



SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

4130 ADVENTURE TRAIL | RAPID CITY, SD 57702

June 6, 2019

Custer Gallatin National Forest
Attn: Forest Plan Revision Team
P.O. Box 130, (10 E Babcock)
Bozeman, MT 59771

Submitted via email:

Virginia Kelly, USFS R1 Planner at vkelly@fs.fed.us

Direct link at: <https://tinyurl.com/caracgnf>

Re: SDGFP as Cooperating Agency, Review of R1 Draft EIS, Draft Plan, and Accompanying Draft Documents

Part two of two submissions: pages include addendum
pages 23-44

Shelly Deisch

Shelly Deisch
Public Lands Liaison and Wildlife Habitat Biologist
South Dakota Department of Game, Fish and Parks
Division of Wildlife – Region 1 Office
4130 Adventure Trail, Rapid City, SD 57702

shelly.deisch@state.sd.us

Desk: 605.394.1756

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 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 no 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 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-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 They~~ 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 2,20~~04~~ 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)populations (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 ~~2016~~ 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 Runia. 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-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-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-grouse 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-grouse habitats. Evaluation of large animal stressors will aid in supporting the reasons sage-grouse was selected as a SCC. 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 ~~spring~~ 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 2008, West Nile virus impacted the sage-grouse population in southwest North Dakota (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 statements. 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 § 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 development” 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 already 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 ~~has~~ ~~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 would~~ 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-WLSG 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 SCC and to meet the 2012 Rule requirement for ecosystem integrity (§219.8-219.9).

FW-STD-WLSG Plan page 63

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 §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).

01 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.

02 Maintain or increase the patch size of sage-grouse habitats. Within discrete sagebrush stands, maintain natural small openings 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 developments 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—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) *	5km (3.1mi)	8km (5mi)	20km (12.4mi) °
Linear features	400m (0.25mi) ‡	5km (3.1mi)	8km (5mi)	18km (11.2mi) °
Energy development	3.2km (2mi) †	5km (3.1mi)	8km (5mi)	20km (12.4mi) °
Tall structures	1km (0.6mi) °	3.3km (2mi)	8km (5mi)	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) ‡	400 m (0.25 mi)	4.8 km (3mi)	4.8 km (3mi) v

- 04 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).

- 05 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 H at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_027955.pdf). The information was slightly modified by SDGFP to accommodate the CGNF's SCC 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-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.L. 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.

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

Response: SDGFP recommend this additional Plan Component.

FW-GDL-WLSG 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.

- 01 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.

- 02 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.

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.

- 03 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 no net loss of habitat loss, 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.

- 06 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).

- 07 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.

- 08 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.

- 10 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.

- 11 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.

- 12** 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:

<https://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-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-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.

DEIS page 227 - 228

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 ~~is-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-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. “*...to be in ecological balance with this droughty 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 Alternatives, 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 “degradation” and the cause. This makes it difficult for the public and CGNF to offer adaptive management strategies to amend “degradation”.

02 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 guideline. See also DEIS pages 74-75 which indicate non-hydrophilic grasses are within riparian systems.

01 ~~03 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:

Late Seral	Late Intermediate	Seral Early Intermediate	Seral Early Seral
20 to 40%	40 to 60%	5 to 15%	5 to 15%

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, buffalo grass, 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.

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_027969.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.

- 05** 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.

- 08** 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.

- 09** 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:

- 02** 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.

- 03 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.
- 04 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 process.

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-STD-RT Plan 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. RMRS-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 Manage.* 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).