydrophilic grasses are within riparian systems.

06 Undeveloped and developed springs, along with an upland buffer, will be protected from multiple[shy] use damage. Undeveloped springs will be assessed for their biological and ecosystem values to determine if development is the best ecological course of action. Developed springs which are no longer used will be assessed and scheduled for restoration.

Response: There is no specific Plan Component to protect springs, a critical aquatic resources in the pine savanna and Northern Great Plains. The DEIS (pages 73-74) states, "Springs, a groundwater dependent ecosystem, in the pine savanna units are a prominent ecological feature on the landscape in that, similar to 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."

Guidelines page 29

02 To reduce the likelihood of sediment input to streams, seeps and spring, and to reduce adverse effects to stream channels and riparian areas, new permanent livestock handling or loading facilities

(for example, corrals), livestock handling activities, watering tanks and infrastructure, and livestock trailing should be located outside of the riparian management zone unless it can be demonstrated these facilities or handling activities will not affect the riparian area functionality or that such placement improves an existing situation. Livestock trailing is allowed when herding livestock away from riparian areas to uplands or to another pasture to meet riparian resource desired conditions.

05 To reduce the likelihood of sediment input to streams, seeps and springs, and reduce adverse effects to stream channels and riparian areas, new landings, skid trails, slash piles, burn piles, staging or decking should be located outside riparian management zones, woody draws and hardwoods. If these activities are needed inside of riparian management zones, woody draws and hardwoods, minimize the disturbance area footprint and locate activities outside the active floodplain.

Response: The DEIS (page 578) indicates woody draws occur on less than 3% of Ashland and Sioux GAs and are for the most part, are in an at-risk or non-functioning state. Rare habitats such as seeps, springs, and woody draws should be included in all applicable Plan Components to ensure project-level planning is required to consider these communities.

DEIS pages 74-75

Riparian corridors are dominated by non-riparian vegetation types, such as trees (Douglas-fir, Engelmann spruce) and dry grasses.

Response: What are dry grasses? SDGFP cannot find that term within vegetation ecology sources, the Society for Range Management definitions, or the draft glossaries. The sentence indicates vegetation is non-riparian so simply change the term to "grasses" or list some of the concerning grass species.

DEIS page 89

Riparian Areas

Additional riparian protection would be provided since the inner riparian management zone would be increased to 100 feet for all fish bearing streams as compared to 50 feet (on slopes less than or equal to 35 percent) following state stream management zone laws. There would also be a riparian management zone on all seeps, springs, ponds and wetlands regardless of size, which is a change from the current plans.

Response: Suggested inclusions of other aquatic resources. See comments herein on need to protect aquatic resources within the pine savanna and Northern Great Plains.

DEIS page 91

Conservation Watershed Network watersheds would be improved by plan objectives to storm proof five to eight miles of road per year, per plan lifetime ? and replace stream crossing

These activities would include, but aren't limited to: transporting water across drainage boundaries for fire suppression, livestock (all types, ages, and breeds) and pack animal watering, constructing stream fords, operating equipment in a riparian area and near a watercourse, and the use of pumps and sumps for fire suppression, or construction related dewatering activities. Thus, the revised plan alternatives provide a mechanism for protecting aquatic native species from threats of

DEIS page 93

This would be conducted aaBe on at a project specific scale where, for example, it was determined that hardwoods were underrepresented due to by-excessive fire suppression.

DEIS page 96

Plan objectives propose maintaining 30 percent of trails to standard per year across all alternatives, though the concentration would be in front country for alternative E.

Response: Define "front country".

DEIS pages 99-100 as it relates to both riparian areas and livestock/large animal management

The revised plan alternatives may limit livestock effects by having a minimum end-of-season stubble height guideline in low gradient alluvial channels (livestock grazing section guidelines provide more information). This plan component could benefit riparian ecosystems and aquatic species and habitat in those specific stream types. Goss and Roper (Goss and Roper 2018) demonstrated that generally in salmonid streams higher streambank stubble height, and lower streambank alteration, can be used as a proxy to improve stream habitat conditions. However, outside of salmonid habitats such as the pine savanna geographical areas, stubble

height has not been shown to be a proxy for streambank conditions (Burton et al. 2011) Revised plan alternatives also require new livestock handling or management facilities (for example, corrals) to be located outside of riparian management zones.

Response : Again, the Draft Plan Components offer no streambank alteration or stability percentages that indicate degradation. There is a need to move towards desired conditions and other Plan Components. Height of annual riparian vegetation is not a direct measure of condition, it is simply a measure of residual herbaceous vegetation (both hydrophilic and non[shy] hydrophilic) after animal herbivory and grazing. Burton et al. (2011) state that stubble height is not a substitute for vegetation condition or trend but does provide information that may be used to determine the degree to which livestock grazing is influencing the achievement of management objectives. This is based in part on cited studies within Burton et al. (2011) such as Univ. of Idaho Stubble Height Review Team 2004.

However, the DEIS states that Goss and Roper (2018) have shown that stubble height in a proxy to streambank conditions in salmonid habitats. SDGFP suggests that stubble height cannot be applied outside of that narrow salmonid riparian habitat description outside of the montane geographical areas. SDGFP suggests rewording the DEIS and any corresponding Plan Components for areas outside of salmonid habitats. Outside of salmonid habitats, residual vegetation together with measurable metrics of streambank alteration and stability, will offer a more defensible assessment to meet the 2012 Planning Rule requirements for ecological integrity and long-term sustainability of riparian systems and the flora and fauna which depend upon them.

DEIS pages 592-592 should be edited to:

Methods available to monitor grazing in riparian areas are varied and being improved (Bryant et al. 2004, Kershner et al. 2004a, Coles-Ritchie et al. 2007, Burton et al. 2008 and 2011, Al-Chokhachy et al. 2010, Hough-Snee 2013, Batchelor et al. 2015, Laine et al. 2015). While no one method works everywhere, stubble height has been extensively studied and is widely put in practice as an end-of[shy] season monitoring indicator of residual herbaceous vegetation (Clary and Webster 1990, Clary and Leininger 2000, Goss and Roper 2018).

Response: Clarify that stubble height is an indicator of what. Also, the paragraph following this in the DEIS should mention streambank alterations and stabilization with reference to Burton et al. 2011.

To maintain or improve riparian aquatic habitat and achieve riparian habitat desired conditions specific to an ecological site over time, all revised plan alternative plan components direct that low gradient alluvial channels should have end of season stubble height of hydrophilic and/or non-hydrophilic vegetation along the greenline to be at least 4 to 6 inches.

Response: See similar SDGFP comments herein. Some highly degraded systems no longer have hydrophilic vegetation, or not enough abundance to measure. By adding non-hydrophilic vegetation to be measured along the greenline, the true grazing pressure and residual vegetation will be measured. As the system heals, monitoring will indicate a reduction in upland vegetation and a recapturing of the site by hydrophilic vegetation.

DEIS pages 99-100

The revised plan alternative plan components direction, as compared to the current plans, would decrease livestock grazing effects while not prohibiting livestock grazing use in riparian areas.....

The revised plan alternatives are a slight improvement over the current plans. The effects of livestock can be seen across the planning area particularly in riparian areas. Historical grazing led to riparian vegetation

changes and stream channel degradation on grazed streams. Various riparian areas and water bodies have seen improvements through best management practices and revised allotment

management plans. However, riparian and aquatic habitat improvement within allotments continues to be a challenge.

Response: This narrative of only "slight improvements" is disappointing for a new revised Plan and EIS which are required to meet ecological integrity and long-term persistence of certain natural resources. On the other hand, the DEIS frequently admits where livestock grazing in the past few decades has caused rangeland ecological issues. Apparently, there are areas on the CGNF that are not in a healthy state. The Draft EIS narratives and Plan Components appear to make ridged statements, guidelines, and standards for most other multiple-uses to comply with the 2012 Rule. This paragraph above is more applicable to the "Assessment" phase of Forest Planning where current conditions are simply divulged. This DEIS paragraph does not outline hopeful projected changes to resources due to changes in future grazing management. In this context, all the Alternatives are arguably, no different than current Plan directions of the Custer

and Gallatin National Forests which is a violation of NEPA's requirements for a reasonable range of alternatives and the no-action alternative. The DEIS indicates most impacts to livestock grazing are the same across the proposed revised Alternatives (except for Wilderness and so forth). SDGFP suggested that there be additional effects analysis and assessments to the DEIS alternatives to alleviate the fact that all Alternative only make slight improvements to existing conditions.

DEIS page 587

Plan components emphasize improving riparian and wetland conditions and are expected to continue under all revised plan alternatives. Revisions of allotment management plans would continue to implement best management practices and identify end of season allowable use levels that are expected to move riparian areas toward desired conditions. Management adjustments may result in a loss of permitted animal unit months for some permittees.

Response: This does not appear to be "slight improvements"

DEIS pages 99-100

Improper grazing by livestock can reduce bank stability and it often changes riparian vegetation, resulting in insufficient overhead cover for fish (Platt 1991). For montane landscapes an extensive review of PIBO data in montane streams of the Pacific Northwest and into the Northern Rocky Mountains was conducted (Kovach et al. 2018). The review found land-uses, and in particular livestock grazing with this study, was closely related to summer thermal regimes and suggested that this land-use may be additive with respect to climate change impacts already underway.

Response: Again, there are no Plan Components for bank stability (long-term metric) and bank

alterations (annual metric). Therefore, true assessment of stream health will not be met in the Final Plan for either montane or pine savanna riparian areas, rendering DEIS narratives to unsubstantiated declarations of how the revised Plan alternatives will improve current conditions.

Less is generally known about how grazing impacts the Northern Great Plains watersheds and water quality, given these systems are naturally more erosive than montane landscapes and waters are generally more conductive (have higher mineral content).

Response: Streambank alteration and stability by any large animal (and other sources) can still

be a measured. Revised Plan Components will aid in future management of these prairie systems for both the public and livestock operators until additional science has been researched and published.

Excessive grazing by both wild and domestic ungulates can remove woody plants (Batchelor et al. 2015), reduce the vigor of perennial forbs and grasses, and cause channel profile and function changes via bank collapse on low gradient streams (Trimble and Mendel 1995, Bengeyfield 2006). Widening channels, increased stream temperature and fine sediment, altered bank structure, and increased the loss of overhanging vegetation (that may occur from excessive grazing (Myers and Swanson 1996, Kershner et al. 2004b). This is often harmful to aquatic fauna, especially cold-water dependent species (Belsky et al. 1999, Saunders and Fausch 2007).

Response: Streambank alteration and stability by any large animal can still be a measured

metrics in the Revised Plan to aid in future management of prairie and montane systems. The draft Plan does not include directives for percentage of annual browse of leader points which we offer some suggestions herein.

A study of the effects of grazing on North Dakota badlands and prairie stream fish assemblages, conducted by Stephens and others (Stephens et al. 2016), found similar guilds in Ashland and Sioux geographic areas. This study also found it difficult to find any reference streams and recommended building enclosures, for years or even decades, would be important to accurately assess impacts to prairie stream fishes. This would facilitate understanding potential impacts from permitted livestock grazing in the Custer Gallatin National Forest pine savanna streams, as most streams and waterbodies in these units are open to grazing with 86 percent of all lands covered by primary rangelands within grazing allotments as compared to 6 percent in montane units.

Response: If 86% of all lands open for livestock grazing are within pine savannas, and the DEIS has repeatedly discussed and cited how prairie riparian systems are naturally more erosive and also more fragile, then it is apparent that the current Plan Directives are woefully inadequate by CGNF's own admission: components only deliver "a slight improvement" over current conditions. The DEIS conclusion states, "The suite of the revised plan alternatives' watershed, aquatic, and riparian ecosystem plan components are designed to maintain or restore the ecological integrity of the Custer Gallatin National Forest." This actually is in stark contrast to a "slight improvement".

Also, there was no mention of how horses, bison, pack animals, and big game may be additive to riparian streambank conditions. SDGFP strongly recommends that the various multiple-uses and multiple large animal impacts should be accounted for in the final Plan Components and Final EIS in order to meet the 2012 Rule for riparian health.

DEIS page 101

Montana and South Dakota State owned school trust lands managed by the Montana Department of Natural Resources and Conservation and the South Dakota Office of School and Public Lands, respectively, will continue to support a variety of uses of their lands, from livestock grazing to mining, timber harvest, and recreational fishing and hunting. Montana and South Dakota laws require that school trust lands be managed to maximize income for the school trust.

DEIS page 102

Montana Fish Wildlife and Parks and the South Dakota Department of Game, Fish and Parks Fish and Game have laws and regulations that are adequate to prevent the overexploitation of fish populations from angling impacts through their management of the fisheries populations across the Custer Gallatin. However, with

an increasing human population, particularly in the montane areas, and other cumulative impacts mentioned in this section, angling could be an additive stressor in the future if states do not adequately address angling pressure, harvest limits, and other fisheries management concerns.

DEIS page 316

A standard would require new or revised allotment management plans to design grazing practices to maintain or improve resiliency of riparian ecosystems and associated wildlife.

Response: Please point out where in the Plan this standard is located and its intention. It was not apparent in sections 2.3.4 - 2.3.7.

DEIS page 570

Livestock that use rangelands can remove plant material, trample soils, and alter water flow patterns. However, with proper management these impacts are not substantial when compared with the natural resilience of ecosystems (Holling 1973)..... The science of assessing rangelands is evolving as certain concepts and ecological processes are becoming better understood.

Response: Our review of Holling (1973) follows. If we did not capture the correct science

published by Holling, we apologize in advance. We searched the article for the words livestock, grazing, cows, and cattle. If we are correct, we suggest that Holling (1973 - page 9: Resilience and Stability of Ecological Systems, Annual Review of Ecology and Systematics, Volume 4, pp. 1-23, Canada) only mentioned grazing, presumably cattle, in the arid West where mesquite and cholla occurred. The article then discussed that grazing together with fire suppression allowed the invasion of shrubs and trees at the expense of grass. (Grass, which is critical forage for livestock.) Holling went on to state as the vegetation type changed due to these 2 dominant forces, the natural ecosystem changed and that "elimination of grazing would not reestablish the grasslandthe return to the original domain can only be obtained by the explicit reduction of the trees and shrubs."

If we are correct and understand the intention behind citing Holling (1973), Holling is stale, unrelated data, which is a violation of NEPA's requirement to give a hard look at the EIS assessment process. Holling does not support the statement of "natural resilience of ecosystems" related to cattle grazing. In fact, Holling (1973) is contrary to the DEIS's point that livestock grazing can be resilient to ecosystems and does not support livestock (cattle, horse, and bison) grazing as we know it today. This article certainly is not applicable in the context of livestock grazing in the montane or pine savanna geographical areas of MT and SD because those areas lack mesquite and cholla habitats.

SDGFP questions the purpose and applicability of this near 50 year-old citation, considering the DEIS on the same page acknowledges that range science is evolving. The 2012 Planning Rule requires relevant science. In the past 50 years, a significant body of range and ecological peer-reviewed

science has enhanced our knowledge of herbivory of large animals and how ecological systems do or do not recover from historic or certain grazing practices (both positive and negative). SDGFP suggests that the DEIS armor statements of ecological resiliency with recent, relevant, peer-reviewed, scientific literature.

DEIS page 576

We support that CGNF acknowledges that today's cattle weights are much larger and that calves may be also larger compared to the SRM and text book definitions of an AUM. Adjusting forage consumption and stocking

rates for both increased cow and calf weights are critical to sustaining ecosystem integrity . AUMs for horses, bison, pack animals, goats, llamas, etc. should also match today's weights of these herbivores.

DEIS pages 579-584

Tables 73-79 are very informative and SDGFP appreciates that this information is included in the DEIS. However, the DEIS (page 576) states that there are 22 allotments (15 active, 7 vacant) which have no form of NEPA, which is planned to occur within the next 10 years. It appears that these 22 allotments are not within these Tables based on the Rescission Act revision dates. If this is correct, full disclosure needs to be in the DEIS and an explanation of how these allotments are being managed without NEPA. SDGFP offers a suggestion below:

Standard XX

There may be an absence of site -specific NEPA, special use permits for pack animals, horse and bison management plans, goats for weed management, or livestock Allotment Management Plans. In those cases, management direction for ongoing rangeland management activities on active allotments, newly acquired lands, or periodically used vacant allotments and grassbanks, will follow Plan Components until NEPA has been completed.

DEIS 3.5 AT-RISK PLANT SPECIES AND PLAN 2.3.9 AT-RISK PLANT SPECIES {PRISK}

DEIS page 104

Key Indicators and Measures

Species specific and habitat guild (habitat type group) conditions and threats will be qualitatively evaluated. In addition to natural events such as insects, disease, fire, and climate change, adverse impacts to at-risk plant species result from plan components that increase surface disturbance and competition from invasive species spread or alters hydrological processes. The principle beneficial impacts include, the plan components that protect, maintain, or restore habitat conditions in known occurrences or potential at-risk plant species' habitats.

Key Indicators Used to Compare Alternatives

Habitat quality by evaluating changes in land allocations generally considered low risk to ground disturbance measured in acres by alternative of designated wilderness areas, wilderness study area, recommended wilderness areas, inventoried roadless areas, backcountry areas (low development areas), designated wild and scenic rivers, and research natural areas.

Potential competition from invasive weed species by evaluating changes in miles motorized route weed spread vectors.

Response: These are not complete sentences. The majority of this section for at-risk species, and some of the terrestrial vegetation section, have multiple grammatical and composition mistakes which make it difficult to provide meaningful comments. For example, pages 125, 131, and 135 are filled with run-on and incomplete sentences. Please edit.

DEIS pages 115-116

Broadleaf Woodlands Habitat Guild

..... Deciduous broadleaf woodlands in mesic settings include green ash woodlands in the Ashland and Sioux Geographic Areas, which provide habitat for heavy sedge. Green ash woodlands are best developed under conditions that favor snow entrapment, development of deeper soils, and concentration of moisture. These conditions are typical of ravines formed by ephemeral and intermittent streams where flooding is more sporadic or of short duration. Uplands are generally mixed grass prairies, shrublands and ponderosa pine forest. Soils are usually deep loams. Flooding is very short in duration when it occurs, as water is rapidly channeled downslope.

Response: Another impact to this habitat that should be mentioned is the real likelihood that it will be severely degraded or lost entirely due to emerald ash borer and green ash mortality of mature trees.

Threats to broadleaf woodlands include fire suppression, improper grazing, and noxious species invasion such as the emerald ash borer, 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. This species and habitat type is vulnerable to

improper grazing, large animal herbivory, and weed invasion.

DEIS page 116

Montane grasslands are dominated by cool-season perennial bunchgrasses and forbs, with sparse shrub or tree representation. Warm-season grass occurs on the Ashland and Sioux Districts.

Response: As written, the information was misleading.

General threats to grasslands and shrublands include fire suppression, improper grazing, off-road vehicle use, noxious species invasion, conifer encroachment, off-trail recreation (for example, all-terrain vehicles, bicycles), disturbed hydrological functions by impounding waters and developing seeps and

springs, and other human developments.

Response: hydrological function was completely missing from list of impacts.

3.5.3 ENVIRONMENTAL CONSEQUENCES

DEIS pages 120-121

Mountain ecosystems are able to shift upslope, reducing habitat for many subalpine and alpine tundra species. Mountain tree line is predicted to rise by roughly 350 feet for every degree Fahrenheit of warming (Environmental Protection Agency 1997).

All habitat guilds for Regional Forester sensitive or at-risk species are expected to be impacted by warming trends. Riparian, alpine wetland, alpine grassland, and shrubland habitat guilds may experience an increase in the rate of desiccation due to increased and prolonged summer temperatures and drought conditions. The opposite could be true and all guilds could see an increase in precipitation which could result in longer fire seasons and more fire on the landscape.

Response: Synthesis is needed on the point the author is attempting to make. It seems incongruent that more precipitation equates to more fire on the landscape unless it is through lightning ignitions - please better explain.

Habitat in the alpine habitat guild for sensitive or at-risk plant species may decrease as a result of climate change and an upward shift of lower alpine habitats over time. Increased fire severity or frequency may also affect all habitat guilds except the riparian and wetland, especially those found outside of the sparsely vegetated habitat guild, either favorably or detrimentally depending upon the species' requirements.

Response: The last sentence is unclear.

DEIS page 125

Table 28. At-risk plant species' relationship to areas considered to have low risk for ground disturbance by revised plan alternative.

Response: There are two rows which both state "Number of at-risk plant species within low risk areas." One row has the number 9, the second has the number 16. Please explain the difference between these two identical categories.

DEIS page 136

South Dakota's 2015 Wildlife Action Plan uses an ecosystem and science-based approach to assess the health of South Dakota's fish, wildlife, and associated habitats (SDGFP 2015; Amended 2018). Plant species are not listed as species of greatest conservation need (SGCN). In the Plan However, the plan refers to the terrestrial, riparian, and wetland ecosystems' planning approach. This Wildlife Plan encourages voluntary actions among conservation partners, agencies (such as the U.S. Forest Service), Tribes, and individuals to provide habitats that occurred prior to European settlement of South Dakota. The concept of using an historical reference is based on the fact that the array and distribution of ecosystems across South Dakota shaped and sustained the region's biological diversity, and that most species in South Dakota today resulted from historical ecosystems and associated disturbance regimes in the Great Northern Plains. This plan is complementary to having resilient ecosystems in which at-risk plants can persist.

Response: Corrections to reduce a run-on sentence.

DEIS page 137

Motorized access has limited indirect and cumulative impacts to at-risk plant species on the Custer Gallatin.

Response: Is this sentence trying to convey that motorized access has limited indirect impacts, or limited and indirect impacts? Explain how limited impacts also have cumulative impacts.

SDGFP suggests that motorized access, or roads, have direct and cumulative impacts to at-risk plant species because of direct habitat loss and habitat fragmentation due to roads. Please explain and amend the effects analysis if necessary.

Motorized routes are primary weed spread vectors that are threats to at-risk species.

Response: Are motorized access, motorized routes, motorized travel, and trails the same things? Weeds are a direct impact to at-risk species, which contradicts the above sentence that states motorized access has limited [and?] indirect impacts. Please explain and amend the effects analysis.

OLD GROWTH AND LARGE TREES
DEIS page 223

Particularly on the Warm Dry potential vegetation type, increasing tree densities have increased tree stress and vulnerability to mortality from insects, pathogens, and high intensity crown fires. In these areas, silvicultural treatments in old growth with the purpose of increasing resilience are expected to have the effect of maintaining existing old growth longer in to the future."

Response: SDGFP greatly acknowledges and supports all efforts to account for, retain, and recruit individual trees and stands as old growth and/or large dbh trees. CGNF recognizes the role both old and/or large trees play in ecosystem functioning and long-term persistence of the species which depend upon old growth and/or large diameter trees. Recognizing that some vegetation treatments are necessary to either create or maintain old growth and/or large trees within the pine savanna is appreciated.

2.3.10 Forested Vegetation (VEGF)

FW-DC-VEGF Plan page 40

Table 13: Forestwide desired and existing condition of old growth.

At the bottom of this table, it states: "Forest Service (Green et al., 2011) unless more current regionally[shy] directed best available science becomes available. This same statement is listed in Guideline 01.

Response: We appreciated the addition of the table and GDL 01 footnote about regionally[shy] directed best available science. We believe that geographically-directed science and local knowledge will further refine accounting for the pine savanna and lack of typical "old growth and/or large trees". Green et al. definitions pertain primarily to the montane ecosystems or those pine savanna areas with historically inoperable logging areas and different growing conditions as compared to the Sioux Ranger District. Rather than repeat our previously stated and substantive concerns regarding old growth/large tree definitions, DEIS analysis, and Plan Components, we incorporate by reference our previously submitted comments to the CGNF as a cooperating agency: 2-16-18, 6-13-18, 7-6-18, 9-28-18, and 11-30-18. Because this is an important subject to ensure ecological integrity and future management to retain and encourage old growth and large trees, we look forward to a June 2019 field trip to discuss ponderosa pine old growth/big trees within the Sioux Geographic Area.

FW-GDL-VEGF pages 41-42

01 To contribute to biodiversity and landscape heterogeneity, as well as provide habitat for old-growth[shy] associated plant and animal species, vegetation management (including timber harvest, fuels treatment, or prescribed fire) in old growth other than lodgepole pine, should be used only to achieve one or more of the following purposes:

1. To maintain or restore old growth habitat characteristics and ecosystem processes.....

Response: see SDGFP comments on old growth and various tree cover types 2 26-18 and 7-6-18

(response to 6-13-18 phone conference) and again on 9-28-18. A geographic-area description of the draft Plan Components may be needed for the Sioux Ranger District.

SNAGS

Forest wide, the Custer Gallatin National Forest is currently within the desired condition for snag density and distribution. While it is not possible to model the creation and decomposition of snags directly, one can assess the expected trends in the primary processes that create snags - fire and bark beetles - as a proxy to compare alternatives. Wildfire and prescribed burning would generally create snags in the short term, most often of the smaller size classes, although some snags and downed wood could be consumed. Bark beetles would tend to create medium, large or very large snags and not consume any existing snags or downed wood. After these events, the longevity of the snags would vary depending on species and site-specific conditions. For the purposes of this comparison, it is also assumed that timber harvest would generally reduce snag recruitment and retention, although appropriate levels of snags and downed wood would be retained as required by plan components.

Response: The model cannot take into account decomposition and longevity of soft vs. hard snags but the Plan Components can take them into account the resource these very different snags provide for insects (prey base for insectivores), birds, bats, and cavity dependent species. Fire and insects do produce the most snags, but again, not necessarily long-term hard snags.

See our Plan Component suggestions below. See 7-6-18 , 9-28-18 and 11-13-18 SDGFP correspondence on this topic. Correspondence is incorporated herein by reference as a Cooperating Agency. See provided references on longevity of ponderosa pine mortality due to pine beetles.

Draft Plan page 35

03 To maintain soft and hard snags (standing dead trees of any species) over the long term for wildlife habitat and ecosystem processes, all vegetation management projects should retain at least 40 snags per 10 acres. Due to their rarity, longevity, and high value for wildlife, the largest hard snags available should always be prioritized for retention. The largest soft snags should be retained in salvage or sanitation operations where trees have been killed by high intensity stand-replacement fires or insect s. Guideline applies as an average of treatment units across a project area and allows for variation in snag retention among treatment units with the intent of preserving the most desirable snags.

Response: See above response.

05 Vegetation management prescriptions should retain, on average, 50 live trees per 10 acres greater than 15 inches in the warm dry broad potential vegetation type, 100 live trees per 10 acres greater than 15 inches in the cool moist broad potential vegetation type, and 80 live trees per 10 acres greater than 15 inches in the cold broad potential vegetation type. Guideline applies as an average across treatment units. Large live trees need not be present on every acre; they may be clumped as appropriate for the site and species. If the minimum amount of large or very large trees are not present, leave all that are available . Where treatment units do not have trees greater than 15 inches, leave live trees acres of the largest diameter trees present. No replacements or smaller sizes need be left unless desired in the site-specific prescription .

Response: SDGFP suggests that retention of "50 live trees per 10 acres greater than 15 inches in the warm dry broad potential vegetation type" (Ponderosa Pine) is going to be improbable on the Sioux Geographic Area. The guideline goes on to state, "If the minimum amount of large or very large trees are not present, leave all that are available." This may suffice for amount, but there may not even be large or very large trees on these pine outcrops. And additional caveat is suggested above to meet the intent of the guideline to retain and/or create stands and inclusions of large diameter pine.

New Standard: No firewood cutting is allowed for any hardwood or juniper species, dead or alive. Only if a tree has been removed for safety or administrative purposes, will a hardwood or juniper tree be available for firewood.

Response: There are so few hardwoods and large, mature juniper. All of them dead or alive, should remain on the landscape,

MINOR FOREST COMPONENTS YET CRITICALLY IMPORTANT HARDWOOD AND DECIDUOUS SPECIES
Perhaps we missed it, but the Final Plan should have Standards and Guidelines to ensure the ecological

integrity and long-term persistence of hardwood and deciduous species within inclusions, stringer

draws, along riparian areas, toe of the slope, riparian areas, and woody draws. Stating that there should be a diversity of species in Desired Conditions (Draft Plan pages 34-46) is not enough to ensure project planning will appropriately consider these unique, sparse, and under-represented community types.

These communities must be actively accounted for in project implementation which only the Plan can ensure. See SDGFP comments 2-26-18 at pages 9-11 regarding aspen inclusions within the Sioux Ranger District and provided scientific references and woody draws and scientific references.

Response: SDGFP suggests a new Standard in the appropriate Plan category:

Standard: There will be no net loss of hardwood inclusions, stands, and associated deciduous shrub and woody draw plant communities due to management of human activities. Condition classes of these communities will not digress further into non-functioning or at-risk states where communities can no longer self-repair.

Response: This standard demonstrates an effort to improve the health and condition of these communities. The DEIS (page 578) indicates that woody draws occur on only 3% of the Ashland and Sioux GAs. The majority of woody draws are in at-risk or non-functional condition for a variety of reasons. If some type of Plan Component is not included in the Final Plan for these sensitive and rare communities, please explain why. Relegating conservation efforts to the Suggested Management Strategies is insufficient to ensure vegetation diversity within the Northern Great Plains.

Are Tables 6-13 (Draft Plan pages 35-40) only for conifer species?

Mesic Deciduous Woodlands
Table 14 Plan page 46

Healthy aspen and hardwood stands have a diversity of age and structural classes and are maintained to provide wildlife habitat, natural fuel breaks, and other ecosystem functions..... Where aspen occur, there

is always may be water near the surface and stands thrive best in abundant sunlight. Healthy stands have a mix of older, middle aged and young "trees" (stems) and support a wide variety of native grasses, forbs and shrubs. The rich understory of an aspen stand is many times more diverse than the floor of a conifer forest.

Response: Redundancy, grammar, clarifications. In the dry, Northern Great Plains, not all aspen stands or inclusions grow near surface water.

1. Regeneration, protection, and conservation of aspen, other hardwoods, and woody draws shall be implemented through means appropriately proven successful in scientific literature. Prescribed fire will not be ignited in recently regenerated hardwood stands or woody draws to avoid killing the regeneration.

Response: Addition of a new Plan Standard. See discussion below on regeneration of hardwoods using clear-cut, coppice, or individual tree selection. SDGFP has witness where regeneration has finally made a foothold, only to be completely burned off in a prescribed fire due to a delayed fire window. Plan Components would help avoid this mishap.

1. Conifer planting, seeding, and soil site preparations will not occur in hardwood stands, hardwood inclusions, woody draw areas, meadows or grasslands. A minimum of 150 feet of the outer perimeter of these systems will provide a buffer zone between the outer most hardwood shoot and conifers.

Response: Additional Standards should be included in the Final Plan - place where most appropriate. See SDGFP 9-28-18 comments. Years ago, ponderosa pine (PIPO) saplings were replanted following stand-replacing fires in the Long Pines. Unfortunately, pine saplings were planted within regenerating aspen stands and woody draws or immediately adjacent to aspen and woody draws. It is likely that aspen also finally regenerated where pine was already replanted. Planting too close to and within hardwood stands (or soils that support these species) completely defeats ecological considerations for hardwoods and deciduous species' long-term persistence. Hardwood stands can be fire-resistance and add resiliency to a diverse landscape within the Northern Great Plains, if they are free of conifers. Further, PIPO out-competes hardwoods and woody draw species. Upon maturity, PIPO will naturally re-seed close to and within hardwood stands. This is contrary to 2012 Planning Rule directives for ecosystem integrity and resiliency. SDGFP suggests the minimum of 150' guideline for removing conifer near hardwoods based on Shepperd and Battaglia (2002) "Clearing surrounding conifer forest back 1 to 1.5 tree heights away from a declining aspen clone will allow new suckers to establish and expand the area occupied by the clone."

1. Remove all conifers from hardwood stands, woody draws, grasslands, and meadows. Exceptions in the pine savanna geographical area may occur when very large diameter conifers(> 15") or wildlife trees occur within the stand or within the minimum 150 foot buffer zone. These areas plus the buffer zone will be removed from the suitable timber base and commercial conifers will not be required to be propagated. Smaller diameter (<8" dbh) conifers could be hinged to provide aerial barriers to large ungulates, allowing micro-sites where regenerating hardwoods escape browsing. (A similar standard with exceptions for much larger diameter conifers could be made for montane geographical areas.).

2. Following treatments or natural actions which aid in hardwood and deciduous species restoration, additional protection and conservation measures may require barriers to large animals, livestock deferment, or other means until it is determined that the treated or affected areas have obtained sufficient height and density to withstand large animal impacts. Barriers include but are not limited to piling slash higher than the normal allowed height, hinging of conifers within hardwood stands, and fencing.

Response: Responsible non-conifer vegetation management should be holistic to ensure functioning hardwood and deciduous systems. Conservation and protection of hardwood and deciduous species should be a normal part of forest and vegetation management.

1. Remove all conifers a minimum of 100 feet from within and surrounding established hardwood inclusions. An inclusion is defined as a minimum of 3 mature hardwoods (single or mixed species) and regeneration may or may not be present within the 66 foot radius of the inclusion.

Response: Due to lack of fire, forestry practices which favor commercial conifer species, and lack of historic consideration for hardwoods, many delineated conifer stands now have isolated pockets of hardwoods trying to compete and survive in a shaded forest. If hardwoods are still present, it indicates that they were likely present over 100 years ago (historic range of variability). Hardwood inclusions are often more abundant than delineated stands and should be actively recognized as important ecological components for vegetation diversity in the Final Plan.

2.3.11 GRASSLAND, SHRUBLAND, WOODLAND, RIPARIAN, AND ALPINE VEGETATION {VEGNF} Draft Plan page 48

01 Manage for XXX acres of prairie grasslands and XXX acres of meadows during the life of the Plan.

Restored grasslands and meadows will be considered unsuitable for timber production.

Response: No Standards were listed.

FW-GDL-VEGNF Draft Plan page 49

08 To minimize browsing pressure or trampling and rubbing damage to vegetation, new allotment infrastructure should not attract livestock into riparian areas, aspen or hardwood inclusions or stands or woody draws....

Response: As written, only aspen and woody draws would be protected. The guideline must be

broader and include sensitive riparian management zones and any hardwood species, such as green ash, cottonwood, etc.

1. To minimize browsing pressure or trampling and rubbing damage to vegetation, existing allotment infrastructure should be relocated out of riparian areas, aspen or hardwood inclusions or stands or woody draws as best management practices for these uncommon plant communities.

Response: Riparian areas, hardwoods, and woody draws are all uncommon communities within

the pine savanna. They are disproportionately critical to the diversity within the Northern Great Plains and require additional management consideration. The DEIS (page 178) states, "About 11,400 National Forest System acres of woody draws (green ash woodlands) occur on the Ashland and Sioux Districts. As a rare and biologically important landscape component, green ash woodlands should be managed to maintain or perpetuate a network of multi-layer and multi-age class of herbaceous plants, shrubs, and trees..... Within primary rangelands of

permitted livestock allotments on the Sioux and Ashland Districts, 19 percent of inventoried green ash woodlands are functional, 61 percent are at risk, and 20 percent are non-functional. The at risk and non-functional sites are largely a product of legacy issues due to woodcutting, livestock grazing, deer browsing, introduction of invasive rhizomatous sod grasses (predominantly, Kentucky bluegrass), and periods of prolonged drought." Further the DEIS (page

172) states, "Browsing and grazing of mesic shrubs and deciduous broadleaf seedlings can be detrimental to successful stand establishment and maintenance. Some areas may need to be fenced, depending upon extent and location of burned or treated areas or otherwise managed to control use by cattle and wild ungulates until the young trees are big enough to avoid being detrimentally grazed or browsed, which can be when a tree is over ten feet tall in elk habitat and with a fairly strong bole (girth)."

81% of woody draws are in extremely unhealthy, non-functional condition. This is discouraging but the reality is that bringing these particular woody draws back into a restored functioning state may be costly and infeasible and self-healing is unlikely. However, Plan Components should still aim to protect what is left of these areas especially the more healthy. Plan Components should highly recognize what types of actions can occur in woody draws, especially in the remaining 19% functioning draws. It is recommended to conserve what remains.

Soil compaction and trampling can be alleviated by tighter livestock control. Having seasonal restrictions on winter grazing where woody draws occur is necessary for the Revised Plan.

DEIS page 172

Browsing and grazing of mesic shrubs and deciduous broadleaf seedlings can be detrimental to successful stand establishment and maintenance. Some areas may need to be fenced, depending upon extent and

location of burned or treated areas or otherwise managed to control use by cattle and wild ungulates until the young trees are big enough to avoid being detrimentally grazed or browsed, which can be when a tree is over ten feet tall in elk habitat and with a fairly strong bole (girth).

Response: We agree that large herbivores and some small mammals can over-browse shrubs and shrubby plant forms. Fencing is not always cost effective but is an effective mitigation tool if kept in good maintenance. This discussion is important to the DEIS assessment, but Plan Components do not always match the narrative. Livestock can be moved or herded out of these areas especially when a certain percentage of the current year's leader has been browsed and a Plan Components to address browsing pressure are needed. Plan Components should provide the ability to move or herd livestock out of these areas and provide late-season guidelines to eliminate or reduce browsing. The DEIS (page 584) recognizes management short-comings in current management which are not ecologically sustainable:

These changes have occurred at a landscape level, while at an allotment level, some allotments have sustained little to no change in stocking rates since the plans were signed, while other allotments have undergone large stocking rate changes. Even though these changes over time helped make improvements to range condition in some areas, continued vigilance and adaptive management will be used to address issues and fine-tune management prescriptions. Attention is especially needed for:

*

* areas with season-long grazing,

* areas with long durations,

* during the fall when cattle diet preferences tend to switch more to browse species (such as green ash, willow or aspen),

* periods of time where distribution issues may arise in riparian or green ash draws (for example, during periods of hot season use),

* areas where stocking rates may not be in balance with carrying capacity, and

* areas with other resource considerations or concerns.

1. Utilization of willows, shrubs, woody browse and deciduous trees (such as aspen, green ash,

cottonwood) in any year by livestock or wildlife is limited to browsing 30% of the total individual leaders produced in that year. Livestock, horses, bison, pack animals and other domestic stock will be moved out of these habitats when browse use has been met or exceeded.

Response: DEIS as stated above acknowledges issues with soil compaction and heavy use of

woody draws and hardwood stands by livestock. With livestock on the CGNF until mid-October and mid-November, their diets have switched to browse as mentioned above. Additional Plan Components for protecting annual growth of woody browse will aid in adaptive management, horse, bison, pack animal and other domestic stock management, and AMP revisions. The 30% is a suggestion but other percentage scientifically supported would be suitable. SDGFP's suggested additions to the Plan should not be relegated to suggested Management Strategies. References in the reference section herein, such as Keigley and Frisina (1998) and multiple Uresk et al., should be considered for formulating a browse utilization standard and providing justification in order to sustain these rare and already impaired systems.

2.3.12 FIRES AND FUELS (FIRE)

FW-GDL-FIRE Plan page 50

1. Livestock grazing will be coordinated with other resource specialists to ensure that sufficient fine fuels are present to carry fire, meet prescribed fire prescriptions, and accomplish vegetation improvement objectives. This may result in deferred grazing (rest) at least one season prior to ignition. Livestock grazing will also be deferred (rest) at least one growing season following prescribed or wildfire to allow vegetation to rest, heal, and restore root reserves. Exceptions to post-fire rest may be due to the need to further impact non-native vegetation such as cool-season invasive species. Native vegetation should be protected by removing cattle prior to warm-season vegetation green-up. Rest may be extended beyond one year to allow shrub recovery before livestock herbivory occurs.

Response: SDGFP recommends addition of the above guideline. Perhaps we missed it in this or

the livestock section, but the DEIS (page 260) states a concern of reduced fine fuels and therefore, there should be a Plan Component to alleviate this concern: "In all alternatives, livestock grazing would occur on portions of the Custer Gallatin National Forest. Plan components would enable grazing activities to complement fire and fuels management, such as reducing fine fuels to lower fire risk. However, grazing can alter grassland and shrubland fire regimes through soil disturbance, increased competition from non-native annual grasses, and reduction in fine fuels (Knick et al. 2005). Duration and intensity of grazing could affect prescribed fire implementation by reducing available fuels. Location and timing of grazing could also affect prescribed fire implementation by restricting available burn units. Coordination with affected grazing allotment permittees should occur for all fuels treatments in order to meet objectives."

2.3.15 WILDLIFE (WI)

Introduction Plan page 55

"This section provides direction designed to maintain the diversity of animal communities and support the persistence of native and desirable non-native wildlife species on the Custer Gallatin..... "

FW -GDL-W L Plan page 58

1. Management activities should avoid disturbance at known active raptor nests and fledging areas during the breeding season. Raptors that establish nests near existing human use areas are assumed to be tolerant of the level of activity present when the nest was established.

Response: Buffer zones should be added.

1. To protect airborne migratory species, new wind, solar, or renewable energy developments should be located and designed to avoid or minimize impacts to birds and bats.

Response: The DEIS recognized that renewable energy sources of wind and solar are evolving

and do occur in the Northern Great Plains. Therefore, these energy sources are reasonably foreseeable actions proposed on the CGNF.

BATS (WLBAT)

FW -STD-W LBA T Plan pages 58-59

1. All parties seeking to research bats shall obtain proper wildlife handling permits from the state wildlife agency and US Fish and Wildlife Service.

2. Entrances into bat hibernacula, maternity roosts, or geologic features shall be restricted except for reasons related to human health or human life concerns. Rare exceptions may be permitted and limited for bat research with cooperation from the state wildlife agency.

Response: Suggested standards should be included in the Final Plan to provide more protection

and conservation to bats, their habitats, maternity roosts, and winter hibernacula. Too often people enter sensitive bat habitats (maternity and hibernacula) and the mere presence of humans, headlamps, and body temperature disrupt bats, causing stress and death.

1. Multi-directional escape ramps will be installed on all new livestock tanks or wildlife guzzlers. Existing watering infrastructure will be retro-fitted with multi-directional escape ramps for bats, birds, insect, and small mammal escape to avoid drowning and tainting water supplies.

GREATER SAGE-GROUSE (WLSG)

Draft EIS (DEIS)

DEIS pages 410 - 420

Information on Greater sage-grouse as a species and Need for Additional Scientific References:

The CGNF has recommended to the Regional Forester that the Greater sage-grouse be listed as a Species of Conservation Concern (SCC). The DEIS states that the "Regional Forester has determined that the best available scientific information (BASI) indicates substantial concern about the species' capability to persist over the long term in the plan area" (36 CFR 219.9 (c))." The DEIS (page 13) states BASI will be selected by FS Resource Specialists.

Response: SDGFP offers substantive comments (including e-mail correspondence from SDGFP to

CGNF on 11-2-18 and 11-21-18 which are incorporated herein by reference) regarding suggested edits to the Greater sage-grouse DEIS section and Plan Components for the Final documents and ROD. SDGFP concurs because this is a species which we track through our upland game surveys, is identified as a species of greatest conservation need (SDGFP Wildlife Action Plan 2014), and

has Global and State ranks as G3G4 and 52, respectively. And, lastly, we fund research and participate with various sage-grouse working groups. A species requires Forest Service (FS)

authority for viability and an all-lands approach to management of sage-grouse habitats. FS attempts to ensure that its Final Plan will be compatible with State Wildlife Action Plans.

However, SDGFP asserts that the current DEIS and draft Plan lack significant and relevant local science which can be integrated into meaningful Plan and Monitoring Components.

Correspondingly, we believe that a species identified through the species fine-filter approach

should have congruent, fine-filter BASI. Overall, the DEIS and Draft Plan primarily rely on two pertinent USDI FWS references (See DEIS citations 2013c and 2015c). These references offer very broad management approaches which do not always meet the intent of FS standards and guidelines for a more narrow planning area. Plan components are supposed to enable the species to be resilient and adaptable to stressors (identified in the DEIS) and likely withstand future environments (2012 Rule at [sect]219.19) such as renewable energy developments. It is SDGFP's opinion, that as written, the DEIS and Draft Plan Components do not meet this Rule requirement.

Standards and guidelines set out design criteria to be applied to projects and actions and lend themselves towards more effective and meaningful monitoring. For the FEIS, we believe these two citations should be supplemented with additional applicable science such as Flake et al.

2010, SDGFP 2014, and several WAFWA white papers, references cited herein, and suggested references in SDGFP 11-2-2018 sage-grouse e-mail correspondence to CGNF. Scientific information is then used to tailor and develop standards and guidelines applicable to the Ashland and Sioux GA and the Pryor Mountains (major land units with the greatest sage-grouse habitats) and elsewhere throughout sage-brush steppe on the CGNF.

Information on Sage-Grouse Habitat and Genetic Flow:

Sage-grouse in northwest South Dakota are on the easterly fringe of their range (SDGFP 2014) within a relatively small, isolated geographic area with fragmented habitats. Within the FEIS discussion, there needs to be mention that general and priority sage-steppe habitats within the Ashland GA, Sioux GA, and Pryor Mountains aid in sustaining sage-grouse within that fringe. However, for sage-grouse use in NW South Dakota, there is evidence that localized gene flow and movement among neighboring populations (Alberta, Montana, North Dakota, South Dakota, and Wyoming) exist (Oyler-McCance et al 2005 at page 1306. See also USFWS 2013 at page 63). This results in a positive correlation between genetic distance and geographical distance, suggesting an isolation-by-distance phenomenon. SDGFP suggests that the all-lands, integrated approach to sage-grouse conservation is critical to the long-term persistence and genetic diversity of these isolated clusters of genetically similar birds within the pine savanna (Ashland GA and Sioux GA) and elsewhere on the CGNF (see Oyler-McCance 2005 for other Montana genetics).

Sagebrush habitat in South Dakota occurs at the transition between sage-steppe dominated landscapes of Wyoming and Montana and the short-grass prairie of western South Dakota. Finally, South Dakota's sagebrush occurs at naturally lower density and height and does not meet the general habitat recommendations for sage-grouse (Connelly et al. 2000). This does not negate the fact that the birds use and rely on habitat which is available, regardless of how it is defined elsewhere across sage-grouse range. Therefore, the DEIS's lists of anthropogenic or ecosystem-based habitat alterations can indeed further reduce the carrying capacity for sage-grouse in this naturally marginal habitat. Further degradation, loss, or fragmentation of both general and priority habitats are a concern to SDGFP.

Response: There needs to be more developed Plan components using a fine-filter approach for

conservation of sage-grouse suitable habitat within the sage-brush ecosystems. The Management Zone I (Great Plains) is a priority area for conservation and the population is at high risk (USFWS 2013). See additional information below.

Information on Priority, General, and Suitable Habitats:

The DEIS defines sage-grouse suitable habitat as both priority (core) and general habitats. We found this definition once in the DEIS and it is difficult to relocate. The definition is then vague elsewhere in the draft documents.

Response: We suggest that "sage-grouse suitable habitat" be defined in the FEIS sage-grouse section, Final Plan, the glossary.

The CGNF DEIS and Plan components have put the greatest conservation measures and mitigation primarily on priority habitat rather than on suitable habitat. There was no justification why proposed management efforts apply a fine-filter approach and management recommendations mostly to priority habitat. The DEIS identified general habitat as part of suitable habitat and the glossary (Appendix F page

393) defined greater sage-grouse general habitat as habitat that may be essential for various life stages

and connectivity between priority habitats. The definition of sage-grouse habitat - general habitat management areas {Appendix F page 410} stated that some special management would apply to sustain the greater sage-grouse population. Also, the DEIS (page 223) stated "Plan components common to all revised plan alternatives require that vegetation management shall result in net loss of priority or

general sagebrush habitat or be beneficial to greater sage-grouse which is more limiting than the current plans directions."

Response: SDGFP asserts that general sage-grouse habitats across the Ashland GA, Sioux GA, and Pryor Mountains (a total of 137,106 non-contiguous acres. DEIS page 412) contribute to and greatly aid in the life requirements of sage-grouse and the opportunities to perform seasonal movements, occupy leks, use brood-rearing habitat, seek winter cover, and ensure gene flow.

Intact habitats, including priority and general, are more functional and resilient to disturbances compared to degraded habitats. Degraded habitats are too costly and infeasible to restore.

Therefore, the FEIS needs to clarify that both priority and general habitats will be given equal consideration in applicable Plan Components and the ROD. Our assertion that both priority and general (suitable) habitats should be equally conserved and managed aligns with the major purpose of identifying Management Zones (Stiver et al 2006). The adoption of general and priority habitats for management priorities was a unified approach by resource management agencies to conserve all sagebrush habitats whether general or priority. Suitable sage-steppe habitats must be managed per the WAFWA and partnership conservation initiatives "across the entire landscape" of xeric sagebrush because such an approach was one reason for justification of not listing sage-grouse. As written, the DEIS gave the impression to SDGFP that the partnership initiatives and science were not taken into greater account. We do not believe this is the intent of the Forest Service and offer recommendations to improve the FEIS and Final Plan. Increased protection and conservation measures for suitable habitat will meet the intent to ensure the long-term persistence and dispersal of sage-grouse across suitable sage-brush steppe. Improving these final documents will also demonstrate through time that CGNF is truly dedicated to the tenets of designating the sage-grouse as a SCC.

Further, key stressors which negatively impact localized gene flow (Oyler-McCance 2005) include habitat fragmentation, degradation, and loss (Stiver et al. 2015) along with disease (West Nile - Naugle et al. 2004). CGNF cannot control disease but it can control habitat management. Therefore, reductions in general habitat or habitat conditions are additive threats to the long-term persistence and gene flow of sage-grouse. SDGFP highly recommends an overall review of the sage-grouse, prescribed fire, livestock, xeric shrubland, and other relevant FEIS/Plan Components which affect sage-brush steppe habitats. Suitable habitat on CGNF should be managed with a fine-filter approach to provide the most contiguous, least disturbed habitats as possible.

DEIS page 410

The greater sage-grouse, hereafter referred to as sage-grouse, is North America's largest grouse, and is a sagebrush-steppe obligate species dependent upon the sagebrush for nearly all components of its lifecycle. Within the sagebrush-steppe, sage-grouse require a mixture of sagebrush, grasses, and forbs for adequate breeding and nesting habitats, hiding and thermal cover, and forage."

Response: Add suggested text. All forms of plant groups and attendant invertebrates are needed; sagebrush alone is not adequate for this species' life requirements which the DEIS implies. This edited information is necessary for proper land management and to allow monitoring to detect if some plant life forms are missing from sage-brush steppe. Management could then be adjusted and adapted appropriately.

Some populations are migratory between seasonal ranges (Connelly et al. 2004, 2011). Sage-grouse within the Planning area are both migratory and non-migratory (MTFWP 2005, SDGFP 2014) but both

types of populations remain. Sage grouse are not migratory, remaining year-round within the sagebrush/shrub steppe ecosystem.

Response: Add suggested text and edits. Stating that all sage-grouse populations are not migratory is inaccurate unless a clear definition of "migratory" is included in the narrative along with supportive citations.

Sage-grouse are a ground nesting species typically nesting under sagebrush with concealment provided by high lateral sagebrush cover and desirable, protective grass species (Connelly et al. 2000a). Nest success and sage-grouse productivity respond with increased vegetation height and residual cover in the understory. The importance of vegetative structure increases during and immediately following drought.

Response: Add suggested text. Again, the type of plant structure and forms are necessary to state in this narrative. Sage brush alone is inadequate and monitoring should detect plant structure. Management could be adapted accordingly.

Nest-to-lek distances vary depending upon habitat fragmentation and nearby disturbances (Connelly et al. 2011). Common nest-to-lek distances have been reported from 0.68 to 4 miles (Connelly et al. 2000a, SDGFP 2014, Stiver et al. 2015), with distances as high as 12 miles within South Dakota (SDGFP 2014).

Response: Add suggested text. This information can be correlated to quality nesting habitat, habitat fragmentation, and offers the salient point that management of intact sagebrush-steppe is critical to the species' persistence.

" Other nesting habitat criteria include a suitable amount and height of desirable grass and forb species, which provide hiding cover and forage. "

Response: This statement is too general and does not offer a definition of "suitable amount and height". If this sentence remains, then quantifiable measurements should be cited.

During winter, sagebrush represents the primary food source and provides cover from harsh conditions. Sage-grouse have also been found wintering in wind-swept areas where sagebrush plants are exposed throughout the winter months (Marks et al. 2016).

Response: Clarify which noun is the object of the sentence. Previous sentence is about habitat, not grouse.

DEIS page 411

There are approximately 2,200,000 acres of priority habitat within the planning area found on the lower elevation fringes of the Sioux Geographic Area. Priority habitat was designated because across the entire range of the Greater sage-grouse, priority habitat likely contains approximately 75 percent of all known breeding sage-grouse and represents landscapes of greatest biological importance to the long-term persistence of the species.

Response: As worded, the DEIS unintentionally makes it read as if 75% of sage-grouse populations on the Sioux GA are within 2,204 acres.

Affected Environment (Existing Conditions) DEIS page 412

These geographic areas are split across two different management zones, as identified in a collaborative effort through the Western Association of Fish and Wildlife Agencies (Stiver et al. 2006). Sage-grouse management zones were identified by floristic provinces and sage-grouse habitats (Connelly et al. 2004) population s (Stiver et al. 2006).... "

Response: Corrections and credit to the correct authors.

This priority habitat is associated with sage-grouse leks located on adjacent lands outside the national forest boundary (Devore, R. Montana FWP. 2018 . pers. comm., South Dakota GFP 2014)."

Key Stressors DEIS page 415

We appreciate the removal of today's regulated hunting as a key stressor to Greater sage-grouse on the CGNF.

The U.S. Fish and Wildlife Service cited "Habitat loss, degradation, and fragmentation are the as primary causes for greater sage-grouse population declines and some areas of local extirpations in recent decades (Stivers et al. 2015, USDI FWS 2015c). At present, there is no primary threat to sage-grouse populations and habitats in northwestern South Dakota because there are multiple factors, including disease (SDGFP pers. comm. Travis Runi a. 2018).

Response: Add suggested text. Degradation is lowering of habitat quality, not necessarily lost or fragmented. Stivers should be cited in addition to USDI because he is a recognized, expert sage-grouse biologist.

Human use can also cause functional loss of habitat due to disturbance from noise and human presence (USDI FWS 2013c). Ecosystem-based habitat changes combined with human-caused impacts further complicates habitat impacts (Chambers et al. 2016)." Bauman et al. (2018) stated that the loss of core (primary) sagebrush habitat in northwest South Dakota was minimal. However, new technologies, demands for various forms of energy, and increased exploration are rapidly growing (SDGFP 2014) and could be realized within the life of the Plan.

Response: Add suggested text. Need to emphasize that for this habitat obligate bird, the

combination of impacts makes it more critical to properly manage the sage-steppe habitat which occurs on FS lands.

Use of prescribed fire to intentionally remove suitable sage-grouse habitats within the sage-brush steppe to enhance grazing conditions for domestic livestock (all types, ages, breeds), bison, wild ungulates, or wild horses, would not be employed on the Custer Gallatin in order to achieve no net loss of sage-grouse habitats.

Prescribed fire or other vegetation treatments may be used on rare occasion to improve plant composition and structure for sage-grouse life requirements.

Response: A suggested addition for CGNF consideration. The need to occasionally treat sage[shy]

brush to retain open areas for bird foraging is accounted for. There tends to be vague and/or conflicting language or that which is open for wide interpretation among the various vegetation, fire, and sage-grouse sections as to when and why Rx fire can be implemented within sage[shy] steppe habitats. The FEIS and Final Plan need to clarify these inconsistencies in order to achieve no net loss of sage-grouse habitats.

"Grazing pressure from livestock, as well as impacts from wild ungulates and free-roaming horses have all been identified as potential stressors for sage-gro use and their habitats (USDI FWS 2013c).

Response: Other key stressors were explained within this section and examples were given. As

we previously asked (SDGFP correspondence 11-2-18), how are these large animal impacts key stressors? DEIS page 418 does explain some "Effects from Permitted Livestock Grazing." However, for wild ungulates, bison, pack animals, other domestic stock, and wild horses, key

stressor examples should be clearly delineated because it will assist CGNF in monitoring and assessing impacts (positive, negative, neutral) to Greater sage-gro use habitats. Evaluation of

large animal stressors will aid in supporting the reasons sage-grouse was selected as a sec. Are

there stresses in: 1) reductions in nesting and brood-rearing concealment cover? 2) Direct mortality by stepping on eggs or chicks? 3) Reductions in habitat quality and vegetation structure which can influence predator mortality? 4) Reduction of forbs which provide habitat for invertebrates, a critical protein source for sage-grouse and other sage obligates? 5) Trampling of seasonal meadows used by sage-grouse for foraging? See USFWS (2013) page 46 for free-roaming equid impacts.

Other factors that can affect sage-grouse populations include disease, parasites, predation, and weather events such as severe 5fjffRg-storms, hail, or periods of drought. These types of threats can vary in spatial and temporal impacts, but may impact populations locally. For example, in 2002, West Nile virus impacted the sage-grouse population in south, 11, 'est Jorth Dalwta (USDI FWS 2013c). This event occurred in close proximity to the easternmost part of the Sioux Geographic Area, where both primary and general sage-grouse habitat are located. For example, in 2007, 44% of radio-collared sage-grouse died from West Nile virus in northwestern South Dakota (K.C. Jensen as cited in Flake et al. 2010). West Nile virus was suspected as a major mortality factor of chicks in 2006 and 2007 in the same study areas (Kaczor 2008). These events occurred within close proximity to the easternmost part of the Sioux GA, where both primary and general sage-grouse habitats are located and where sage-grouse gene flow occurs. Regarding predation, when visual obstruction by vegetation is sufficient around the nest (i.e. high quality nesting habitat), predation may not be a major contributing factor to sage-grouse mortality in northwest South Dakota (Flake et al. 2010).

Response: Suggested edits and added text. As stated in our 11-02-18 comments to CGNF, it is more relevant and applicable to cite sage-grouse diseases within the Sioux Geographical Area rather than from outside in North Dakota. Please add this correction and relevant science in the FEIS.

DEIS pages 416-417

Some of the established disturbance offset distances may not be adequate, this includes the 0.25-mile restriction on ground disturbing activity between March 1 and April 15. Knick and Hanser (Connelly et al. 2011) identified a negative influence on lek persistence ...

Response : Double citation is awkward .

Relative to the current plans, the standards and guidelines set forth in these alternatives would provide protection across all seasonal habitats and address the key stressors to sage-grouse previously discussed..... In addition, man-made facilities and structures would be located and designed so as to be a conservation gain or have neutral impacts. An example of a conservation gain would be relocating a facility out of suitable habitat priority habitat into general or into non-habitat, or consolidation of multiple dispersed facilities affecting priority or general habitat into fewer developed sites with a smaller footprint, affecting less priority and general habitat. Response: Suggested reword of suitable habitat protection - see previous discussions herein. SDGFP suggests that a review of the Plan Components for Greater sage-grouse is needed to sincerely meet the above statement s. As written, the DEIS and draft Plan do not guarantee protection across all seasonal habitats nor address the key stressors such as habitat degradation and fragmentation, direct disturbances by infrastructure placement, energy development, and livestock grazing. See more comments on Plan Components below.

Effects from Minerals Management Energy Development (renewable and non-renewable)

DEIS pages 418-419

Information on Energy Development

Forest Plans are estimated to be living documents for a minimum of 15 years and in practice, 25 years or more. Many ecological and social changes happen within 15-25 years. Therefore, it is reasonably foreseeable that two additional renewable energy developments, wind and solar, could occur on public lands within the Northern Great Plains. " this growth is likely to continue given current and projected

demands for energy." (USFWS 2013). SDGFP suggests that the FEIS and Final Plan include renewable energy (2012 Planning Rule at[sect] 219.10 Multiple use (a)(2) (2) Renewable and nonrenewable energy and mineral resources). These two energy sources are present within central and western South Dakota.

Some companies are seeking special use permits to cross National Grasslands in South Dakota.

Response : Construction on or infrastructure through CGNF for renewable energy could likely be proposed on the CGNF. In the DEIS, there is a gaping absence of the effects to sagebrush steppe habitats and to sage-grouse (direct and indirect impacts) from wind and solar energy development (See SDGFP comments to CGNF 11-2-18) . For that matter, many habitats of many wildlife species could be impacted. For the Greater sage-grouse, only mineral development (which includes oil and gas) is discussed. Interestingly, "energy developmen"t is listed in the list of sage-grouse stressors and the conclusion, but there was no DEIS discussion of wind and solar. These two sources of energy development cannot be assumed to be included in the effects analysis as "infrastructure" because DEIS infrastructure did not specifically include wind turbines and solar panels. "Sage-grouse populations can be significantly reduced, and in some cases locally extirpated, by non-renewable energy development activities, even when mitigation measures are implemented." (Walker et al. 2007).

SDGFP suggests these energy sources be included in the FEIS and there should also be corresponding Plan and monitoring components for renewable energy such as wind and energy development .

It is recommended that new energy development be located outside of sage-grouse suitable priority habitats or located where development has alr eady occurred , subject to valid and existing rights..... Plan

components also include requirements for infrastructure such as roads, powerlines, trails and other facilities to minimize impacts to riparian habitats and limit disturbance to associated wildlife....

Response: Suggested Section Title edits and added text. Powerlines must be specifically included in the list because there is an entire science and technology behind avian protection due to powerlines (example: APLIC <http://www.aplic.org>) in addition to the risk of artificially attracting aerial predators to sage-grouse leks and brood-rearing habitats.

Effects from Recreation Management DEIS page 419

The installation, maintenance and use of recreation facilities including trails $\frac{14}{5}$ have the potential to affect sage-grouse through removal or fragmentation of habitat and displacement through avoidance of human use areas.

Conclusions DEIS page 419

There is potential for increasing sage-grouse numbers and distribution on the Custer Gallatin thereby supporting the species' long-term persistence in the plan area. However, due to the relatively limited amounts and isolated distribution of sage-grouse habitat across the Custer Gallatin, the Custer Gallatin habitats alone weHW support only a small population which could be vulnerable to ecological and human-caused stressors from both within and outside the national forest boundary. Therefore, without

additional species-specific plan components in the revised Plan, it is likely not within the inherent capability of the plan area to maintain or restore ecological conditions that alone, would support long-term persistence of sage-grouse within the national forest boundary.

Sage-grouse persistence across the species' range will require multiple geographically distributed populations to retain redundancy, representation, and resilience (USDI FWS 2013c). Primary and general habitats adjacent to the Custer Gallatin, aid in fulfilling the species persistence across geographically distributed populations. Additional species-specific plan components in all revised plan alternatives would maintain or restore ecological conditions within the plan area to contribute toward maintaining long-term persistence of the species within its range."

Response: The DEIS version of the two paragraphs are confusing and contradictory. We offer clarification, assuming we understand that CGNF is attempting to support 36 CFR 219.9 (2)(b)). The DEIS (page 410) states that "...the 2012 Planning Rule states that if plan components to maintain ecosystem integrity and diversity are insufficient to provide ecological conditions to maintain long-term persistence of each species of conservation concern within the plan area, then additional species-specific plan components are to be included to provide such ecological conditions (36 CFR 219.9 (2)(b))."

DEIS page 420

Known sage-grouse use on the Custer Gallatin is currently limited to summer brood rearing by a few individuals, in other words, their presence on the national forest is currently seasonal.

Response: Please cite sources that habitat is limited to summer brood rearing and sage-grouse presence is seasonal. Suitable habitat by definition includes year-round habitat. The nearest leks in South Dakota occur on priority habitats approximately 1-5 miles from the Sioux GA. Considering the majority of nesting in South Dakota can occur within 4.3 miles of a lek (Kaczor 2008) and winter habitats can range beyond 5 miles of a lek (Schroeder et al. 1999), birds are expected to spend at least some of their time on the Sioux GA annually. To date, a lek has not been located within the Sioux GA boundary, but priority habitat management on the Sioux GA is within the radius-influence of leks and therefore, can impact the year-round life requirements of sage-grouse.

Most of the sage-grouse habitat on the Custer Gallatin is located near the edges of Custer Gallatin administrative units, occurring as an extension of suitable habitat from adjacent land of mixed ownership. And in South Dakota, that habitat is annual habitat, meaning sage-grouse could have a year-round presence within the Sioux Geographic Area.

Response: Suggested rewording .

DEIS page 597

Summary appears to be thorough although if any SDGFP recommendations to the Draft Plan are adopted, there may be slight alterations to this section.

DEIS page 616

All revised plan alternatives provide plan components for conflict resolution between livestock and grizzly bear, bison, bighorn sheep, greater sage-grouse, and other wildlife.

Response: SDGFP did not see where this statement is accurate for greater sage-grouse in the DEIS or Draft Plan. By amending the Plan Components (below), SDGFP suggests that there should be clearer management direction to Forest Service employees which will reduce conflict

where Plan Components were missing or vague. Regardless, the Plan Components do not specifically offer "conflict resolution".

Draft Forest Plan

GREATER SAGE-GROUSE (WLSG)

SDGFP submitted these or similar comments to CGNF on 11-2-18 . We incorporate those substantive comments herein by reference or itemize selected comments again below.

Introduction Plan page 63

"Sage-grouse habitat is categorized as either priority or general habitat , collectively called suitable habitat."

Response: See comments above.

FW -DC-W LSG Plan page 63

02 Habitat conditions support stable to increasing sage-grouse populations (species long-term persistence).

Response: Suggested added text to correlate to the purpose of a sec and to meet the 2012 Rule requirement for ecosystem integrity ([sect]219.8-219.9).

See comments above for suggested changes to the DEIS pages 416-417. In order to meet the intention of selecting a SCC, SDGFP believes that one Draft Plan standard is woefully insufficient for effective habitat protection, mitigation, and management efforts to ensure the long-term persistence of Greater sage-grouse by reducing the negative impacts of the DEIS's stated key stressors {2012 Rule at [sect]219.8- 219-219.10). We offer the following Final Plan Components which should not be relegated to the list of optional Management Practices. Several suggestions are cited from an existing 18-year old FS Plan where sage-grouse occur on the Nebraska National Forest. If the FS was willing to offer these types of protective Plan Components 18 years ago, the CGNF Plan should meet or exceed these measures today given the 2012 Planning Rule and additional, relevant science.

As stated above, the Final Plan should also protect general habitats if there is to be no net loss of either suitable habitat or sage-brush steppe as stated throughout the DEIS and Plan components. (see SDGFP 11-2-18 comments to CGNF for citations including but not limited to: Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H., 2014).

1. In greater sage-grouse priority and general habitat, vegetation management, livestock and bison grazing, and wild-horse herbivory shall result in either no net loss of habitat or be beneficial to greater sage-grouse and sagebrush habitats.

Response: It appears that "no net loss of habitat" conflicts with GDL 1 of " ...minimize loss of existing sagebrush habitat." If the intent of this Standard is conservation of all sagebrush habitats, regardless of suitability for sage-grouse, this should be clarified and better defined.

1. Maintain or increase the patch size of sage-grouse use habitats. Within discrete sagebrush stands, maintain natural small open spaces at a ratio of no more than 25% openings and at least 75% sage shrub canopy to create diverse vegetation for all life stages of sage-grouse.

Response: Modified from the Nebraska National Forest Plan (2000). See SDGFP literature references from 11-2-18 e-mail to CGNF.

03 Seasonal restrictions for construction or other human development within XXXX miles of leks and brood-rearing habitats in priority and general habitats is March 1 - June 15. This includes but is not limited to construction, roads, range and livestock infrastructure, water impoundments, renewable energy developments and infrastructure, reclamation, gravel mining operations, water well drilling, oil and gas drilling (subject to valid existing rights), seismic exploration, workover operations for maintenance of oil and gas wells, permitted recreation events, and training of hunting dogs. Other restricted or prohibited activities would be determined by wildlife biologists.

Response: There are no timing restrictions or buffers in the Draft Plan. Table 1 offers seasonal timing restrictions and buffer distances to be included in the standards to truly meet the intent to reduce losses of suitable and/or all sage-steppe habitats due to FEIS key stressors. The CGNF Plan needs to establish clear direction to future project planners by selecting a distance. See also USFWS (2013) which has recommendations for some infrastructure at 7 miles of leks. Plan Components as conservation measures should not be up for interpretive debate among employees. (Table 1 citation: Conservation buffer distance estimates for Greater Sage-Grouse [shy] A review: U.S. Geological Survey Open-File Report 2014- 1239, 14 p.,

<http://dx.doi.org/10.3133/ofr20141239>)

Table 1. Lek buffer-distance estimates for six categories of anthropogenic land use and activity. Literature minimum and maximum values are distances for observed effects found in the scientific literature . Interpreted ranges indicate potential conservation buffer distances based on multiple sources. [Citations for literature minimum and maximum values are denoted using corresponding symbols in the References Cited section.]

| Category | Literature minimum | Interpreted range (lower) | Interpreted range (upper) | Literature maximum |
|---------------------|--------------------|---------------------------|---------------------------|--------------------|
| Surface disturbance | 3.2km (2mi) | 400m (0.25mi) | 5km (3.1mi) | 8km (5mi) |
| Linear features | 20km (12.4mi) | 18km (11.2mi) | 0 | 0 |
| Energy development | 3.2km (2mi) | 5km (3.1mi) | 8km (5mi) | 20km (12.4mi) |
| Tall structures | 1km (0.6mi) | 0 | 3.3km (2mi) | 18km (11.2mi) |
| Low structures | 200 m (0.12 mi) | 2 km (1.2mi) | 5.1 km (3.2mi) | 5.1 km (3.2mi) |
| Activities | 400 m (0.25 mi) | 1 | 400 m (0.25 mi) | 4.8 km (3mi) |

1. To avoid sage-grouse reproductive failure, limit noise and vibrations near sage-grouse leks (on Forest or nearby adjacent lands) from nearby facilities and activities to 49 decibels (10dBA above background noise) from March 1- June 15.

Response: "Functional habitat loss also contributes to habitat fragmentation, as

greater sage-grouse avoid areas due to human activities, including noise, even though sagebrush remains intact" (Blickley et al. 2012). The final Plan should have the intention to include both disturbance and noise restrictions which will aid in the long-term persistence of this species.

SDGFP believes that these restrictions should not be moved to the Management Approaches. These standards are modified from the Nebraska National Forest (2000).

1. Manage for high vegetative structure in suitable to aid in cover from elements and predators. High structure is relevant to the potential of the area vegetation .

Response: High structure is needed for security cover from predators and storms and thermal cover during extreme temperature events. The DEIS (page 576) states a need for higher structure in the mid-range and a Plan Component will aid in that effort.

"Uplands - Past management practices have altered the composition and structure of plant communities and are affecting the ecological integrity in some portions of the uplands. Based on field observations and comparisons to data collected in the 1960s, there has been an upward shift towards more mid-structured grass species. However, there is still a need to continue to increase the amount of mid-structured grass species on all allotments with less dominance of short-structured grass species so that they exhibit closer similarity to potential in these areas."

SDGFP has provided substantive comments with scientific recommendations for additional Plan Components which require higher structured grasslands for overall rangeland health and functioning ecosystem within the Northern Great Plains. The information below is from the Nebraska National Forest Plan (2009), Appendix Hat

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9027955.pdf). The information was slightly modified by SDGFP to accommodate the CGNF's species candidate, the greater-sage

grouse. NNF's scientific references are also listed below.

Information from the Nebraska National Forest Plan (2009) which set the intent of management of sagebrush habitats to sustain this community type and for sage-obligate species. Please use or incorporate this information as it applies:

SAGEBRUSH HABITATS WITH TALL, DENSE AND DIVERSE UNDERSTORIES

Greater Sage Grouse (*Centrocercus urophasianus*)

The sage-grouse is selected as a species of conservation concern for sagebrush habitats that have tall, dense and diverse herbaceous understories. These areas typically have a history of lighter livestock grazing intensities. A list of other wildlife species that typically favor these habitat conditions include sage thrasher, Brewer's sparrow, pronghorn and sage vole. Several species of upland nesting waterfowl also respond favorably to these habitat conditions that result from lighter grazing intensities and periodic rest from annual grazing.

Sagebrush stands with relatively tall and dense sagebrush and an abundance of residual herbaceous cover are preferred by sage-grouse for nesting. Nest success and sage-grouse productivity have been reported to increase with increased sagebrush height and residual cover levels in the herbaceous understory. Once again, the importance of residual cover is noted, and its importance undoubtedly increases during drought years when current year herbaceous cover is reduced or unavailable.

Most nesting in Wyoming occurred in sagebrush cover of 20 to 40 percent, which is comparable to what is reported in other states. Other investigators suggested that sage cover over 30 percent may be too thick, and nesting suitability for sage-grouse may begin declining beyond that level. Quality habitat is described as a sagebrush stand with 15 to 25% canopy cover of sagebrush and a tall and dense understory of native grasses and forbs. The tallest sagebrush available on Wyoming sites is reported as being preferred for nesting and is also valuable as winter habitat. Tall (>7 inch height) and dense residual herbaceous cover of native grasses and forbs from the previous growing season provides the cover available at the onset of the nesting season when most nest sites are selected and egg-laying and incubation begins. Most nests are within 2 to 3 miles of display grounds.

Brooding habitat is found in sagebrush communities of 10 to 30 percent sagebrush cover with small grassland openings or intermingled meadows that support an abundance of bugs and forbs like dandelions and yarrow for foraging by young grouse. Like other prairie grouse species, grasshoppers and other insects are also important diet items, especially for broods.

Corresponding Greater Sage Grouse References From the Above NNF Narrative

Colin, M.S., W.D. Edge and J.A. Crawford. 1998. "Nesting Habitat Selection by Sage Grouse in South[shy] central Washington." *J. Range Manage.* 51(3):265-269.

Connolly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2001. Guidelines for Management of Sage Grouse Populations and Habitats. in press *Wildl. Soc. Bull.*

Heath, B.J., R. Straw, S.H. Anderson and J. Lawson. 1997. Sage Grouse Productivity, Survival, and Seasonal Habitat use Near Farson, Wyoming. Wyoming Game and Fish Department.

Maj, M. and J. Mariani. 1995. Sage Grouse and Range Permit Reissuance. Unpublished FS Region 1 File Rep. 6 pp.

Paige, C. and S.A. Ritter. 1999. Birds in a Sagebrush Sea: Managing Sagebrush Habitats for Bird Communities. Partners in Flight Western Working Group, Boise, ID. 47 pp.

Patterson, R.I. 1952. The Sage Grouse in Wyoming. Sage Books, Inc., Denver. 341 pp.

Peterson, J.G. 1995. Ecological Implications of Sagebrush Manipulation: a literature Review. Montana Fish, Wildlife and Parks, PR Project (W-101-R-2) Report. 49 pp.

Schroeder, M.A., J.R. Young, and C.E. Braun. 1999. Sage Grouse. In The Birds of North America, No. 425 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Stroud, D. and K. Spence. 1991. "Sage for Wildlife." Wyoming Wildlife 8:18-25.

Wallestad, R.O. 1975. Life History and Habitat Requirements of Sage Grouse in central Montana. Mont. Fish and Game Dept., Tech. Bull. 66pp.

1. No leks will be lost or disturbed due to multiple -use management.

Response: SDGFP recommend this additional Plan Component.

FW -GDL - W LSG Plan page 63

Guideline: A constraint on project and activity decision-making that allows for departure from its terms, so long as the purpose of the guideline is met.

1. In greater sage-grouse suitable habitat, fire management tactics and strategies should minimize loss of existing sagebrush habitat result in no net loss of existing sagebrush habitat by using the safest and most practical means as determined by fireline leadership and incident commanders.

Response : "Minimize loss" will have some level of impact on existing sagebrush steppe compared to "no net loss". The Plan needs to clarify why the two sets of terms are used because they are contradictory in practice and interpretation.

1. Wildfire rehabilitation projects in greater sage-grouse habitat at high risk of non-native vegetation invasions should seed with an appropriate native seed mixture to reduce the probability of non-native vegetation species' establishment.

2. New power transmission corridors or energy infrastructure developments should not be located in priority or general habitat unless the infrastructure can be buried without permanent damage to or loss of established sagebrush communities. The intent is to minimize net loss of habitat, avoid disturbing sage-grouse on breeding grounds, and limit the risk of sage-grouse mortality from collisions with infrastructure or from predators using infrastructure for hunting perches.

Response: SDGFP offers edits to strengthen the intent of this guideline.

1. Range structures that are currently contributing to negative impacts to either sage-grouse or their habitats should be removed, modified, or moved at XXXX miles away to remove the threat to impacted habitats.

Response: Guideline 6 was taken from the USFWS (2013) Conservation Measures but as written for a federal management agency with many resource programs, it is too vague and leaves it wide open for inconsistent employee interpretation. SDGFP recommends that this be added to the Final Plan (modified from USFWS 2013). For distances from leks, see Table 1 above and USFWS (2013).

1. New energy (renewable and non-renewable) developments, pipelines and underground utilities should not be located in general or priority sage-grouse habitats, subject to valid existing or statutory rights. If these developments cannot avoid general or priority sage-grouse habitats,

infrastructure can be buried without permanent damage to or loss of established sagebrush communities. The intent is to not degrade, fragment or lose quality habitat and to eliminate disturbances on breeding grounds.

Response: The Final Plan should account for potential renewable energy developments such as wind and solar. Additional Plan Components are therefore, required. See SDGFP comments above regarding the 2012 Planning Rule in our section for the DEIS page 418-419 - Effects from Energy Development.

1. Construction of facilities or structures should be of low profile or use perch inhibitors to discourage avian predation to sage-grouse.

Response: Taken from NNF Plan (2000).

09 Lek or display ground viewing activities must be placed and managed to reduce disturbances and adverse impacts to sage-grouse during March 1-June 15.

Response: Unknown if CGNF is going to allow recreational viewing and special use permits for viewing structures/shacks - it is a big deal with the public on some National Grasslands in SD. CGNF should be prepared for this activity.

1. At the onset of drought, during drought, and at least one year post-drought, evaluate the need to adjust land uses, livestock, bison, all domestic stock, and wild horse grazing to reduce impacts on sage-grouse priority and general habitats.

Response: Modified from the NNF (2000) Plan. This guideline allows the plant community, hydrology, and wildlife to better sustain impacts during drought and recover from drought.

1. Sagebrush within 100 yards of meadows, riparian areas, and other sage-grouse foraging habitats should not be burned, sprayed, or treated unless there are supportive biological reasons.

Response: Management practices that should be clear to all employees and not be offered as possible management strategies. These actions should not be left to wide interpretation and inconsistent implementation.

1. Fences within high risk areas for sage-grouse collision will be marked with permanent flagging or other suitable device to reduce sage-grouse collisions on flat to gently rolling terrain in areas of moderate to high fence densities (more than 1 km of fence per km²) located within 2 kms (7-8 miles) of occupied leks.

Response: The Plan had no guideline to avoid bird collisions on USFS fences. Modified from USFWS (2013) which cited Stevens et al. (2012).

Appendix A: appendices for the draft revised forest plan - management approaches

pages 30-31 for Greater sage-grouse

SDGFP highly recommends that there be a clear distinction between various forms of energy development and that Appendix A should have potential management strategies which correspond to both non-renewable minerals (mineral rights) and renewable energy sources (i.e.: wind and solar). See other comments herein regarding the 2012 Rule and all forms of energy.

The Management Approaches for sage-grouse and sage-grouse habitats could reference the website below for applicability to Montana and South Dakota:

<http://www.fs.fed.us/science-technology/fish-wildlife-plants/sage-grouse/implementation-guide>

Appendix F: Glossary

Page 410: Sage-grouse habitat - priority habitat management areas. The definition cites the Conservation Objectives Team but should include the citation: USFWS (2013).

LIVESTOCK GRAZING, LARGE ANIMAL MANAGEMENT, RANGE MANAGEMENT, AND RANGE ECOLOGY

2.4.5 PERMITTED LIVESTOCK GRAZING (GRAZ) page 74

See also SDGFP comments within the riparian and aquatic, woody draw, tree and shrub, greater sage[shy]grouse, sections above. Livestock grazing is critical to the local economy (DEIS page 567) and is highly supported by SDGFP. Many of our employees are from farms and ranches. We work side by side with landowners through various programs because they provide substantial wildlife habitat in South Dakota. SDGFP also has a great interest in range management of all large herbivores, including big game, on public lands. Throughout this Plan Revision Process, SDGFP requested numerous times through various communications, to discuss the terrestrial vegetation, range management, and livestock management sections during preparations of the draft Plan and EIS. We did not receive that consideration and consequently, our comments

pertaining to range management, grazing, and browsing are now substantial and complex. Some comments are likely irrelevant. We incorporate by reference, our previously submitted comments on livestock.

Often the DEIS and Plan Component language waver between stating that allotments do not have to meet new plan directives (other than riparian areas) until there is a revised Allotment Management Plan (AMP) to stating that changes will be made to current AMPs to ensure grazing practices are meeting the new plan. The DEIS (pages 219-220) states, "None of the alternatives change existing allotment management since those decisions are made at the allotment level..... Under all alternatives, changes to

livestock management and allowable forage use levels at the site-specific scale would be made during allotment management plan revision. Furthermore, there are resource mitigations and best management practices that are part of allotment plans designed to protect or mitigate forest resources from potential disturbances by livestock grazing." The DEIS (page 570) states, "Livestock grazing would be managed to meet specific standards and guidelines for rangeland health and resiliency, including riparian standards and guidelines.....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." Response: Legal requirements for allotments and current allotment management plans (AMPs) to meet new plan components should be clearly listed in the FEIS and ROD. Those management actions which can take effect outside of new NEPA should be clearly justified. Other than riparian protection, adjustments to livestock grazing and range management waiver throughout all draft documents. We questioned this elsewhere throughout our Cooperative participation in written reviews of draft documents (including but not limited to SDGFP correspondence to CGNF 9-28-18 and 11-2-18 regarding sage-grouse). If AMPs are not revised for 10-25 years, then truly, grazing as an authorized multiple-use is not meeting new plan directives during the life of the revised Plan outside of riparian area Plan Components.

In another Forest's 2012 Plan revision, a phased-in approach for livestock grazing to meet a revised Plan was recommended. We do not know if it was adopted in the ROD. We suggest that the CGNF could explore the possibility of a phased-in approach in order to meet the new Plan directives in a shorter time frame than the life of a Plan (15-30 years in reality). Based on the other Forest Revised Plan, CGNF could explore the suggestion that new NEPA will be initiated within 12-18 months (or other reasonable timeframes) to adjust existing allotment management plans and compliance with new Plan directions. Allotment management plans, annual operating instructions (AOIs), or other instruments used for grazing management of all types of livestock and domestic animals, could continue to be modified to be consistent with new Plans.

Modification can be through adaptive management where that practice was incorporated in the AMP revision process.

CGNF, together with permittees and relevant stakeholders, could prioritize allotments and necessary modifications where most needed to ensure that grazing management meets ecological integrity, potential vegetation and soil resiliency, and wildlife habitat Plan Components for rare, sensitive, and SCC species. However, in order for this public land multiple[shy] use to continue to meet or exceed ecosystem services and integrity, the CGNF needs to make it clear to the public and permittees what is expected of existing AMPs and grazing practices.

Statements that livestock grazing through the Revised Plan will ensure ecological integrity are only partial reality if AMPs are not required to meet new directives soon after the ROD is signed. Please clarify and adjust all draft documents accordingly.

Existing grazing permits would continue to be administered under current allotment management plans. However, they would be required to meet or be moving towards desired conditions for riparian areas as outlined in the revised forest plan. When allotment plans are updated they would need to be adapted to meet or move toward riparian management zone desired conditions.....

There [frac12][pound]-are no differences in effects among the revised plan alternatives, as all would adopt the riparian management zone plan components across the Forest. As the proposed forest plan directions are

implemented in allotment management through terms and conditions of the permit, it is concluded that degraded riparian areas would move toward desired conditions.

Response: These DEIS statements indicate that existing livestock grazing permits and future

updated AMPs within riparian areas would only be met or move towards revised Plan desired conditions, not all Plan Components for riparian areas. Please clarify and explain how "desired conditions" terminology is used in the context of allotment management now and in the future.

DEIS page 238

In all alternatives, livestock grazing would occur on portions of the Custer Gallatin National Forest. Plan components would enable grazing activities to complement terrestrial vegetation management, such as reducing fine fuels to lower fire risk. While grazing and trampling from livestock can damage native plants and tree seedlings and saplings, plan components are in place that would ensure that grazing is managed to promote sustainable and vigorous native plant communities. Further, components are in place that would ensure that grazing does not adversely impact the regeneration of forests, or re[shy]

seeding of non-forested areas with desirable native vegetation. Plan components would also ensure that grazing is managed in a manner that would not lower site productivity (through damages such as compaction), and limit the spread of invasive plant species into native plant communities.

Response: Stating that Plan Components are in place to avoid various impacts due to livestock

grazing, implies that grazing will meet Plan Components upon signing of the ROD and implementation of the new Plan. In this particular section, the DEIS does not state that Plan compliance (other than riparian areas) will be expected only when AMPs are revised. The DEIS is unclear exactly what is expected from the livestock grazing and range management programs as far as meeting Plan Components upon signing of the ROD and implementation of the new Plan vs. only when AMPs are revised.

FW-OBJ-GRAZ

page 78 and DEIS pages 220, 224

SDGFP supports "Vacant grazing allotments would most likely be used as forage reserves for allotments affected by fire, depredation, threatened and endangered species, or riparian management issues; or they may be closed for conservation or economic considerations." Grassbanks assure that

...

pastures and allotments which require some form of rest or restoration are afforded time to heal. 11 to

be in ecological balance with this draughty environment, forage use should allow for recovery and accumulate a forage reserve against future droughts." Grassbanks also assure that some permittees affected by an event are offered alternative grazing to the best degree possible.

FW-GDL-GRAZ pages 77-78

01 New or revised allotment management plans should be designed to maintain stream, seep and spring habitats and water quality by minimizing sediment delivered to watercourses and degradation to streambank stability and saturated soils from livestock grazing in riparian areas.

Response: see SDGFP 9-28-18 comments to the Vol 2 DEIS. Guidelines which state "new or

revised AMPs"; does this choice of wording suggest that current grazing practices do not have to meet these guidelines now but only upon a revised AMP?

See SDGFP comments above in the Aquatic section. The DEIS stated that PIBO for stream monitoring was developed for salmonid habitats and that some monitoring methodology was not yet adopted for the pine savanna of the Northern Great Plains. The DEIS also stated that 25% of 6th order watersheds within the pine savanna were functioning at-risk. And, only 4% of

perennial streams on the CGNF are within pine savanna. This all points to the fact that the DEIS and draft Plan do not provide sufficient protection of pine savanna/Northern Great Plains riparian resources including wetlands, seasonal wetlands, ephemeral and perennial stream, seeps and springs. Effective changes to riparian management are proposed in all revised

Alte rnatives, which we support. However, GDL 01 above mentions streambank stability and yet no apparent methodology is referenced and no streambank stability end points are delivered as a metric {degradation is not defined in the Draft Plan). See SDGFP discussion herein on MIM, streambank stability and alteration. In practice, GDL 01 is not meeting an intent to protect streambanks from livestock and other large animals. Without the addition of required levels of stability and alteration, there may be no measurable methodology implemented to document

[bull]

11 degradation" and the cause. This makes it difficult for the public and CGNF to offer adaptive management strategies to amend 11 degradation11

1. To maintain or improve riparian aquatic habitat and achieve riparian habitat desired conditions specific to an ecological site over time, low gradient, alluvial channels should have end of season stubble height of hydrophilic and/or terrestrial vegetation along the greenline be at least 10 to 15 centimeters {4 to 6 inches). Alternat ive use and disturbance indicators and values, including those in current Endangered Species Act (ESA) consultation documents, may be used if they are based on site capability, relevant science, monitoring data and meet the purpose of this guideline.

Response: see SDGFP 9-28-18 comments. Some degraded systems may have very little or no hydrophilic vegetation. As it reads, only those systems with proper hydrophilic vegetation are included in this guideline. See also DEIS pages 74-75 which indicate non-hydrophilic grasses are within riparian systems.

01 0 On big game, winter range, New or revised allotment management plan and other domestic stock grazing prescriptions should be designed to meet big game forage and neonatal cover needs, ground nesting/foraging birds, invertebrates such as pollinators, and floristic diversity (composition and structure) in coordination with other uses. Avoid season-long grazing except in certain circumstances where non-native vegetation needs concentrated livestock impacts.

Response: Make GDL 03 a Standard as there are no standards offered in the draft Plan for ecological integrity of terrestrial vegetation.

SDGFP suggests an additional desired conditions Plan Component for the pine savanna geographical areas. We have stated this in previous comments to CGNF. These desired conditions will greatly assist in meeting the Plan Component above:

Desired Conditions

For the pine savanna geographical areas, the following vegetation structure and compositional desired conditions will be met.

Manage to meet vegetation structure identified below for the pine savanna geographical areas:

High Moderate low

25 to 45% 45 to 65% 1 to 20%

High vegetation structure can be achieved on moderate and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderate to highly productive soils but dominated by short-statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderate to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within these pine savanna geographic

areas receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in early intermediate or early seral stages will not achieve moderate structure under even light grazing

levels.

Low productivity soils, prairie dog colonies, and grassland areas grazed by livestock at high

intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Manage to meet vegetation composition identified below for the pine savanna geographical areas:

In the late seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent tall grasses. On clayey, silty, and thin upland range sites western wheatgrass, green needlegrass, porcupine grass, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grasses. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In the late intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent short grasses. The dominant grass species in the late intermediate seral stage should be western wheatgrass with the codominance made up of needleandthread, porcupine grass, blue grama, and sedges. The mix of grasses making up the codominance in late intermediate seral stages will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In the early intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses and to a lesser extent mid grasses. Dominant grass species in the early intermediate seral stage should be blue grama, buffalograss, western wheatgrass, needleandthread, and sedges. The mix of grasses making up the codominance in

early intermediate seral stages will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In the early seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses with little if any presence of mid grasses. The early seral stage will be dominated by sedges, and short grasses such as blue grama and buffalograss on all range sites. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses. The early seral stage should be emphasized on the less productive claypan soil types, in and around prairie dog towns, and in isolated areas of high livestock use.

Response: We submit substantive comments and recommendations for rangeland ecosystem health because the DEIS and Draft Plan are not in keeping with today's knowledge of range ecology and science, especially for the Northern Great Plains. There is very little in the draft Plan

outside of riparian area directives, which actually demonstrate that repeatable, measurable Plan Components will address terrestrial rangeland health which is necessary for all ecological functions, commodity outputs, and public values. Floristic diversity in the form of species composition and structure of grasses and grass-like vegetation are integral to the health of the Northern Great Plains and those species which require a variety of plant communities and heterogeneity within grasslands. Plant diversity also aids in cattle weight gain, condition, and health. The structure and composition suggestions are directly from the Nebraska National Forest (2009) Land and Resource Management Plan at pages 2-21- 2-22.

http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fs_m9027969.pdf

NNF is a 10-year old Plan and SDGFP believes that the CGNF certainly can meet other FS Unit requirements which have already been employed for Northern Great Plains range health. Some variation of these recommendations certainly can be modified for the CGNF.

Not all CGNF geographical areas have designated big game winter range. For the Sioux GA, most of the isolated pine escarpments are year-round big game range. Neonatal ungulate fawns (Uresk et al. 1999), calves, and lambs will need sufficient vegetative structure for hiding cover. The DEIS indicated that many allotments lack an abundance of mid-structure vegetation height. The above suggestions would help resolve the lack of structural diversity. Additional substantive information for the need of higher structured grasslands is also provided above in the greater sage-grouse comments.

OS New allotment infrastructure should be located sufficiently out of 0.25 mi. away to minimize livestock impacts on aspen, hardwoods, woody draws, riparian areas, groundwater-dependent ecosystems and at-risk plant species to avoid livestock impacts on these sensitive plant communities. Existing allotment infrastructure in these areas will be relocated when feasible.

Response: See SDGFP 9-28-18 comments. Distance used is similar to GDL 4. There needs to be accountability to existing infrastructure to meet new Plan Components and to match the directives for energy development in GDL 9. Relocation of existing livestock infrastructure will give all multiple uses and sensitive habitats the similar considerations.

1. New or reconstructed water developments should be designed to be wildlife friendly and to facilitate animal escape. Existing water developments which do not have these features will be retrofitted.

Response: See SDGFP 9-28-18 comments. There needs to be accountability to existing infrastructure to meet new Plan Components and to match the directives for energy development in GDL 9. Relocation of existing livestock infrastructure will give all multiple uses the similar considerations.

1. New locatable or leasable mineral and non-renewable energy developments should use specific mitigation measures to reduce impacts on livestock distribution and forage values from surface disturbance activities. Existing range improvements should be relocated as necessary to accommodate new mineral and non-renewable energy developments.

Response: The possibility of renewable energy needs more consideration and will meet the 2012 Rule requirements. See comments above in sage-grouse comments.

Recommended New Standards which have been previously recommended in various ways:

1. Incorporate periodic rest into existing allotment management plans, revised plans, or other large animal management plans where rest is required for the following for not limited to: meeting

desired conditions, increased fuel loads for prescribed burning, for research purposes, where taller structure is needed, to rest areas with woody browse, and where rest is desired for biological diversity.

1. Adjust stocking rates to account for the variations in livestock (domestic stock such as sheep, goats, cattle, llamas, horses, and bison) weights and forage requirements in order to meet desired conditions and Plan Components for riparian, range, woody draw, hardwood, and other vegetation and range ecosystem needs.
2. Prioritize and remove livestock and other domestic stock infrastructure when not contributing to achieving desired conditions and Plan Components.

DEIS pages 585-587

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 standards and guidelines) are variable across the Planning Area, an interdisciplinary team will incorporate Plan Components within XXXX months of signing the ROD. Some site-specific management directions may be fine-tuned during revised or updated allotment planning NEPA processes.

Response: This section may need to be reworded or better explained as it relates to the conflicting DEIS statements of when livestock management will move towards revised Plan Components. CGNF must incorporate various vegetation desired conditions and other Plan Components into existing animal grazing plans in order to move toward Plan Components and the 2012 Planning Rule within the life of the Plan. While variation certainly exists, range science, literature, university researchers, states, and FS staff, have the capacity and knowledge to put into place certain desirable rangeland conditions now, not 10-30 years from now because many allotments are infrequently updated, and at least 22 on CGNF have never had NEPA analysis and a decision. SDGFP has provided sufficient substantive comments to justify why CGNF needs to be current on range and ecological sciences with a revised Plan. Also, there are no specific, measureable bank disturbance guidelines currently in the draft Plan and grazing is required to meet riparian area Plan direction upon signing of the ROD (2012 Planning Rule and mentioned throughout the DEIS), not when allotments are revised years from now.

2.4.6 TIMBER (TIM) FW -STD-TIM pages 81-83

04 Clearcutting shall be used as a conifer harvest method only where it has been determined to be the method most appropriate to meet the purpose and need of the project outcome. Other types of even-aged harvest shall be used only where determined to be appropriate. Determinations shall be based on an interdisciplinary review of site-specific conditions and the desired conditions for vegetation, wildlife habitat, scenery, and other resources. Regeneration of aspen and other hardwoods shall be implemented through other means appropriately proven successful in scientific literature relevant to western forests.

Response: See additional comments in the 2.3.10 Forested Vegetation section. The Plan section which pertains to clearcutting for purposes of harvesting a marketable product, presumably a conifer species, should be clarified. There should also be considerations for treating hardwoods for regeneration purposes. Generally, there are no commercial markets for hardwoods in SD for

the Sioux Ranger District except perhaps firewood gathering. Clearcutting, or coppice, treatments of aspen and other hardwoods are usually unsuitable for the pine savanna geographical areas of CGNF and other ecosystems in the Western US. Within the eastern portions of the CGNF, these hardwood species are frequently in marginal condition and invaded by conifer species which shade-out deciduous species. Prescribed fire or skidder action of removing conifers are often the only "treatment" needed to stimulate hardwood suckering. On rare occasion, selective cuts of a few individual hardwood trees may (but not always) regenerate the stand. It is well documented in SDGFP letters to the Black Hills National Forest and correspondence with the Sioux Ranger District, that clearcutting or coppice of hardwood stands is best applied in very moist climates, such as the Lake States or further east of the Missouri River in South Dakota. Where aspen and other hardwoods are in marginal habitats, in marginal condition, on the fringes of its range, or encroached heavily by

conifers, there needs to be a set of Plan Components which require a holistic approach to treating hardwoods, including protection of inclusions and shoots following removal of conifers.

Shepperd and Battaglia (2000) stated: "Aspen regeneration should be closely monitored, however, to insure that declining clones are recovering. Fencing, or other measures may be needed to allow sprouting to introduce a new age class into the clone before deer are allowed access." SDGPF experience is abundant in conservation measures to protect hardwoods within conifer forests. Fencing is very effective if fences are annually maintained, but they are expensive. In addition to livestock grazing, increasing elk populations may also be a key stressor to regenerating hardwood and deciduous species. Both species' diets switch to browse after summer forage dries and cures which the DEIS acknowledges. Elk often de-bark aspen, sometimes causing complete bark girdling and consequently, creating disease entrance or tree mortality. The greater the protection and conservation afforded aspen and hardwoods, the greater the likelihood deciduous species withstand human, large animal, and natural disturbances.

A standard or guideline within the Forest Plan will ensure that a FS employee who has spent time in the Lake States, the east or southeastern US, will not attempt to apply clearcutting and/or coppice hardwood forestry practices to western aspen and hardwood stands (it happens). Clearcutting and/or coppice silvicultural treatments will cause more harm to the hardwood stand by risking complete loss of the stand or inclusions. With any human-caused hardwood treatment, there should be some remaining mature hardwoods as an "insurance policy" should the treatment fail; and they often fail for various reasons. In addition, the limited distribution of hardwoods in the pine savanna geographical areas, create ideal and very small "ice cream stands" for wild and domestic ungulates. These small areas are then repeatedly targeted which negatively impacts hardwood regeneration and restoration.

12 Conifer planting, seeding, and soil site preparations will not occur in hardwood or woody draw areas. A minimum of 150 feet of the outer perimeter of these systems will provide a buffer between conifers and hardwoods or woody draw areas.

Response: See comments above in Mesic Deciduous Woodlands.

2.4.10 Roads and Trails (RT) Fw -s[middot][middot]D-RTPlan page 89

06 Newly constructed or reconstructed roads shall not encroach into woody draws, hardwood stands, meadows, at-risk or sensitive plant areas. Roads which currently exist in these plant community types should be assessed for relocation when feasible.

Response: The Draft Plan made significant efforts to protect riparian areas. However, similar protective Components are obviously missing for sensitive, at-risk, or uncommon vegetation communities and therefore, this section needs further development for the Final Plan.

2.4.15 General Recreation (REC)

Plan pages 94++

SDGFP suggests that if not in the Plan, all ROS and other recreational Plan Components should have Standards such as: Do not place trails, recreational facilities, horse and pack animal feeding areas, or group events adjacent to or in rare and sensitive plant communities (hardwoods, riparian areas, at-risk, etc.). We apologize if we missed Plan Components to address our concerns.

SDGFP REFERENCES

Blickley, J.L., D. Blackwood and G.L. Patricelli. 2012. Experimental evidence for the effects of chronic anthropogenic noise on abundance of greater sage-grouse leks. *Conservation Biology* 26:461-471.

Burton, T.A., S.J. Smith and E. R. Cowley, 2008. Monitoring Stream Channels and Riparian Vegetation - Multiple Indicators. Version 5.0 USDI BLM, Idaho State Office, Boise. BLM/ID/GI-08/001+1150.

Burton, T.A., S.J. Smith and E.R. Cowley, 2011. Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation. Tech. Ref. 1737-23. USDI, BLM. BLM/OC/ST-10/003+1737.

<https://www.blm.gov/documents/national-office/blm-library/technical-reference/multiple-indicator-monitoring-mim-stream> (includes 2019 updates).

Cowley, E.R. 2002. Guidelines for establishing allowable levels of streambank alteration. USDI, BLM, Idaho State Office, Boise.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.546.9192&rep=rep1&type=pdf>

Keigley, R. B. and M.R. Frisina. 1998. Browse evaluation by analysis of growth form. Volume 1: Methods for evaluating condition and trend. Montana Fish Wildlife and Parks.

Naugle, D.E., Aldridge, C.L., Walker, B.L. et al. 2004. West Nile virus: pending crisis for greater sage-grouse. *Ecology Letters* 7:704-713.

Oyler-McCance, S.J., S.E. Taylor, T.W. Quinn. 2005. A multilocus population genetic survey of the Greater Sage-Grouse across their range. *Molecular Ecology* 14: 1293-1310.

<http://digitalcommons.unl.edu/usgsstaffpub/43>

Shepperd, Wayne D.; Battaglia, Michael A. 2002. Ecology, silviculture, and management of Black Hills ponderosa pine. Gen. Tech. Rep. RM RS-GTR-97. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 112 p.

South Dakota Department of Game, Fish and Parks. 2014. South Dakota Wildlife Action Plan. Wildlife Division Report 2014-03. South Dakota Department of Game, Fish and Parks, Pierre.

<https://gfp.sd.gov/wildlife-action-plan/>

Stevens, B.S., J.W. Connelly, and K.P. Reese. 2012. Multi-scale assessment of Greater sage-grouse fence collision as a function of site and broad scale factors. *Journal of Wildlife Management* 76:1370-1380.

U.S. Fish and Wildlife Service. 2013. Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report. U.S. Fish and Wildlife Service, Denver, CO. February 2013.

Walker, B.L., D.E. Naugle, and K.E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71:2644-2654.

Uresk, D.W. and T.A. Benzon, K.E. Severson, and L. Benkobi. 1999. Characteristics of white-tailed deer fawn beds, Black Hills, South Dakota. *Great Basin Naturalist*. 59(4): 348-354.

The following citations offer information on the effects of large animal and livestock grazing on woody draw plant communities, particularly green ash draws. The information will aid in forming and defending additional Plan Components for woody draw management.

Uresk, D. W., and C. E. Boldt. 1986. Effect of cultural treatment on regeneration of native woodlands in the Northern Great Plains. *Prairie Naturalist* 18:193-202.

Uresk, D.W., J. Javersak, and D.E. Mergen. 2009. Tree sapling and shrub heights after 25 years of livestock grazing in green ash draws in western North Dakota. *Proceedings of the South Dakota Academy of Science*, Vol. 88. Pp 99-108.

Uresk, D. W., K. E. Severson and J. Javersak. 2015. Model for classification and monitoring green ash ecological type in the Northern Great Plains. *Proc. of the South Dakota Academy of Science*. Vol 94. pp. 213-226.

Green ash basal area and *Prunus* species provide all the information for this multivariate statistical model to classify seral stages and then to be used to monitor vegetation trends for green ash woody draws.

Uresk, D.W. and D.E. Mergen. In Press. Effect of livestock grazing and cultural treatments on regeneration of green ash woodlands on the Northern Great Plains: An update. *Intermountain J. of Sciences*. 23 (Number and pages unknown at this time).

Response: Annual grass such as cheatgrass, are extremely flashy fuels but they are not the only fire or vegetative threat to sage-steppe habitats. The GDLs should be more inclusive.

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