Norbeck Society
P. O. Box 9730
Rapid City, SD 57709

Steve Kozel, District Ranger
Chris Stores, Natural Resources Planner
Northern Hills Ranger District
Black Hills National Forest
2014 North Main Street
Spearfish, SD 57783

March 31, 2025

Re: Buffalo Forest Health Project scoping
Submitted via: https://www.fs.usda.gov/project/blackhills/?project=67248

Dear Ranger Kozel and Planner Stores,

As part of our advocacy for sustainable use of public lands, Norbeck Society comments reflect a desire to support a management approach for the Black Hills National Forest (BHNF) that recognizes the imperative of protecting and enhancing the biocomplexity of forest ecosystems that serve and support growing numbers of people. A vision for long-term sustainability of all aspects of this land is paramount.

The Norbeck Society wishes to ensure that benefits flow perpetually to those who come after us. People in the future will rely on the graces of the Black Hills National Forest just as we do.

Please find our comments on the Buffalo Forest Health Project on the following pages. We request that these be included in the Forest Service Administrative project files. We have identified actions that, as proposed, are in direct violation of Law, Regulation, and Policy. These are related to the National Environmental Policy Act (NEPA), Habitat Structural Stages (HSS), Management Indicator Species (MIS), Culmination of Annual Mean Increment (CMAI), Allowable Sale Quantity (ASQ), and other related matters. This must be resolved as this project proposal is developed and then analyzed.

As always, we appreciate the opportunity to provide input to the USFS about the management of the Black Hills National Forest.

Sincerely,

Mary Zimmerman, President
On behalf of the Norbeck Society

P. O. Box 9730
Rapid City, SD 57709
info@norbecksociety.com

cc: Shawn Cochran, Toni Strauss, Wendy Schuyler

Norbeck Society Scoping Comments
Buffalo Forest Health Project #67248 (the Project)
Northern Hills District (the District), Black Hills National Forest (BHNF)
March 31, 2025

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National Environmental Policy Act (NEPA) – Purpose and Need

From the agency's own NEPA Handbook (1909.15), "The need for action discusses the relationship between the desired condition and the existing condition to answer the question, "Why consider taking any action?" The breadth or narrowness of the need for action has a substantial influence on the scope of the subsequent analysis. A well-defined "need" or "purpose and need" statement narrows the range of alternatives that may need to be considered. For example, a statement like "there is a need for more developed recreation" would lead to a very broad analysis and consideration of many different types of recreation. However, a statement like "there is a need for more developed campsites along Elk Creek" would result in a more focused analysis with consideration of a much narrower range of alternatives. "Purpose" and "need" may be discussed separately, but normally they are discussed as one because the purpose of an action will be to respond to the stated need.

On page 7 of the scoping letter, it states, "The purpose of the Buffalo project is to provide for ecological diversity by increasing the vigor of ponderosa pine, aspen, and meadows across the

project area. Vegetation management actions would be implemented to improve growth, yield, and regeneration of pine stands, to encourage expansion of aspen stands and the establishment of new aspen age classes, and to reduce the encroachment of conifers into aspen and meadow areas. The Buffalo project is necessary because:"

- Forest Plan Objective 201 calls for managing 92,000 acres of aspen across the Forest. Approximately 43,321 acres of aspen are currently identified Forest-wide, including 2,272 acres within the Buffalo project area. Of those 2,272 acres, nearly all stands consist of older age classes of aspen with limited regeneration and are experiencing encroachment by conifers. The scarce amount of aspen regeneration found in the project area is in most cases being heavily browsed by elk and cattle, and the level of regeneration is not sufficient to maintain the aspen stands in the long term.
    - ❖ Please see our statements related to Habitat Structural Stages (HSS) and Aspen Management.

- Forest Plan Guideline 2107 states: Conifer encroachment on areas that have formed over grass, meadow, or hardwood vegetation may be treated (e.g., to conserve habitat for threatened, endangered, and sensitive species, management indicator species, and species of local concern, maintain forage base, and landscape diversity). Consider soils that formed under grass or meadow plant communities and other factors in determining extent of pine-encroachment removal. In addition to the acres of aspen described above, approximately 1,581 acres of meadow habitat exists within the Buffalo project area. As with the aspen stands, these meadow areas are being encroached upon by conifers.
    - ❖ Please see our statements related to Habitat Structural Stages (HSS) and Aspen Management.

- As referenced by Forest Plan Guideline 2107 above, several plant and wildlife species are dependent on the intermix of pine, aspen, and meadow habitats that are present in the Buffalo project area. The aspen and meadow habitats present in Buffalo have, over time, become more dominated by conifers, reducing the availability of aspen and meadow habitats that some species depend on.
    - ❖ Please see our statements related to Habitat Structural Stages (HSS), Species Viability of the American Goshawk, and Aspen Management.

- Forest Plan Objective 5.1-204 calls for a distribution of ponderosa pine across nine structural stages. The Forest-wide objective for structural stage 4A in MA 5.1 is 25%. The Buffalo project area, and the Forest as a whole, currently has an excess of structural stage 4A. Forest-wide, 43.7% of ponderosa pine stands in MA 5.1 are in structural stage 4A. In the Buffalo project area, 38% of ponderosa pine stands are in structural stage 4A.
    - ❖ Please see our statements related to Habitat Structural Stages (HSS) and Aspen Management.

- The entirety of the Buffalo project area is in MA 5.1. Objectives 5.1-201, 5.1-202, and 5.1-203 call for providing timber products while also providing for a variety in stand sizes, shape, crown closure, age structure and interspersion and for maintaining or enhancing hardwood communities.

- ❖ Please see our statements related to Habitat Structural Stages (HSS), Allowable Sale Quantity (ASQ), Sustained Yield and non-declining flow, and Culmination of Mean Annual Increment (CMAI).

National Environmental Policy Act (NEPA) – lack of site-specificity

The Buffalo Forest Health Project area encompasses a total of 16,139 acres, of which the scoping letter states 6,372 acres of commercial harvest that includes Shelterwood Establishment/Removal, Commercial Thin, Commercial Hardwood Enhancement, Hazardous Fuel Reduction/Non-commercial Thin, Shaded Fuel Breaks, and Prescribed Fire that are proposed in stands that will continue to push mature stands to younger stand structures.

Page 8 of the scoping letter states, "Within those 2,700 acres, treatments would be conducted with the objective of establishing 900 acres of young aspen stands with vigorous regeneration. Treatments could include removal of commercial and non-commercial conifers as well as coppicing (cutting) of existing aspen, ripping of the ground and aspen roots within or around aspen stands, and prescribed fire to promote regeneration and the establishment of new-age classes. Treatments would be applied selectively across the landscape and could be applied to aspen stands of varying conditions (i.e., young vs. old or diseased vs. healthy). These treatments would be applied over a period of approximately 10 years and monitored to determine the effectiveness and whether additional treatments are required in the same stand or should be implemented elsewhere within the Project area based on the results of initial treatments."

- We expect to see more specificity in treatment type, quantity, and distribution of aspen treatments. We expect to see more detail on what is proposed for aspen treatment. For example, simply saying "final harvest" in a pine stand does not correctly articulate the type of treatment nor effects until it is further described as a shelterwood or group selection. This type of description does not exist regarding the proposed aspen treatments in this scoping letter. We recognize there are several treatment regimens for aspen, just as there are for final harvest. As a result, we require more specificity in the proposed aspen treatment in terms of type, quantity, and distribution.

The scoping letter lacks site-specificity. Specifically, this project-level NEPA analysis requires the type of activity, associated acres, and how they will modify the habitat structural stages. **The lack of site-specificity on a project-level NEPA analysis violates the National Environmental Policy Act (NEPA), Code of Federal Regulations, and the agency's policies.**

National Environmental Policy Act (NEPA) – Cumulative Effects

The Council on Environmental Quality's (CEQ) NEPA | National Environmental Policy Act - Cumulative Effects regulations (40 CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42U.S.C. 4321 et seq.), define cumulative effects as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR ~ 1508.7).

- Starting on page 1 of the scoping letter, “Two Forest-wide projects, the Mountain Pine Beetle Response Project (MPBR) and the Black Hills Resilient Landscapes Project (BHRL), have been implemented in the past 15 years to address mountain pine beetle risk and forest resiliency across the Black Hills. Portions of the Slapshot (MPBR) and Wizard (BHRL) timber sales took place within the boundary of the Buffalo project area in 2017 and 2019. Salvage harvest following a tornado in 2020 also occurred in the area. Prior to those activities, the area was harvested under timber sales associated with the Riflepit and Geranium projects between in 2006 and 2011.”
    - ✓ It would normally be expected that analysis and disclosure of structural diversity and distribution would be completed through the development of the Purpose and Need contributing to the development of the Proposed Action. Please include structural stage distribution within the Project area and across the District to disclose the cumulative effects of the changes to Habitat Structural Stages (HSS) and how this particular Project will change the Habitat Structural Stages and their distribution.
- Page 6 of the scoping letter states, “Timber harvest and other forest management activities have occurred in most of the project area over time. In the past 30 years, 13 timber sales have been implemented that harvested a total of 7,636 acres (Table 2). Depending on site conditions and the harvest prescription, harvested stands now consist of pine saplings, open-canopy mature pine over pine seedlings, pine saplings with few mature trees, or moderately dense mature pine.”
    - ✓ The disclosure and the table lack the full picture of “other forest management activities.” The table does seem to capture the intensity of commercial timber harvest in the area, but it lacks other necessary vegetation treatments such as small-diameter thinning, prescribed burning, etc. Habitat structural stages are the surrogate to many things (species viability, soil health, water quality, etc.), and a CURRENT map (and table) of pre and post-structural stages is necessary to offer substantive comments. Commercial timber harvest is not the only treatment that can modify a structural stage, so listing all vegetation treatments in the cumulative effects analysis is essential.

The Northern Hills Ranger District must be able to move towards or meet HSS distributions in the Forest Plan across the District. **If the Northern Hills Ranger District cannot disclose that in the analysis, then this Project is in direct violation of NFMA, specifically regarding HSS, species viability, and non-declining even flow.**

Habitat Structural Stages (HSS)

Several groups and individuals administratively appealed the Regional Forester’s decision to adopt the 1997 Revised LRMP. On October 12, 1999, Deputy Chief James R. Furnish, the reviewing officer for the Chief of the Forest Service, issued his 1999 Appeal Decision on three of the appeals. Shortly after the Chief’s Appeal Decision in November 1999, several individuals and groups filed suit against the Forest Service to block the implementation of the Veteran Salvage Timber Sale within the Beaver Park Roadless Area. The lawsuit cited several deficiencies identified in the Chief’s Appeal Decision and claimed the 1997 Revised LRMP direction was inadequate to protect specific resources in the timber sale area. Negotiations were initiated to settle the lawsuit, and in September 2000, a Settlement Agreement was signed and

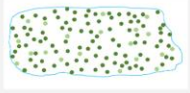
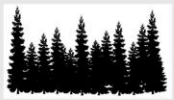
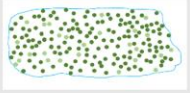
issued by the parties (U.S. District Court for the District of Colorado 2000). In signing the Settlement, the Forest agreed to undertake the Phase I and Phase II Forest Plan Amendments. Further, the Forest agreed to consider several specific items in the Phase II effort, including 1) the analysis of candidate areas for RNAs on the Forest; 2) completion of any designation process as a part of the Phase II Amendment; and 3) further evaluation of the viability of management indicator species (MIS), and the American Goshawk.

Page 3 of the scoping letter makes it clear that the Buffalo Forest Health Project "…is guided by the 1997 Revised Land and Resource Management Plan for the Black Hills National Forest, as amended by the Phase II Amendment (the Forest Plan) (USDA Forest Service 2006a)." In addition, on page 3, it states that the entirety of the Buffalo Project area is in the management area (MA) 5.1 for Resource Production Emphasis.

- ✓ This statement is important, and thank you for saying that early in the scoping letter. It is an important statement as it ties in with the opening paragraph we wrote here. This is a critical statement that speaks to the importance of species viability for the American Goshawk and the related Habitat Structural stages (HSS) supporting the viability of the species. In addition, it is also important for the Multiple-Use-Sustained Yield and non-declining even flow mandates that direct the agency.

Page 4 of the scoping letter acknowledges that "many of the pine stands in the project area have been treated within the last 30 years, and states by nature that the result of that treatment has resulted in large areas of structural stage 4A that are standing with mature, widely spaced overstory trees. And that there are a lack of 4B and 4 C dense stands." Similarly, on Page 4, "Due to the project area's relatively remote location and the limited amount of developed private land within or adjacent to the project area, the amount of wildland-urban interface (WUI) is relatively low. Some treatment of structural stage 4B or 4C stands may benefit the area to provide fuel reduction near private land with structures or other improvements, but the greatest need for pine treatment exists in structural stage 4A stands to address structural stage objectives."

- ✓ There are several concerning items to tease apart in this single paragraph:
  1) The paragraph admits to a lack of 4B and 4C and an overabundance of 4A. Assuming an overabundance of 4A, foresters/silviculturists have an excellent opportunity to utilize the "large areas" of 4A to manage for 4B and 4C and even 5 which are in extremely low quantities across the Forest (and District). The 4A structural stages possess a critical ecological component – large trees. By retaining the large trees, you have the key component to develop 4B, 4C, and 5. Let the area "rest."

USFS Habitat Stage Structure Class	Definition	Ground Level Depiction	Aerial Depiction
4A	Vegetation dominated by mature trees (>9" DBH) with 10-39% canopy cover in area		
4B	Vegetation dominated by mature trees (>9" DBH) with 40-69% canopy cover in area		
4C	Vegetation dominated by mature trees (>9" DBH) with >70% canopy cover in area		

● = dominant tree
● = sub-dominant tree

2) We do question the "large areas of 4A" which is contrary to the findings of a peer-reviewed scientific General Technical Report (GTR) using FIA data and produced by scientists from the agency (A scenario-based assessment to inform sustainable ponderosa pine timber harvest on the Black Hills National Forest | US Forest Service Research and Development) and more recently the release of initial Lidar plot data (Black Hills National Forest - Resource Management) that appears to support the findings within the GTR.

✓ 3) The BHRL EIS was signed in 2018, and implementation of that decision began promptly in 2018. That decision authorized the cutting of largely 4A stands only. BHRL was temporarily shelved due to increasing pressure on implementation occurring outside designated stands disclosed in the BHRL EIS. We are confident that the BHRL decision scooped up every acre that resembled a 4A stand as evidenced by nearly 185,210 acres of mature (4A primarily) stands declared for Overstory removal. This acreage is roughly 20% of the entire forested area of the Black Hills. Remember, a final harvest, such as a shelterwood removal, requires the stands to meet CMAI.

Black Hills Resilient Landscapes Project
Final Record of Decision

Table 1. Summary of Activities[1]

Fuel and Hazard Tree Treatments	Maximum Acres
Mechanical and manual fuel treatments *(shaded fuel break; thin, pile, and burn fuels; scatter, shred, or chip fuels; cut, lop, and scatter fuels); includes up to 4,000 acres of shaded fuel breaks with commercial removal.*	7,000 acres per year (70,000 acres total)
Prescribed fire *(broadcast)*	10,000 acres per year (100,000 acres total)
Hazard tree removal	As needed
Pine Structural Stage Modification	**Maximum Acres**
Overstory removal *By management area (MA):* *MA 4.1: Approximately 7,670 acres* *MA 5.1: Approximately 129,890 acres* *MA 5.4: Approximately 41,210 acres* *MA 5.43: Approximately 250 acres* *MA 5.6: Approximately 6,190 acres*	185,210 acres (total)

✓ 4) Other than mentioning "large areas" of 4A and not much of 4B and 4C, there is no disclosure of the CURRENT structural stage distribution within the Project area and across the District. It is hard to envision the whole picture and need for treatment other than to trust the scoping letter stating, "but the greatest need for pine treatment exists in structural stage 4A stands to address structural stage objectives." In actuality, we can argue that the greatest need for treatment sits in those structural stages where small-diameter thinning would be more beneficial for growth and hazardous fuel reduction reasons.

Page 6, the scoping letter states, "Timber harvest and other forest management activities have occurred in most of the project area over time. In the past 30 years, 13 timber sales have been implemented that harvested 7,636 acres (Table 2). Depending on site conditions and the harvest prescription, harvested stands now consist of pine saplings, open-canopy mature pine over pine seedlings, pine saplings with few mature trees, or moderately dense mature pine." Then, on page 8, the scoping letter states, "Forest Plan Objective 5.1-204 calls for a distribution of ponderosa pine across nine structural stages. The Forest-wide objective for structural stage 4A in MA 5.1 is 25%. The Buffalo project area and the Forest, currently have an excess of structural stage 4A.

Forest-wide, 43.7% of ponderosa pine stands in MA 5.1 are in structural stage 4A. In the Buffalo project area, 38% of ponderosa pine stands are in structural stage 4A."

- ✓ Again, we are concerned about these two statements from the scoping letter.
  1) It is hard to understand that there is a 4A abundance, but even if there is, that would mean there is a deficit of other structural stages, which are likely 4A, 4B, and 5. In the scoping letter, there is an acknowledgment of low acres of 4A and 4B. Without a current disclosure of structural stages across the Project area and across the District, it is safe to assume that this Project continues to move acres into structural stages 1, 2, and some degree 3 and away from mature structural stages, thus continuing to put at risk the species viability of species dependent on mature habitat such as the American Goshawk.
  2) There is an acknowledgment that the BHRL decision provided years of 4A harvest. We continue to request a CURRENT map of structural stages from the District and Forest. To date, we have only received data that is outdated and actually from the time frame of the BHRL analysis (~2018). That information is not updated with the last 7 years of structural stage changes that have occurred as a result of implementing BHRL and other vegetation treatment Project s across the District and forest. Ultimately, the GTR and the Lidar data support the perspective of the Norbeck Society and concern for the significant shift to younger structural stages.

Page 9, the Project scoping letter states, "Commercial Pine Harvest Ponderosa pine would be commercially harvested on approximately 6,372 acres. Individual harvest prescriptions are described below. The primary focus for commercial pine removal would be structural stage 4A stands to address structural stage objectives for MA 5.1 and to promote the regeneration of existing pine stands. Most acres of structural stage 4B and 4C pine would be deferred from harvest, although some acres may be thinned to reduce fire hazard in stands immediately adjacent to occupied private land, major ingress/egress routes, or other improvements. Of the 6,372 acres proposed for commercial harvest, approximately 513 acres are in structural stage 4B or 4C. Some acres proposed for commercial harvest of pine overlap with acres identified for treatment in aspen; where commercial sized pine (generally greater than nine inches diameter at breast height) occur in aspen stands, those stands will be evaluated for commercial harvest."

- ✓ Again, we have concerns with this statement from the scoping letter.
  1) It is hard to understand that there is a 4A abundance, but even if there is, that would mean there is a deficit of other structural stages, which are likely 4B, 4C, and 5. In the scoping letter, there is an acknowledgment of low acres of 4A and 4B. Based on that, the only logical conclusion is that there are a large number of acres in smaller-sized tree structural stages.

  2) Commercial Pine harvest is disclosed as proposing to treat 6,372 acres. The commercial pine silvicultural treatments are shelterwood establishment, shelterwood removal, commercial thin, hardwood enhancement, and then what is embedded in the above statement "treatments in 4B and 4C." For clarity, are we to understand that these 4B and 4C stands fall in one of the four silvicultural treatments mentioned?

  3) We continue to be concerned with the continued application of final harvest treatments, specifically the excessive use of clear-cuts or what is articulated in the

scoping letter as “Shelterwood establishment” and/or “Shelterwood Removal.” Per agency policy, final harvest treatments must meet CMAI. Fundamentally, scientists, silviculturists, foresters, and fuels specialists fully understand that the black hills ponderosa pine forests are a mixed-severity fire regime, yet the forest continues to apply even-aged forest management. Unfortunately, the forest is continuing to utilize the shelterwood regeneration method on a scale that is many times larger in patch size than the more historic patch sizes that are within the historic range of variability.

4) Clearly, the structural stage objectives are driving treatment. Specifically, in the scoping letter, it states, “The primary focus for commercial pine removal would be structural stage 4A stands to address structural stage objectives for MA 5.1.” The Forest Plan contains clear direction and guidance that pertains to multiple uses and non-declining even flow. This forest is not solely a tree farm with a primary objective of growth and yield at the cost or detriment of other resources, such as the species viability of the American Goshawk. What stands across the Forest -including those in the Project area- need is rest from the abundance of disturbances such as logging, insect epidemic, and scale disturbance such as tornadoes and fire. The forests and related ecosystems just need a rest. In resting, there is also a positive and adaptive response that mimics the mixed-severity fire regime and associated stand conditions that make the Black Hills so diverse. Let it rest.

5) The BHRL decision provided years of 4A harvest. We continue to request a *current* map of structural stages from the District and Forest, but instead continue to receive data that is outdated and from the time frame of the BHRL analysis. That information does not support the scientific conclusions from the GTR nor the initial observations from the LiDAR data, both pointing to large percentages of the forest in younger structural stages.

Page 9 of the scoping letter lists Shelterwood Establishment as a treatment option and says, “This is an even-aged regeneration method in which a new age class develops from seeds that germinate in fully exposed micro-environments after removal of all the previous stand except a small number of trees left to provide seed. Shelterwood establishment treatments would occur on 2,410 acres in the Buffalo project area.”

- ✓ The “Shelterwood Establishment Cut is cut to establish a moderated micro-environment, prepare the seed bed, and create a new age class (cited from 2470 - Silvicultural Practices | US Forest Service).” One thing that makes the forest unique among other forests in the West is the prolific regeneration of Ponderosa Pine, which occurs with very little scarification or canopy openings. What is not clear here is what the basal area will be as the target objective for these Shelterwood Establishment cuts. Depending on the state’s basal area retention, this can easily mimic the Shelterwood Removal with only a few reserve trees, creating a concern that this Project area is producing 3,751 acres of Shelterwood treatment or clear-cuts.

Page 9 of the scoping letter lists Shelterwood Removal as a treatment option and says, "Shelterwood removal is proposed on 1,341 acres and is a final removal cut that releases established regeneration from competition with the overstory after it is no longer needed for shelter under the shelterwood regeneration method. This treatment involves cutting trees constituting an upper canopy layer to release understory trees. The primary source of regeneration is advanced reproduction."

- ✓ The forest has stated that structural stage percentages are a driver for the Project and that the forest is deficient in SS4 and SS5. SS4A stands are typical targets for Shelterwood Removal. There is a confirmation bias or, worse, outside corporate influence pushing foresters to propose treatments that are out of alignment with forest plan objectives and are putting species like the American Goshawk at risk of loss of viability. Moving forward in analysis, there needs to be a clear display of CURRENT HSS across the Project area and then across the District in the cumulative effects portion. For these Shelterwood treatments, it is critical to disclose CMAI for the stands this treatment applies. Conducting final harvests in stands that have not yet met CMAI violates the agency's policy and NFMA.

Pages 9 and 10 of the scoping letter list Commercial Thin as a treatment option and says, "The objective of a commercial thin is to reduce stand density. This treatment would be applied to 504 acres in Buffalo. Benefits that will be realized include improved growth and yield outcomes for retention trees, realization of wood fiber as a commercial product, reduced fire hazard through fuel reduction, and reduced risk of insect and disease outbreaks. Residual basal area in commercially treated stands would generally be 40 to 60 square feet per acre (or an average of about 30 feet between trees 12 inches in diameter). Post-treatment conditions would generally consist of well-formed pine, moderately spaced with a relatively even distribution over the stand. Tree removal would include sawtimber and products other than logs (POL) starting at five inches diameter at breast height (DBH). Depending on understory conditions, any stand proposed for commercial thinning could also be non-commercially thinned; the need for non-commercial thinning of any given stand would be determined during project implementation."

- ✓ Generally, we do not object to the thinning of stands that aid in the health of current stands. We object to the lack of site-specificity to the non-commercial activities that may or may not occur. Please provide clarity as to what stands this could occur in, providing clarity to quantity and distribution.

Page 10 of the scoping letter lists Commercial Hardwood Enhancement as a treatment option and says, "In hardwoods stands that contain commercially viable conifer trees (generally 9 inches or greater DBH, but potentially as small as 5 inches DBH for POL), the commercial conifers would be removed. This treatment could also apply to mixed pine/aspen stands with the goal of conversion to an aspen cover type. Non-commercial removal of pine would also occur where necessary to prevent conifer encroachment into hardwoods. Commercial hardwood enhancements would potentially occur on 2,117 acres."

- ✓ Generally, we are not concerned about removing encroaching conifers; however, we expect to see site specificity, specifically the commercial and non-commercial quantity and breakdown.

- ✓ We seek more clarity on the desire to convert the aspen cover type. Generally, we are not concerned with the proposed actions in the hardwood aspen stands, but for clarity, we want to know how you will account for the site conversion of hardwoods and aspen. How will you display the available acres for the purposes of re-calculating ASQ? If these acres were once typed as pine, then they were originally part of the calculation for ASQ. The ASQ must then be adjusted to account for these site conversions. While conducting the exercise of re-calculating the ASQ, we advise BHNF factor in the many other things that have happened across the BHNF that would similarly indicate this overdue recalculation.

Page 10 of the scoping letter lists Hazardous Fuel Reduction/Non-commercial Thin as treatment options and says, "These are similar treatment types, with the primary difference being the objective of the treatment. In stands identified as non-commercial, trees would be thinned based on desired silvicultural outcomes to reduce competition and to improve the growth and yield of retention stems. Stands identified for hazardous fuel reduction are generally areas near private property, major egress routes, or other strategic locations where the primary goal of thinning is to reduce fire hazards. These treatments would be applied to a total of 2,570 acres."

Page 10 of the scoping letter states, "For both objectives, treatment involves cutting young conifer trees (primarily under 9 inches diameter at breast height) to reduce stocking densities. Treatments are generally non-commercial but could also include the harvest of commercial products (such as POL). Those opportunities will be identified during project implementation based on stand conditions. Overall, trees will be thinned to a regular spacing, generally from 12- to 20-feet, retaining healthy, vigorous well-formed pine where possible. This treatment may be implemented using manual or mechanized treatment methods. Manual methods are generally reserved for more severe terrain or areas with overlapping resource concerns. These methods will leave activity-created slash scattered throughout the treatment unit. When terrain and resource concerns allow, mechanical means will be preferred. Trees will be masticated in place under this method, reducing slash piece size and depth compared to manual methods, and speeding decomposition of activity-created slash."

- ✓ The discussion of a myriad of activities lacks site specificity. Please clarify the different silvicultural prescriptions for Hazardous Fuel Reduction and Non-commercial Thin.
- ✓ It seems highly unlikely that the District will be able to acquire the necessary funding to accomplish 2,570 acres of Hazardous Fuel Reduction and Non-commercial Thin. We suggest that these 2,570 acres be boiled down to acres that are more achievable and that meet stated objectives, changing HSS to meet Forest Plan values, or reducing hazardous fuels in high-hazard areas. We note the scoping letter admits the Project area does not have much WUI. We expect to see site specificity for the activities listed in the scoping letter. Please decide on precise areas where mastication, ground-based equipment thinning, and mechanical site prep (ripping) would occur so that potential effects can be analyzed and disclosed.

Page 10 of the scoping letter lists Shaded Fuel Breaks as treatment options and says, "Shaded fuel breaks are proposed surrounding all private land within the Buffalo project area. These fuel breaks would extend up to 300 feet from private property. Non-commercial and commercial thinning would occur to achieve a residual density of 40 BA, with the potential for feathered treatments resulting in varying densities, with fewer trees left closest to private property and more residual trees further away. Priority areas for shaded fuel break construction would be private property that includes occupied structures."

- ✓ A shaded fuel break alone will not stop a wildfire. Instead, shaded fuel breaks increase the probability of a successful wildfire containment by reducing fire intensity and severity, keeping the wildfire low to the ground, and decreasing the rate of speed. To be truly successful and effective when the time comes, they require maintenance, including prescribed fire, to keep their effectiveness.

The structural stages are the metric by which we can indicate viability for the American Goshawk (NFMA) and manage for sustainability and non-declining even flow (MUSY) of timber production. In your analysis, please provide the current structural stages and then disclose how the proposed treatments will alter those structural stages. In addition, provide the status and trend of the American Goshawk, specifically through the disclosure of the nest and foraging habitat. Finally, we would expect an alternative, other than the no-action, that speaks to the need and opportunities but does not involve commercial timber harvest or at least does not include final harvest treatments.

Timber Resources 3 Table 1. Timber Volume Sold for Fiscal Years 2003-2012 MMBF

Fiscal Year	Timber Volume Sold	Percent of ASQ Sold	Annual ASQ
2003	37 MMBF	14% of ASQ	267 MMBF
2004	87 MMBF	33% of ASQ	267 MMBF
2005	65 MMBF	24% of ASQ	267 MMBF
2006	85 MMBF	32% of ASQ	267 MMBF
2007	30 MMBF	11% of ASQ	267 MMBF
2008	5 MMBF	2% of ASQ	267 MMBF
2009	10 MMBF	6% of ASQ	267 MMBF
2010	49 MMBF	18% of ASQ	267 MMBF
2011	37.5 MMBF	14% of ASQ	267 MMBF
2012	52.5 MMBF	19.6% of ASQ	267 MMBF
Ten Year Average	**45.8 MMBF**	**17% of ASQ**	**267 MMBF**

The Buffalo Forest Health Project is currently proposing harvest treatments that will involve the alteration of Habitat Structural Stages (HSS) that continue the conversion of mature structural stages to younger structural stages that undermine the species viability of the management indicator species and R2 sensitive species – American Goshawk. This intentional harvest of mature structural stages with prescriptions that alter these mature stands to SS1, SS2, and even SS3 exceed Forest Plan Goals & Objectives habitat structural stage distributions. **If the Buffalo Forest Health Project continues forward with the vegetation treatments as described, the Project would be in clear violation of the National Forest Management Act of 1976 and MUSY of 1960**

Species Viability of the American Goshawk, a Management Indicator Species (MIS)

The American Goshawk is a Management Indicator Species (MIS) and a US Forest Service Region 2 sensitive species for the Black Hills National Forest. The Northern Hills Ranger District has historically contained high-quality nesting habitat for the American Goshawk. A recent study validates what Black Hills National Forest nest-site monitoring data and related studies have previously concluded regarding forest changes within the past 30-40 years. Habitats, and specifically nesting habitat, for American Goshawk have been, and are, declining in availability. This study confirms that the most significant Goshawk habitat losses have occurred in the past 15 years. The "South Dakota Wildlife Action Plan Explorer" Wildlife of South Dakota Final Technical Report Link: T-84_bruggeman_kennedy_final_technical_report_northern_goshawk.pdf state, "Through a combination of timber harvest practices and unpredictable natural disturbances, our results suggest the BHNF has lost much of its high-quality Goshawk nesting habitat over the past 30 years.

Furthermore, the remaining high-quality habitat has become increasingly fragmented. Given the loss of high-quality habitat and limited data documenting Goshawk use of lower-quality habitat, the BHNF is moving away from management objectives established to ensure Goshawk population viability." See: Declining American Goshawk (Accipiter atricapillus) Nest Site Habitat Suitability in a Timber Production Landscape: Effects of Abiotic, Biotic, and Forest Management Factors | Journal of Raptor Research.

Given Forest Service Habitat Structural Stage data for the Planning Area and Forest Plan direction, the Forest Service is obligated to provide habitat for the American Goshawk *and its prey*. This is supported by meeting or moving towards Habitat Structural Stage Objectives and has been an emphasized part of the Black Hills National Forest Plan, including Objectives 4.1-203, 5.1-204, 5.4- 206, 5.43-204, and 5.6-204.

On page 5 of the scoping letter, it states, "One historic American Goshawk (formerly known as the northern goshawk) territory is located within the project area but has not been active for several years." Later in the paragraph, it also says, "While habitat needs of individual raptor species can vary, in general, they prefer mature, more dense timber stands that provide shelter from the elements for their nests while also providing open areas in the understory that allow for hunting of prey such as small mammals."

- Disclose the last 20 years of trend data for occupancy and success rates of surveyed and monitored Goshawk nest stands; explain how the District will ensure a viable Goshawk population.
- Disclose the preferred Goshawk nest habitat that consists of Structural Stages 4B, 4C, and 5 in map and table form, which is the primary method of measuring the required habitat for the Goshawk. Please display by Project area and Ranger District level. In analysis, be transparent in how vegetation treatments will move stands away from, or toward, mature HSS and how that is distributed within the Project area as well as across the entire District.
- We are concerned about the viability of these species and the provision of necessary habitat in the Black Hills National Forest. The scoping letter does not mention monitoring. Required Forest-wide monitoring has not been conducted for more than a

decade. Those reports up to the last one in FY2014 indicated that structural stage objectives were below target for Goshawk. What does the current forest monitoring report state about the habitat for the American Goshawk and its prey? How do the District and the BHNF plan to meet obligations to maintain species viability of the American Goshawk?

The Black Hills National Forest is legally obligated to ensure that ample habitat will be conserved to minimize the potential for federal listing of this species. The forest must cease any more commercial timber harvest that involves reducing mature stand characteristics (mature trees or trees approaching maturity) to retain these critical ecological pieces that can provide goshawk habitat in your/my lifetime, maintaining the viability of this management indicator species (MIS). The Buffalo Forest Health Project includes 6,372 acres of commercial harvest that includes shelterwood establishment, shelterwood removal, commercial thin, and hardwood enhancement treatments that are proposed in stands that will continue to push mature stands to younger stand structures, creating stands that no longer can serve as critical nesting and foraging habitat for the American Goshawk. **If the commercial treatments continue as proposed and move mature HSS toward younger HSS, then this Project will violate NFMA, Regulations, and agency Policy**.

ASQ, Sustained Yield, and non-declining even flow

Lands managed by the Forest Service are managed under a multiple–use–sustained yield model under the Multiple Use–Sustained Yield Act of 1960 (MUSYA). This statute directs the Forest Service to balance multiple uses of their lands and ensure a sustained yield of those uses in perpetuity. Through the National Forest Management Act (NFMA), Congress has directed the Forest Service to engage in long-term land use and resource management planning. In the case of timber, they describe where timber harvesting may occur and include measures of sustainable timber harvest levels.

The National Forest Management Act limits timber removals to be equal to or less than a quantity that can be removed on such a forest annually in perpetuity on a sustained yield basis, given certain provisions. In the past, this sustained-yield provision was seen as an all-purpose safeguard of sustainability. The restriction on timber harvest to the level that could be sustained in perpetuity would ensure that the forest was not plundered. An even flow of timber was seen as ensuring economic and social sustainability.

If this analysis moves forward, please disclose the annual timber volume offered since October 31, 2005, in a chart similar to what is displayed here as examples from the Tongass National Forest in their annual monitoring report. In light of the lack of annual monitoring reports by the Black Hills National Forest, please disclose this information in this analysis. In addition, include an alternative that excludes commercial timber harvest.

The Buffalo Health Project proposes 6,372 acres of commercial harvest, including clear-cuts, seed tree, and shelterwood treatments in stands well under the CMAI[1] age as stated in the Black Hills Forest Plan or modeled through the agency's own Forest Vegetation Simulator. There is no

[1] The NFMA requires that stands must "generally" have reached the CMAI before they are harvested. The Forest Service interprets "generally" to mean within roughly 95 percent of the CMAI.

disclosure on how many commercially treated 6,372 acres will contribute to the volume sold, and thus, ASQ - The Project's proposed commercial harvest treatments are **in violation of NFMA and MUSYA.**

Culmination of Mean Annual Increment (CMAI)

Forest scientists have found the culmination of mean annual increment CMAI to be the best determinant of the beginning of a "mature" forest. CMAI is not a single age in years but a comparable age in stand or tree development: it's the age of biological maturity. CMAI is well understood by foresters and can easily be determined for specific forest types on various growing sites using the Forest Service's own modeling software (Forest Vegetation Simulator).

Numerous laws, regulations, and policies guide how trees are harvested on national forest system lands, in this case, the Black Hills National Forest. The National Forest Management Act (NFMA) directs that stands shall generally have reached the culmination of mean annual increment[2] (CMAI) before a regeneration harvest. This would apply to overstory removal, clear-cutting, shelterwood, and seed tree harvests (even-aged management). NFMA also restricts harvesting to productive timberland where there is assurance that such lands can be adequately restocked within five years after harvest.

CMAI has been used as a defining metric in the National Forest Management Act of 1976[3] to define the age at which trees could be logged or clear-cut. Specifically, Congress directed the Forest Service to establish standards to ensure that, before harvest, stands of trees throughout the National Forest System shall generally have reached the culmination of mean annual increment of growth (calculated based on cubic measurement or other methods of calculation at the discretion of the Secretary).

If this Project moves into analysis, disclose the CMAI for all stands proposed for commercial treatment, including the site index. In addition, include an alternative that excludes commercial final harvest treatments.

The Buffalo Health Project includes 6,372 acres of commercial harvests that include shelterwood treatments proposed in stands well under the CMAI age stated in the Black Hills Forest Plan. **If the Project continues with commercial treatments involving stands younger than the stand's CMAI, then the Project would be in direct violation of NFMA, Regulations, and the agency's policy**.

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[2] CMAI is Mean annual increment (MAI) is the average yearly volume growth per acre of a stand. This is computed by dividing the total volume by its age. As the stand increases in age, the MAI also increases until tree-to-tree competition and physiological maturity reduce the rate of increase. The point when a stand reaches its maximum MAI is called the Culmination of mean annual increment (CMAI).

[3] The National Forest Management Act (NFMA) exception language; the Rule provisions are at 36 CFR 219.11(d)(7), which reads as follows: (7) The regeneration harvest of even-aged stands of trees is limited to stands that generally have reached the culmination of mean annual increment of growth. This requirement would apply only to the regeneration harvest of even-aged stands on lands identified as suitable for timber production and where timber production is the primary purpose for the harvest. Plan components may allow for exceptions, set out in 16 U.S.C. 1604(m), only if such harvest is consistent with the other plan components of the land management plan.

Aspen Management

Healthy quaking aspen communities are characterized by high productivity and structural diversity. High-functioning non-riparian aspen forests support a more diverse array of plant and animal species than any other upland forest type in the western United States. However, conifer presence with aspen does not by itself indicate unhealthy conditions or an inherent need for restoration. Aspen and conifers have comingled and will continue to coexist. (Guidelines for aspen restoration in Utah with applicability to the Intermountain West).

- On page 3 of the scoping letter, it states, "Approximately 2,272 acres of aspen exist in the Buffalo project area. Many of these aspen stands have become decadent over time, meaning that they are no longer regenerating and creating new age-classes and that the existing stand is nearing the end of its lifespan. This can be attributed to multiple factors, including lack of disturbance (i.e., fire or another natural disturbance), intrusion of conifers into aspen stands, and browsing of aspen regeneration by cattle and elk."
    - ❖ It should be clear (Kashian et al., 2007; Zier and Baker, 2006) that all aspen forests are not the same and, thus, should not be managed as one type. We assume that the entire 2,272 acres will not be treated, but if that is indeed the proposal, there should be more specificity to what is proposed and why and where. Much as saying a Ponderosa Pine is dense is simply not enough treatment specificity – it is just too generic. The same is said about aspen – it is too generic. State the existing condition that drives the need in the particular aspen clone area that will meet the stated objective. We are unable to track that lineage with the aspen stands as they appear to have been lumped generically.

    - ❖ The lack of connecting the proposed aspen-related treatments to the Project's purpose and need makes it difficult to understand what is proposed and why. To aid in disclosing when and what is the right treatment for aspen in the Project area, please utilize the "Six Steps of the Aspen Restoration Decision Chain" found in the highly respected document - Guidelines for aspen restoration in Utah with applicability to the Intermountain West.

    - ❖ Treatments to induce suckering need to be implemented with caution and should be used in conjunction with grazing pressure control in stands subject to heavy grazing (Campbell&Bartos2001; Kilpatrick&Abendroth2001; Shirley&Erickson2001). Regenerating aspen stands are vulnerable to herbivory until suckering cohorts grow past the browse line of the herbivores present. There is some recognition on page 8 of the scoping letter, but there is no disclosure of connected actions to assure aspen treatment objectives will be met. As written, the treatment is likely to do more harm to the aspen clones if they entice cattle and elk.

- On page 8 of the scoping letter, under the heading of "Aspen Treatments" it states, "Approximately 1,969 acres are currently identified in the FSVeg database as having an aspen cover type within the Buffalo project area. Based on field reconnaissance conducted in 2024, an additional 303 acres of aspen were identified that are mis-typed in the database. Those acres would be converted to an aspen cover type in the database and treated as aspen moving forward, resulting in 2,272 acres that would be considered for

treatment." It continues by saying, "In addition, many stands in Buffalo with a ponderosa pine cover type are actually mixed stands with a significant component of aspen. Under the Buffalo project, up to 500 acres of mixed stands would be identified for conversion to aspen, which would result in approximately 2,700 acres of aspen cover type across the landscape."

- ❖ It states a need to diversify species composition by enhancing stands that have a pine/aspen component by transitioning from pine to aspen. The suggested treatment type is to "Remove encroaching pine from aspen stands and meadows." Pine with commercial value would be cut where they are encroaching into aspen stands and meadows. Smaller pine may be cut later to prevent it from competing with desirable species again. Moving forward in analysis and in the silviculturist's evaluation, please disclose the evaluation of the aspen functional types and a demonstration of silvicultural evaluation of the premises found in the professionally respected and notable work associated with this peer-reviewed paper (Guidelines for aspen restoration in Utah with applicability to the Intermountain West).

- ❖ Site conversation of aspen has a ripple effect, and one of those is the re-calculation of ASQ that must occur. Currently, these acres proposed for conversion are part of the current ASQ calculation. Reducing acres in the ASQ calculation reduces ASQ.

- On page 8 of the scoping letter, under the heading of "Proposed Activities," it states, "Within those 2,700 acres, treatments would be conducted with the objective of establishing 900 acres of young aspen stands with vigorous regeneration. Treatments could include removal of commercial and non-commercial conifers as well as coppicing (cutting) of existing aspen, ripping of the ground and aspen roots within or around aspen stands, and prescribed fire to promote regeneration and the establishment of new age classes. Treatments would be applied selectively across the landscape and could be applied to aspen stands of varying conditions (i.e., young vs. old or diseased vs. healthy). These treatments would be applied over a period of approximately 10 years and monitored to determine effectiveness and whether additional treatments are required in the same stand or should be implement elsewhere within the project area based on the results of initial treatments. The intent of aspen treatments is to create a high volume of regeneration, which would reduce the impact of elk and cattle browsing and allow for the establishment of new age classes and, potentially, the expansion of aspen stands."
  - ❖ There is a lack of site-specificity. Using words such as "applied selectively across the landscape" and "Over a period of 10 years" are not site-specific. The type of aspen treatments by location must be disclosed.

  - ❖ Per agency policy, a certified silviculturist must be reviewing and signing approval of these vegetation treatments. Treatments of these aspen areas require careful review so as not to continue to diminish the health and distribution of these aspen areas. What evaluation is/has occurred to determine the appropriate treatment for aspen in the Project area? Please utilize the "Six Steps of the Aspen Restoration Decision Chain" found in the highly respected document - Guidelines for aspen restoration in Utah with applicability to the Intermountain West.

If moving forward in analysis, please disclose the evaluation of the aspen functional types and a demonstration of some silvicultural evaluation of the premises found in the professionally respected and notable work associated with this peer-reviewed paper (Guidelines for aspen restoration in Utah with applicability to the Intermountain West). In addition, please also speak to the following:

- Specify the locations targeted for treatment and provide information about the interface of these areas with the cumulative management impacts such as grazing, commercial timber harvest, etc.
- Disclose the vegetation types and HSS in the analysis, both current and proposed treatments and how they will change them.

Meadow Treatments

Black Hills montane grasslands are endemic to the Black Hills of western South Dakota and northeastern Wyoming. The type is ranked G1 by NatureServe (Marriott 2012) -- endangered due to restricted global range, significant habitat loss in the past, continued habitat loss, and low level of protection afforded remaining stands. Black Hills montane grasslands occur at higher elevations, generally above 6000 feet, on the Limestone Plateau of the western Black Hills. Grasses dominate, but forb species are common and diverse.

Page 4 of the scoping letter says, "Like aspen, meadow areas are prevalent, covering approximately 1,500 acres across the Buffalo project area. These areas provide important wildlife and botanical habitat as well as natural barriers to wildfire. Many of the meadows (approximately 782 acres) in the project area have been identified as montane grasslands, a vegetative community that is endemic to the Black Hills. This community is listed as critically imperiled by NatureServe and the states of South Dakota and Wyoming. Threats to montane grasslands include invasive species and conifer encroachment. Other meadows are also being infringed by conifer regeneration. Removal of encroaching conifers and use of prescribed fire would benefit these meadow areas in the long-term."

- ❖ The map on page 12 identifies "Meadow Treatment," but it is impossible to differentiate the montane meadows from meadow areas. Can you please clarify if any of the montane meadows are proposed to be treated, and if so, identify the specific treatments and their related location?
- ❖ NatureServe lists threats to montane grasslands, not as "invasive species and conifer encroachment" as stated in the Project scoping letter, but rather as "exotic species and heavy grazing." NatureServe does not mention conifer encroachment once in its online Element Description. Is there any data that specifically looks at loss of Black Hills montane grassland over time to conifer encroachment? We found none. Montane grasslands and meadows should not be lumped together under one treatment regimen. Please separate the two.
- ❖ Further, in the scoping letter descriptions, why isn't heavy grazing listed as a threat to montane grasslands when NatureServe clearly calls it out? Exotics/invasive species are recognized as a threat both by the Project scoping and by NatureServe. Why doesn't heavy grazing receive the same acknowledgement? If the Buffalo Health Project is about the health of these montane grassland areas, the effects of grazing

must be analyzed and disclosed, and taken into consideration when deciding on management actions.

Page 7 of the scoping letter says, "Forest Plan Guideline 2107 states: Conifer encroachment on areas that have formed over grass, meadow, or hardwood vegetation may be treated (e.g., to conserve habitat for threatened, endangered, and sensitive species, management indicator species, and species of local concern, maintain forage base, and landscape diversity). Consider soils that formed under grass or meadow plant communities and other factors in determining extent of pine-encroachment removal. In addition to the acres of aspen described above, approximately 1,581 acres of meadow habitat exists within the Buffalo project area. As with the aspen stands, these meadow areas are being encroached upon by conifers."

- ❖ The map on page 12 identifies "Meadow Treatment," but it is impossible to differentiate the montane meadows from meadow areas. Can you please clarify if any of the montane meadows are proposed to be treated, and if so, identify the specific treatments and their related location?

Page 10 of the scoping letter under the heading of "Commercial Hardwood Enhancement" says, "In hardwoods stands that contain commercially viable conifer trees (generally 9 inches or greater DBH, but potentially as small as 5 inches DBH for POL), the commercial conifers would be removed. This treatment could also apply to mixed pine/aspen stands with the goal of conversion to an aspen cover type. Non-commercial removal of pine would also occur where necessary to prevent conifer encroachment into hardwoods. Commercial hardwood enhancements would potentially occur on 2,117 acres."

- ❖ It is not clear how 2,117 acres were determined. On page 7, it is said that there are 1,581 acres of meadow in the Project area, and then on page 4, it states that there are 1,500 acres as well as 782 acres of montane meadow. It is not clear if montane meadows are included or not in treatment. Any treatments must be at least denoted on the map on page 11. As we stated with aspen, there is no single treatment to apply to meadows and montane meadows. Please identify the specific treatments and their related location.
- ❖ There is no clear "need" or justification for entry into montane meadows at this time. The imperiled state of these montane meadows requires much more thought and collaboration with scientists to propose the site-specific treatments necessary. We do not support this activity at this time.

Because of their sensitivity to environmental conditions and specialized flora and fauna, mesic montane meadows may be important habitats to monitor concerning degradation or loss of species in response to environmental and climatic stressors. Historical and current human activities (most notably livestock grazing, but also water management, recreational activities, logging practices, agriculture, and fire suppression) have compromised the viability of meadow habitat. The treatment of montane meadows requires a scalpel and not a chainsaw approach. The proposals around meadows must be pulled back and thoughtfully evaluated before moving forward. Montane meadows should not be used as a simple opportunity to harvest commercial material; they are critical ecosystems that need to be taken care of.

Fire Regime and Condition Class (FRCC)

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human intervention, including the possible influence of aboriginal fire use. An understanding of fire regimes, ecological departure from historical reference conditions, and landscape patterns are an essential part of modern land management. Fundamental to the concepts of biodiversity and landscape ecology is the increasing recognition that functioning disturbance regimes are key components of ecosystems. Consequently, data documenting the status of disturbance regimes and associated vegetation are important components of modern land management planning and subsequent management treatments (Hann and others, 2003; Zimmerman, 2003).

On page 4 of the scoping letter, it states, "The Buffalo project area has not had any large stand-replacing fires in recent history. No documented large fires have occurred in the project area, although the Moskee fire (1936) and Iron Creek fire (1899) occurred nearby. The project area's location, weather patterns, and vegetation composition make it less prone to large wildfires. Two small (less than two acres) fires were ignited by lightning within the project area during the 2024 fire season."

- We would like to see disclosure of the fire regime for this Project area. This is a basic initial tenet to developing a purpose and need for vegetation treatment projects and disclosure that helps to drive the management treatments for most of the proposed action. A departure of condition class (CC3) would seem a potential good "Purpose" for the "need" for action. Please consider that refinement.
- It is unclear what the point of the disclosures of "Buffalo project has not had large stand-replacing fires" and "The project area's location, weather patterns, and vegetation composition make it less prone to large wildfires." On page 4, there is some discussion of treating 4B and 4c for wildfire risks, yet the above statements contradict that need, which is further complicated by Forest Plan structural stages objectives that are not currently being met for 4B and 4C. Until there's a better "need" for these treatments, they should be dropped from further consideration.

On pages 4 and 5, it states, "Prescribed burning has occurred in the Buffalo project area. During the fall of 2014, the Rifle Pit burn was conducted on 381 acres. No other prescribed burns have been completed in the project area 4 recently. The relative lack of naturally occurring fire and prescribed fire has led to a buildup of fuels in stands that have not been recently treated mechanically during past timber sales in the project area. Approximately 969 acres of private land are located within the Buffalo project area boundary, …" and then on page 10, under the heading "Hazardous Fuel Reduction/Non-commercial Thin," it states, "These are similar treatment types, with the primary difference being the objective of the treatment. In stands identified as non-commercial, trees would be thinned based on desired silvicultural outcomes to reduce competition and to improve the growth and yield of retention stems. Stands identified for hazardous fuel reduction are generally areas near private property, major egress routes, or other strategic locations where the primary goal of thinning is to reduce fire hazard. These treatments would be applied to a total of 2,570 acres."

- The treatments proposed under this heading of Hazardous Fuel Reduction/Non-commercial Thin lack the site specificity necessary to offer substantive input. As stated here, there are over 2,500 acres proposed for treatments, yet there is no clarity on distribution between the non-commercial and hazardous fuel reduction.

- We are also confused about how these (hazardous fuel reduction and non-commercial thin) can be similar treatments but different objectives. In the interest of full transparency and disclosure, we ask that you split these apart, so each treatment and their objectives are clear. For example, under the non-commercial treatment, we ask for disclosure of HSS changes pre- and post-treatment. Will the treatments put the stands on an even-aged or uneven-aged stand trajectory? Please disclose your intent. For hazardous fuel reduction treatments, what exactly is meant? What will the basal area retention be? What will be the size class distribution? As described here, there should be NO commercial sized trees cut - otherwise these acres would fall in one of the other treatment categories.
- Finally, we find it extremely difficult to believe that 2,500 acres of small-diameter treatments will occur, given the history of similar funding work. Please disclose in the cumulative effects, the past and present acres of small diameter thinning that has occurred across the District. The reality of the funding scenario with the federal government suggests that it is highly unlikely this work will be funded or at least funded to 2,500 acres. The unresolved challenges of biomass utilization over the decades make the type and quantity of funding unachievable before the NEPA goes "stale."

Page 10 states, "For both objectives, treatment involves cutting young conifer trees (primarily under 9 inches diameter at breast height) to reduce stocking densities. Treatments are generally non-commercial but could also include the harvest of commercial products (such as POL). Those opportunities will be identified during project implementation based on stand conditions."

- To have enough POL to offer as a sale requires an understanding of stand conditions to know and then identify those acres. As written, this lacks the site specificity necessary to offer substantive comments as the "what" and "where" are unknown. If there is indeed POL-sized material, specify "what" prescriptions will be applied and "where."

Page 10 states, "Overall, trees will be thinned to a regular spacing, generally from 12- to 20-feet, retaining healthy, vigorous well-formed pine where possible. This treatment may be implemented using manual or mechanized treatment methods. Manual methods are generally reserved for more severe terrain or areas with overlapping resource concerns. These methods will leave activity-created slash scattered throughout the treatment unit. When terrain and resource concerns allow, mechanical means will be preferred. Trees will be masticated in place under this method, reducing slash piece size and depth compared to manual methods, and speeding decomposition of activity-created slash."

- As described here, the proposed activities lack the necessary site specificity to allow us to offer substantive comments. The Forest and the District have enough knowledge and expertise to know the areas that are suitable for ground-based equipment and the areas that are better for hand treatment. These areas have been treated numerous times in the past and should be easy to verify, including verification by doing walk-throughs or "windshield" inspections.
- As we have seen, mastication in varying degrees across the forest, with our most grave concerns coming from mastication that has occurred on the Mystic Ranger District. Please disclose the "where" and degree or prescription for the mastication.

As described currently, the proposal lacks the site specificity needed to provide substantive comments.

Page 10 states, "Shaded fuel breaks are proposed surrounding all private land within the Buffalo project area. These fuel breaks would extend up to 300 feet from private property. Non-commercial and commercial thinning would occur to achieve a residual density of 40 BA, with the potential for feathered treatments resulting in varying densities, with fewer trees left closest to private property and more residual trees further away. Priority areas for shaded fuel break construction would be private property that includes occupied structures."

- Recall from above that on page 4, the risk of wildfires is low, so by admission, instituting shaded fuel breaks is not a treatment high on the list to be implemented as there is no stated "need" for that treatment. In fact, it would cost the District down the road, requiring the District and forest's commitment to maintaining the effectiveness of these fuel breaks. Without continual maintenance, shaded fuel breaks will encourage grass growth and regeneration, creating a heightened risk of wildfires.
- This proposal also lacks site specificity regarding the location and quantity of acres. It lacks the site specificity to review the juxtaposition to other treatments that may support the effectiveness of a shaded fuel break. It is not that we are against shaded fuel breaks but based upon what has been shared in the scoping letter, the "need" is not justified other than to deliver commercial wood products through a timber sale. Please disclose in more detail where, how much, and the effectiveness of treatment in juxtaposition to other treatments.

On page 10, under the description for Prescribed Fire it states, "The proposed action identifies 15,170 acres of prescribed burning. It is acknowledged that not all proposed acres will be burned. However, analyzing the full 15,170 acres allows fire managers the flexibility to focus on burn blocks that would increase the likelihood that prescribed fire units will meet surface fuel reduction objectives, comply with tree mortality limitations, and reduce the risk of escape once initial vegetation treatments have been completed and the resulting site conditions are observed and monitored." Then, on page 10, it says, "Prescribed fire would only be implemented in areas that have received some form of prior vegetative treatment. If a proposed burn unit has not been previously treated, or if additional treatment is necessary to meet burn objectives, prescribed fire implementation may include pre-treatment of non-commercial fuels. Implementation would also include the construction of containment lines as necessary based on site conditions."

- First and foremost, this lacks site specificity of "where." What are the objectives (knowing that the objectives stated in the EA are what are transferred into the Burn plan)?
- As for the "where," the District has all the necessary knowledge to put forth a good-faith identification of stands that have had the necessary vegetation treatments leading up to any application of prescribed fire. It takes roughly two to seven vegetation entries to get a stand to the point where prescribed fire can be applied safely to meet stated objectives. In addition, there is enough professional expertise to properly identify those containment areas that give the burn plan developers the flexibility to plan for safe implementation of the prescribed burns. As described, the prescribed burning proposal lacks the necessary site specificity to offer substantive comments.

- ❖ Does the statement, "Prescribed fire would only be implemented in areas that have received some form of prior vegetative treatment," include those "prior vegetative treatments" listed in the table on page 7?

Many studies of wildfires and the potential benefit of forest restoration efforts have shown that prescribed fire and fire-use are by far the most effective means to reduce the risk of wildfire to both forests and communities. Thinning and logging often increase the intensity of wildfire behavior, therefore, these tools should be used with great caution if the objective is to reduce fire risk.

Watershed Deterioration

Congressional direction for the administration of the forest reserves, now called national forests, began in 1897 with the passage of the Organic Administration Act. One defined purpose for which forest lands were set aside from settlement was "securing favorable conditions of water flow." Subsequent passage of over 25 other federal statutes further defined watershed management on these lands. Water is one of the most important natural resources flowing from forests.

- Page 6 of the scoping letter states, "Over time, stream channels and riparian wetland communities in adjacent grassland meadows and aspen stands have been degraded due to conifer encroachment and the absence of beavers on the landscape. This degradation has resulted in reduced fish habitat quality, lower forage productivity in aspen stands and meadows, increased erosion and sedimentation, a loss of plant species diversity, drying of wetlands and riparian areas, decreased water storage across the landscape and stream channel incision."
  - ❖ We are concerned about the lack of site-specificity to the statement, "Over time, stream channels and riparian wetland communities in adjacent grassland meadows and aspen stands have been degraded due to conifer encroachment and the absence of beavers on the landscape." We say that as this sentence is repeated verbatim in the most recent projects that include this Project (Buffalo), Sawbuck, North Sand, and Fort. Correctly identifying the causal factor of degradation leads to the correct prescription, and a blanket causal declaration is inappropriate.
  - ❖ Typically, disturbance from logging (harvest activities, road (re)construction, and construction of stream crossings) and the associated delivery of sediment to streams are concerns about the degradation of watersheds. Mechanical activities such as timber harvesting also impact soil health by compacting soils, affecting soil depth, pore space, and bulk density. Long-term effects include possible changes to the hydrologic regime with implications for channel stability. The USFS Rocky Mountain Region has determined that when 25% of a 6th-level HUC is harvested, the hydrologic regime of that watershed is degraded.
  - ❖ We are concerned that historical and current cattle grazing practices and road density, which are among the highest in the entire agency, are more causal factors for degradation. So, we fail to see how the proposed mechanical treatments, along with the continuation of current grazing practices, high road density, and uncontrolled OHV uses, will improve conditions in these areas. Instead, the proposed Project and

these other factors are more likely to bring Project watersheds closer to the threshold for impairment in hydrologic function.

Moving into analysis, please:

- Disclose the percentage and degree of disturbance in the proposed Project area watersheds during the past 20-30 years and the parallel monitoring indicative of the degree of recovery in these areas.
- Please show maps of the Project area's watersheds and calculate the disturbance percentage in each watershed. How does this compare to requirements limiting disturbance in watersheds?
- Disclose what will occur after creating and obliterating roads and temporary roads, including road reconstruction. What is the net reduction or net increase of road miles?

Executive Order 13112 – Invasive Species

"Invasive exotic plants constitute 8 to 47 percent of the total flora of most states in the United States… There are approximately 4,500 exotic species in the United States that have established naturalized populations, and at least 15 percent of these cause severe harm" (Sieg, et al, 2010, p. 35).

"Invasive species significantly impact U.S. ecosystems and are one of the greatest threats to forest, rangeland, and urban forest health. They have contributed to increases in fire frequency and intensity, reduced water resources, forest growth, and timber, and negatively affected native species and their habitats throughout the United States. Forest and rangeland managers urgently need effective management techniques to reduce invasive species' effects" (Dix & Britton, 2010, p. 1).

Executive Order 13112 is in place and states, "do not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless according to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

The proposed action states numerous activities that are vectors to invasive introduction and spread. If this moves into analysis, please disclose the status of invasives within the Project area, and if moving forward with activities that include mechanical equipment, please "determine and make public the determination that the benefits of such actions outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

Thank you for the opportunity for stakeholders to provide comments and ask questions about forest management projects.

~ The Norbeck Society