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

January 13, 2025

Patrick Champa, District Ranger
Ryan Tallmadge, Assistant Resource Planner
Bearlodge Ranger District
Black Hills National Forest
P.O. Box 680
Sundance, WY 82729
Submitted via https://www.fs.usda.gov/project/blackhills/?project=67343

Re: Fort Forest Management Project #67343

Dear Ranger Champa and Planner Tallmadge,

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 the 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.

On the following pages, you will find our comments on the Fort Forest Management Project. We request that you include them 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 Habitat Structural Stages (HSS), Culmination of Annual Mean Increment (CMAI), Allowable Sale Quantity, (ASQ), and other related matters. These 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

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Rapid City, SD 57709
info@norbecksociety.com

cc: Shawn Cochran, Toni Strauss, Wendy Skylar

Norbeck Society Scoping Comments
Fort Forest Management Project #67343 (the Project)
Bearlodge District (the District), Black Hills National Forest (BHNF)
January 13, 2025

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Habitat Structural Stages (HSS)

Vegetation or Habitat structural stages (VSS or HSS) describe the growth stages of a stand of living trees. It is based on tree size (DBH) and total canopy cover. Overall, the VSS or HSS depends on the time it takes seedling to become established and subsequent growth rates. The life expectancy of trees determines how long the oldest VSS or HSS can be maintained.

ISSUE

Structural stage conditions are often thought to follow the plant succession series. If a stand in a forest is left alone and given enough time, it will achieve a climax or old-growth state. If a stand in a forest is left alone and given enough time it will achieve a climax or old-growth state. So, the continuum starts with the earliest stages, and given a forest example, this would be at grass/forb, and then progressing through shrub/seedling; sapling/pole; small, medium, and large trees; and eventually achieving giant trees. Catastrophic events along with management prescriptions can reset the succession stages, for example, a fire burning at high severity on a

tract of land mimics in many ways the effect of a clearcut. Differences in seral status have an important bearing on how managers deal with lands and resources entrusted to their care. The influence of seral status on silviculture and forest management is critical in managing forests.

A balance of structure stages is indicative of a healthy forest that is represented by a diverse distribution of structural stages that supports multiple species. For example, "Forests within goshawk nesting home ranges should be an interspersed mosaic of structural stages – young to old forests – to increase the diversity of habitat for goshawks and their prey species." In addition, a diverse distribution of structural stages is the foundation for sustainability (MUSY) and the ability to meet non-declining even flow related to timber production.

LAW, REGULATION, AND POLICY

Law:

- NFMA of 1976: National Forest System Resource Planning: (G)(3) specifying guidelines for land management plans developed to achieve the goals of the Program which- (B) provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives of a land management plan adopted pursuant to this section, provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan;
- NFMA of 1976 "Sec. 13. Limitations on Timber Removal.--(a) The Secretary of Agriculture shall limit the sale of timber from each national forest to a quantity equal to or less than a quantity which can be removed from such forest annually in perpetuity on a sustained-yield basis: Provided, That, in order to meet overall multiple-use objectives, the Secretary may establish an allowable sale quantity for any decade which departs from the projected long-term average sale quantity that would otherwise be established: Provided further, That any such planned departure must be consistent with the multiple-use management objectives of the land management plan. Plans for variations in the allowable sale quantity must be made with public participation as required by section 6(d) of this Act. In addition, within any decade, the Secretary may sell a quantity in excess of the annual allowable sale quantity established pursuant to this section in the case of any national forest so long as the average sale quantity of timber from such national forest over the decade covered by the plan do not exceed such quantity limitation. In those cases where a forest has less than two hundred thousand acres of commercial forest land, the Secretary may use two or more forests for purposes of determining the sustained yield.
- MUSY of 1960: SEC. 4. [16 U.S.C. 531] As used in this Act, the following terms shall have the following meanings: (b) ''Sustained yield of the several products and services'' means the achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.

Code of Federal Regulations:

- CFR 219.2 (b)(2) A plan does not authorize projects or activities or commit the Forest Service to take action. A plan may constrain the Agency from authorizing or carrying out projects and activities, or the manner in which they may occur. Projects and activities must be consistent with the plan (§ 219.15). A plan does not regulate uses by the public, but a project or activity decision that regulates a use

by the public under 36 CFR Part 261, Subpart B, may be made contemporaneously with the approval of a plan, plan amendment, or plan revision. Plans should not repeat laws, regulations, or program management policies, practices, and procedures that are in the Forest Service Directive System.

Chief's Forest Plan Appeal Decision, Lawsuit and Settlement Agreement:

- The Forest Land Resource Management Plan and Forest Plan Habitat Structural Stage Objectives are rooted in a court settlement. The Black Hills National Forest 1997 Revised Land and Resource Management Plan was approved on June 24, 1997. In 1999, Deputy Chief James A. Furnish signed a decision addressing several appeals of the 1997 Revised Forest Plan affirming most appeal points; however, he found that additional evaluation of the sufficiency of the plan in providing for the diversity of plant and animal communities and species viability was needed and thus, the Phase II amendment provided management direction to adequately provide for species diversity and viability. The Phase II amendment fulfilled components of a Settlement Agreement for Civil Action No. 99-N-2173 (U.S. District Court for the District of Colorado, September 2000).

DISCUSSION

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. His decision affirmed the Regional Forester's June 24, 1997, decision in part, with instruction for further actions concerning mining, species viability, and diversity. The interim direction in the 1999 Appeal Decision required the Forest to avoid management actions that could adversely affect species viability and diversity pending adjustments to the 1997 Revised LRMP. An action plan was developed by the Forest Service to implement these adjustments. The action plan scheduled the accomplishment of these adjustments to the 1997 Revised LRMP in two phases: a short-term Phase I Amendment and a long-term, comprehensive Phase II Amendment.

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 certain 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 northern goshawk.

The Forest Plan's Habitat Structural Stage (HSS) Objectives are designed to ensure species viability. The Forest Plan's Goal 2 states, it is to "Provide for a variety of life through management of biologically diverse ecosystems." It meets this through the stated HSS objectives, specifically in MA 5.1-204 & 5.4-206; to "Manage for the following percentages of structural stages in ponderosa pine across the management area in a variety of sizes and shapes [Objective]." Those percentages are stated as follows:

- **Structural Stage 1 (Grass/Forb) of 5%:** The grass/forb stage was historically a product of fires, windthrow, or similar disturbances. Under forest management, this stage can be created through harvesting. This stage is dominated by grasses and forbs lasting until tree seedlings become established.
- **Structural Stage 2 (Shrub/Seedling) of 5%:** The shrub/seedling stage consists of shrubs such as chokecherry, rose, and serviceberry along with tree seedlings. A stand remains in Stage 2 until the tree seedlings reach one-inch diameter at breast height (DBH), which should take less than a decade.
- **Structural Stage 3 (Sapling/Pole) of SS3A 10%; SS3B 15%; SS3C 5%:** The sapling/pole stage consists of trees with stems one to nine inches DBH. This stage typically persists up to 30 years to age 70. Less than 40 percent canopy closure is 3A; 40 to less than 70 percent canopy closure is 3B; and greater than 70 percent canopy closure is 3C. Understory production is inversely related to overstory pine canopy cover.
- **Structural Stage 4 (Mature) of SS4A 25%; SS4B 25%; SS4C 5%:** The mature stage begins when trees reach the 9-inch DBH class. Trees remain in this stage until they are about 160 years old. As with Structural Stage 3, understory productivity depends upon the overstory canopy cover. Less than 40 percent canopy closure is 4A; 40 to less than 70 percent canopy closure is 4B; and greater than 70 percent canopy closure is 4C. The sizes of trees in this stage will vary depending upon growing-site potential and the density of the stand.
- **Structural Stage 5 (Late Succession) of 5%:** This structural stage is characterized by very large trees (16+ inches DBH). Trees are at least 160 years in age; ponderosa pine that reach this age are commonly referred to as "yellow barks." Late succession ponderosa pine may occur in dense stands, but may also grow in the open or in "park-like" stands (Mehl 1992).

The structural stages are the metric by which we can indicate viability for the Northern 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, provides the status and trend of the Northern Goshawk specifically through the disclosure of the nest and foraging habitat. And finally, include the Forest's ASQ annually since October 31. 2005 to aid in a clear understanding of the forest plan's sustainability and non-declining even flow (MUSY).

CONCLUSION

The Fort Forest Management Project appears to be proposing harvest treatments that will involve alteration of Habitat Structural Stages (HSS) that continue to trend to conversion of mature SS4 and SS% to young HSS that exists in percentages far exceeding Forest Plan Goals & Objectives. **If the Fort Forest Management 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**

REFERENCES

Mehl, M. Old growth descriptions for the major forest cover types in the Rocky Mountain Region; 1992.
Odum, E.P. Fundamentals of ecology. Philadelphia, PA: WB Saunders Co.; 1971.

MIS – Goshawk; Species Viability

The northern goshawk is both an MIS and a sensitive species for the Black Hills National Forest. Northern goshawks are large raptors occupying most forested habitats. They commonly nest in

mature and old-growth conifer stands. Nest site selection depends upon the availability of trees with large enough branches to support a nest. Goshawks tend to forage in a variety of open and forested communities (Hillis et al. 2003).

ISSUE

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. 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 Northern Goshawk *and its prey*.

LAW, REGULATION, AND POLICY

Law:

- The National Forest Management Act (NFMA) 1982 planning regulations mandate the use of Management Indicator Species (MIS) in Forest Plans as a means of monitoring the effect management activities are having on species viability.
- NFMA regulations (36CFR219.36) define a viable species as one "consisting of self-sustaining and interacting populations that are well distributed through the species' range. Self-sustaining populations are those that are sufficiently abundant and have sufficient diversity to display the array of life history strategies and forms to provide for their long-term persistence and adaptability over time." A species is described as being well-distributed "when individuals can interact with each other in the portion of the species' range that occurs within the plan area" (36 CFR219.20).

Code of Federal Regulations:

- While the NFMA regulations include requirements for species viability, the Act does not use the term "viability". Rather, it directs that management of National Forests "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area to meet overall multiple-use objectives." The regulation (36CFR219.19) reflects this language on multiple-use when it directs that "The first priority for stewardship of the national forests and grasslands is to maintain or restore ecological sustainability to provide a sustainable flow of uses, values, products, and services from these lands." Thus, requirements for ecosystem and species diversity, including species viability, are placed within the context of the overall goals for sustainability of National Forests. Sustainability is described as being "composed of interdependent ecological, social, and economic elements," and embodying "the principles of multiple-use and sustained-yield without impairment to the productivity of the land" (36 CFR 219.1).

Policy:

- FSM 2670.50 Sensitive species---Plant and animal species identified by the Regional Forester for which population viability is a concern, as evidenced by: a) significant current or predicted downward trends in population numbers, b) significant current or predicted downward trends in habitats of these species.

DISCUSSION (WHY)

The Bearlodge Ranger District has historically contained high quality nesting habitat for the Northern 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 Northern 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. In "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 may be 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.

Meeting or moving towards Habitat Structural Stage Objectives 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.

As this project moves into analysis phase, please 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. In addition, disclose how many of the nine known Goshawk nest sites have had success over the past 5 years and explain how the district will ensure a viable Goshawk population.

CONCLUSION

The Fort Forest Management Project includes 17,928 of commercial harvest that includes clearcuts, seed tree, shelterwood treatments that are proposed in stands that will continue to push mature stands to younger stand structure that serves as critical nesting and foraging habitat for the Northern Goshawk, a Management Indicator Species and a R2 Sensitive Species. **If the commercial treatments continue as proposed and move mature HSS toward younger HSS than this project will be in direct violation of NFMA, Regulations, and its own Policy**.

REFERENCES:

Jason E. Bruggeman, Patricia L. Kennedy, David E. Andersen, Shelly Deisch, Eileen Dowd Stukel "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, 57(4), 595-616, (27 December 2023)

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).

ISSUE

Numerous laws, regulations, and policies guide how trees are harvested on national forest system lands, in this case, the Black Hills National Forest, administered by the US Forest Service. The National Forest Management Act (NFMA) directs that stands shall generally have reached the culmination of mean annual increment[1] (CMAI) before a regeneration harvest. This would apply to overstory removal, clearcutting, shelterwood, and seed tree harvests (even-aged management). The age when a stand generally reaches the culmination of mean annual increment is typically identified in Chapter 2 of the Forest Plan and for the Black Hills National Forest, this should be around 120 years. In addition, NFMA also restricts harvesting to productive timberland where there is assurance that such lands can be adequately restocked within five years after harvest.

LAW, REGULATION, AND POLICY

Law:

- National Forest Management Act Of 1976 - the Secretary shall establish- "(1) standards to insure that, prior to harvest, stands of trees throughout the National Forest System shall generally have reached the culmination of mean annual increment of growth (calculated on the basis of cubic measurement or other methods of calculation at the discretion of the Secretary): Provided, That these standards shall not preclude the use of sound silvicultural practices, such as thinning or other stand improvement measures: Provided further, That these standards shall not preclude the Secretary from salvage or sanitation harvesting of timber stands which are substantially damaged by fire, windthrow or other catastrophe, or which are in imminent danger from insect or disease attack; and "(2) exceptions to these standards for the harvest of particular species of trees in management units after consideration has been given to the multiple uses of the forest including, but not limited to, recreation, wildlife habitat, and range and after completion of public participation processes utilizing the procedures of subsection (d) of this section." (16 U.S.C. 1604)

Code of Federal Regulations:

- 36 CFR 221.3 (a)(1); 36 CFR 221.3 (a)(2); 36 CFR 221.3 (a)(3); 36 CFR 221.3 (a)(5)

Policy:

- FSM 2471.11 and FSM 2471.12 (pg 19 of 58) – "Before applying any even-aged regeneration cutting method to a stand, consider the standards and guidelines in the forest plan concerning the culmination of mean annual increment along with the size, shape, dispersal, and duration of openings. Apply clearcutting only where it is the optimum method of regeneration to meet multiple-use objectives. Ensure the land can be adequately restocked within five years after the final harvest.

Policy:

- FSM 2478.03 (pg 54 of 58) - #2 "Silvicultural examinations, diagnosis of treatment needs, and the preparation of prescriptions detailing the methods, techniques, and timing of the silvicultural activities necessary to achieve

[1] 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).

established objectives are required before initiating any silvicultural treatment on national forest lands. This includes all management actions affecting the establishment, growth, composition, health, and quality of forests and woodlands. On National Forest System lands, all silvicultural activities that cut, burn, establish, or otherwise modify forest vegetation, **must have a silvicultural diagnosis and prescription prepared or reviewed by a certified silviculturist** before implementing the project or treatment."

DISCUSSION

CMAI has been used as a defining metric in the National Forest Management Act of 1976 to define the age at which trees could be logged or clearcut. 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).

The Forest Service chose to interpret the phrase "generally have reached the culmination of mean annual increment of growth" to mean that a tree or stand has reached "the minimum age that attains 95 percent of merchantable cubic volume yield at culmination." The chapter "Land Management Planning" in the Forest Service Manual operationalizes the definition like this: Meet the intent of the culmination of mean annual increment (CMAI) requirement by ensuring the total yield from stands at harvest age is equal to or greater than 95 percent of the volume production corresponding to CMAI.

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.

As this project moves into analysis, disclose the CMAI for all stands proposed for commercial treatment, including the site index.

CONCLUSION

The Fort Forest Management Project includes 17,928 of commercial harvest that includes clearcuts, seed tree, and shelterwood treatments that are 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**.

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. Congress, through the National Forest Management Act (NFMA), has directed the Forest Service to engage in long-term land use and resource management planning. Plans set the framework for land management, uses, and protection, they are developed through an

interdisciplinary process with opportunities for public participation. In the case of timber, they describe where timber harvesting may occur and include measures of sustainable timber harvest levels.

ISSUE

Congress directed the Forest Service to conduct long-term planning and management through the passage of the National Forest Management Act of 1976 (NFMA). NFMA requires the Forest Service to prepare a land and resource management plan—often called a "forest plan"—for each National Forest System unit. These plans are to be revised at least every 15 years. Forest plans guide the management of the plan area by specifying objectives, standards, and guidelines for resources and activities. They contain certain components required by statute, such as components addressing the provision of outdoor recreation, range, wildlife, fish, and timber. Among the most general required components addressing timber are requirements to identify areas and quantities for timber harvesting. The plan must contain the allowable sale quantity, the measure of timber that can be removed annually without impairing future yield.

LAW, Regulation, and Policy

Law:

- NFMA 1604(e): *In developing, maintaining, and revising plans for units of the National Forest System pursuant to this section, the Secretary shall assure that such plans—(2) determine forest management systems, **harvesting levels**, and procedures **in the light of all of the uses** set forth in subsection (c)(1) of this section, the definition of the terms ''multiple use'' and ''sustained yield'' as provided in the Multiple-Use Sustained-Yield Act of 1960, and the availability of lands and their suitability for resource management.*
- NFMA 1611(a) *The Secretary of Agriculture shall limit the sale of timber from each national forest to a quantity equal to or less than a quantity which **can be removed** from such forest annually in perpetuity on a sustained-yield basis: Provided, That, in order to meet overall multiple-use objectives, the Secretary may establish an **allowable sale quantity** for any decade which **departs from the projected long-term average sale quantity** that would otherwise be established…Provided further, That any such **planned departure** must be consistent with the multiple-use management objectives of the land management plan. Plans for variations in the allowable sale quantity must be made with public participation as required by section 1604(d) of this title (procedures for plan revisions).*
- MUSYA of 1960: SEC. 2. 16 U.S.C. 529 The Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained there from. In the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas. The establishment and maintenance of areas of wilderness are consistent with the purposes and provisions of this Act.
- MUSYA of 1960: (b) ''Sustained yield of the several products and services'' means the achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.

Code of Federal Regulations:

- 36 CFR 221.3 (a)(1); 36 CFR 221.3 (a)(2); 36 CFR 221.3 (a)(3); 36 CFR 221.3 (a)(5)

Policy:

- FSH 2409.13, Chapter 30 The purpose of analyzing departures is to determine whether or not it is possible to better meet multiple-use objectives by regulating the planned sale and harvest of timber volume in a manner that deviates from the principle of non-declining flow (34).

DISCUSSION

The National Forest Management Act limits timber removals to be a quantity 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. The need for predictable, sustainable timber harvest levels changes over time. 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 through contributing to community stability.

- Point #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.
- Point #2: ASQs are guided by two other NFMA requirements: (1) non-declining even flow (NDEF), and (2) earned harvest effect (EHE) or allowable cut effect (ACE). Theoretically, a non-declining even flow policy provides for a continuous flow of timber in perpetuity-that is, no more timber may be sold now than can be sold at any time in the future. The NFMA requires non-declining even flow as a general rule unless departures are needed to meet "overall multiple-use objectives."

As the 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 no annual monitoring reports by the Black Hills National Forest please disclose this information in this analysis.

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**

CONCLUSION

The Fort project includes 17,928 of commercial harvest that includes clear-cuts, seed tree, and shelterwood treatments that are proposed in stands well under the CMAI age stated in the Black Hills Forest Plan. In addition, there is no disclosure of how much commercially treating 17,928 acres will contribute to volume sold and thus ASQ. **If the project's proposed commercial harvest treatments continue as roughly described in the scoping letter, then they would be in direct violation of NFMA and MUSYA.**

Misc ISSUES

We are also concerned with the following items found within the Fort Forest Management Project's scoping letter:

Off-site planting

The discussion of off-site tree planting is troubling. The 1970s was a period in Forest Service history that saw close attention and tight controls on reforestation and genetics. It is highly unlikely planting off-site pine occurred, as described in the scoping letter.

Page 5 of the Scoping letter states, "Stands are very dense, and trees are generally less than one foot in diameter. Today, the condition of these stands is poor; the trees are stunted, growing very little in height and retaining dead limbs longer than native ponderosa pine. Many stands are too dense and pose fuel concerns. None of these planted stands appear to be regenerating naturally. (see left). These factors make them susceptible to high-intensity crown fires. Based on these observations and other information, it appears that the trees were grown from seed that originated outside the local area, possibly hundreds of miles away."

The stand pictured on page 5 appears to be in the stem exclusion phase, where "Stem Exclusion" is a phase of stand development in which trees initially grow fast and occupy their growing space, competing strongly for sunlight and moisture. Because trees are tall and reduce light, understory plants are shaded and grow slowly. Species needing sunlight usually die; shrubs and herbs may go dormant. In this stage, the establishment of new trees is precluded by a lack of sunlight (stem exclusion closed canopy) or by a lack of moisture (stem exclusion open canopy). The stand appears to be simply in need of thinning.

As you move forward through the NEPA process, consider the following questions and please address them in the analysis.

- What is the "other information" used to determine which pines are from offsite? These records may include purchase orders made to the nursery that grew the seedlings, silvicultural prescriptions from the 1970s, tree planting notes, or other documents. If there are no records then search for or request new genetic testing. The forest cannot afford to push more stands and acres into SS1 or SS2.
- It is unclear how many acres are proposed for final harvest treatments, such as clear cuts, seed tree, shelterwood, and overstory removal; so, the analysis will need to disclose that and then speak to how planting will be accomplished within the 5-year timeframe required by NFMA for re-forestation.

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).

On page 6 of the scoping letter under Past Management "Timber harvest and other forest management activities have occurred in most of the project area over time. Since 2013, 15 timber sales have been implemented (Table 2). This table demonstrated a lot of overlap with very little discussion on impacts to structural stages (HSS). 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 that contributes to the development of the Proposed Action. Please include structural stage distribution within the project area and across the ranger 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. The Bearlodge Ranger District must be able to move towards or meet HSS distributions in the district. If the Bearlodge Ranger District is unable to disclose that in the analysis, then this project is in direct violation of NFMA, specifically regarding HSS and the surrogate that HSS has to species viability and non-declining even flow (ASQ).

Moving forward into analysis, please:

- Clarify the nearly 18,000 acres of commercial thinning described on page 7 of the scoping letter. The display of commercial treatment is confusing as it appears to suggest, in formatting, that the commercial treatments are commercial thinning with subcategories that are final harvest treatments. Please clarify by using industry-standard Forestry definitions. For example, thinning is an intermediate treatment whereas a clearcut is a final harvest.
- Provide a bar graph of current structural stages compared to Structural Stage Objectives of the Forest Plan.
- Display the existing Structural Stages and how will the proposed treatments change them.

Cohesive Strategy

On page 3 of the scoping letter a general reference to the updated National Cohesive Wildland Fire Management Strategy, states that the strategy "is a nationwide effort seeking all lands solutions to wildland fire management issues. Goals include the development of landscapes, regardless of ownership, that are resilient to fire, insect, disease, invasive species, and climate change disturbances, per management objectives. The Fort project is designed to contribute to the Strategy's goals."

The genesis of the Cohesive Strategy began in the 2001 National Fire Plan. That National Fire Plan identified Communities at risk through a Federal Register process Federal Register:: Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire. Moving forward in the analysis please speak to how the area meets the "Communities at Risk" identification and/or how the area meets the WUI definition as denied in the Federal Register. In addition, the National Fire Plan instituted the requirement for entities to collaborate to write their own Community Wildfire Protection Plans (CWPPs). It is understood that Weston County completed its CWPP in 2008.

In time agencies moved onto the National Cohesive Wildland Fire Management Strategy, which was completed in 2014, and framed around the following vision and elevated three national goals: To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire, striving to meet the three national goals: 1) Resilient Landscapes, 2) Fire Adapted Communities, and 3) Safe and Effective Wildfire Response. When moving through the analysis please speak to those three national goals, as well as the following:

- What specific aspects of the Fort Forest Management Project contribute to the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) and how projects over the last 15 years have contributed to Cumulative effects?
- If proposed treatments rely on fire risk, provide modeling outputs.
- Please describe how the 9 private residences are in a Federal Register-defined Community at risk or WUI and how those proposed treatments support the Weston County CWPP, while not conflicting with the Black Hills NF Forest Plan.

Oak Stands

On page 9 of the scoping letter, "As described above, bur oak shrubs and small trees are common in some pine stands proposed for thinning. In these stands, more of the pine canopy would be retained to provide shading for oak suppression. In some stands that are already moderately open, younger pine age classes are completely absent. This is an unusual condition in Black Hills ponderosa pine and may indicate that oak shading and leaf litter are preventing pine establishment or that the mature trees are not producing viable seeds. In either case, the site may eventually convert to oak as the old pine trees die. To maintain species diversity, actions to suppress oak and create favorable conditions for pine regeneration may be necessary. The objective is not to eliminate oak but to give young pine a chance to become established and grow tall enough to compete with the oak. These additional actions could consist of mechanical chipping of small oaks, burning, concentrated herbivory of domesticated animals, and/or tree planting. Repeated treatments may be necessary. Additionally, to provide a pine seedbed, timber harvest in these stands may be limited to periods when the ground is not covered with snow." In addition, on page 3 of the scoping letter, it is stated that "Over 82 percent of the forest in the project area is dominated by ponderosa pine (Figure 2)."

There are a couple of areas of concern with this proposal, 1) that there appears to be a stated need to increase species diversity by reducing oak and increasing Ponderosa Pine when it is already acknowledged that the project area is 82% Ponderosa Pine. In addition 2) it is stated that this is an "unusual condition" for oak and pine. Please refer to this Rocky Mountain Research (rmrs_1996_sieg_c001.pdf) on this very situation and consider the alternate silvicultural treatments provided in this peer-reviewed paper that can be considered other than commercial timber harvest.

When moving through the analysis please speak to the following:

- How are these areas typed (HSS) and are they part of the suitable base?
- Disclose other vascular or non-vascular plant species that utilize this pine and oak structure.
- Disclose wildlife that utilizes the pine/oak structure. Does this structure also contribute to Goshawk nesting territory, and habitat for their prey, i.e. squirrels, woodpeckers, and rabbits?
- Disclose the silvicultural treatments and related costs to support the actions proposed. For example, what are specific cost projections in dollars per acre for this activity compared to the return (in dollars), i.e. what will it cost taxpayers to get young pines to grow and weed treatments, thinning over a century compared to the value to taxpayers of the anticipated harvest of the old pine trees. If it is highly unlikely funds will be available for the follow-up treatments necessary to meet the outcome, then what is the rationale for undertaking the overstory pine removal?

Watershed Deterioration

Page 6 of the scoping letter states, "Stream channels, riparian/wetland communities, and the adjacent grassland meadows and aspen stands within the project area have been degraded over time by pine encroachment and the absence of beavers on the landscape. This has led to a reduction in the quality of wildlife and fisheries habitat, decreased forage productivity in aspen stands and meadows, increased erosion and sedimentation, loss of vegetation species diversity, the drying of wetlands and riparian areas, loss of stored water on the landscape, and channel incision of streams"

While the scoping letter indicates that pine encroachment and lack of beaver in riparian/wetland communities are the cause of the described ills, we are concerned that historical and current cattle grazing practices and the road density, one of the highest in the entire agency are more the casual factors. 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, along with these other factors, are more likely to bring project watersheds closer to the threshold for impairment in hydrologic function.

Typically, disturbance from logging (harvest activities and road (re)construction, construction of stream crossings) and the associated delivery of sediment to streams is the concern in 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.

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 watersheds in the project area and calculate the percentage of disturbance in each watershed. How does this compare to requirements limiting disturbance in watersheds?
- On page 10 of the scoping document, discussions on "Stream and Wetland Restoration and Enhancement" and "Road-Stream Crossings," please explain the seeming contradiction of wanting to increase sediment storage in the first case and then mitigating sedimentation in the second case.
- Does this analysis include relocating beaver into the project area?
- 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?

Goshawk and Bats Monitoring

Page 5 of the scoping letter states, "There are nine known northern **goshawk** territories in the project area. Nest area stands have been identified and consist of mature pine at moderate to high density. Some of the stands have an understory of dense pine saplings, which decreases suitability for goshawk and elevates crown fire hazard." Moving forward in the analysis, please:

- Disclose the current trends of occupancy and success rates on the 12 known Goshawk nest stands.

- 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.

Page 5 of the scoping letter, contains a brief discussion of **two bat species** listed under the Endangered Species Act that may occur in the project area: the northern long-eared bat (endangered) and the tricolored bat (proposed endangered). "There are 12 documented northern long-eared bat known roost trees in the project area and no documented tricolored bat observations or roosts on Bearlodge Ranger District."

- Please show dates and results of monitoring of bat populations in the project area, as well as across the district that has occurred in the last 10 years including those monitoring events that showed the 12 northern long-eared bat roost trees.
- Disclose the scientific methodology to identify the presence of the two bat species within the project area.

We are concerned about the viability of these species and the provision of necessary habitat in the Black Hills National Forest. The scoping letter contains no mention of **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, and now the Northern long-eared bat has been listed as an Endangered Species and the Tri-color bat as Proposed Endangered. Moving forward in analysis, please:

- Provide a monitoring plan discussion on how goals and needs outlined in the scoping letter will be monitored.
- Disclose the current status of bat monitoring in the project area.
- Provide a discussion of what is known about recent trends of bat and Goshawk populations in the project area as well as the district as a whole.

Project Costs

On page 8 of the scoping letter, it states that "Most of the proposed thinning would occur mechanically. Mechanical piling of large material may be used if needed. If topography prevents this and removal of merchantable material is not needed, manual methods may be used. Depending on stand density and other factors, manual thinning can be expensive to implement and generally requires dedicated funding." Funding is a concern and with the current Forest Service budget deficits this situation is exacerbated. In developing alternatives evaluate alternatives that take into account the full silvicultural treatment regime, so that treatments are proposed that do not just start a silvicultural treatment but that have the reasonably foreseeable ability to finish or place the stand on the trajectory to finish that treatment regime. For example, if overstory removal in an oak stand is implemented, then funding needs to be demonstrated to implement the next logical steps such as prescribed burning, growing seedlings, and planting seedlings if that is what is prescribed by the silviculturist for that stand to meet the objective(s).

On page 8 of the scoping letter, it says that the "Removal of merchantable material using standard methods requires the use of heavy equipment brought in on roads. Existing roads provide access to the majority of the project area. Where roads and topography allow, proposed thinning and removal would be conducted using standard, ground-based systems. These areas compose the majority of the total proposed thinning acres. Temporary roads would be needed in some areas.' Moving forward in the analysis, please

- disclose the miles of roads present, and those anticipated to need to be built need to be disclosed in the analysis, including those that are in areas that are "watershed deteriorated." Roads are the top reason for watershed deterioration and as a result, this

seems contrary to the reasons stated in the scoping letter (pg 6) to improve watersheds. Please include a clear discussion in the analysis of this quandary/conflict.

On page 8 of the scoping letter, it says that "Steep slopes require different harvest methods. Winch-assisted or tethered logging is a steep-slope harvest method new to the Black Hills. It can be expensive to implement, especially if post-harvest fuel treatment is needed. If funding is available, winch-assisted logging could be used as part of this project. Currently, there is no funding available, but we are including this in the proposal as funding may become available in the future. A more cost-effective method of harvesting on steep slopes is the use of skyline logging. This is a more traditional method for operating on steep terrain and has occurred on a limited number of acres within the project area. This method is an option for a small percentage of the acres in the project area and would most likely be implemented concurrently with less steep terrain." Moving forward in the analysis, please

- Reference the Forest Plan Standards and Guidelines that discuss activities on steep slopes and provide the rationale for why a Forest Plan amendment is not required.
- Disclose HSS on steep slopes and disclose the rationale for treating these stands in light of the district's current structural stage diversity and distribution.
- Disclose the road system that will support steep slope logging and in analysis describe those potential impacts to the watershed.

Additionally, moving into analysis, please:

- Please disclose cost estimates per acre of each treatment type including mechanical and manual treatments, prescribed burning, and follow-up weed treatments.
- Provide information on road construction and reconstruction, temporary and permanent. What are the miles and costs? How many will be obliterated at the end of the project?
- What will be the total cost of the Project and will this analysis produce below-cost timber sales?
- Describe how the goals of the Fort Forest Management Project will be affected if the Bearlodge Ranger District does not conduct all of the small tree thinning and prescribed burning.

Aspen Management

On page 6 of the scoping letter, it says that "Stream channels, riparian/wetland communities, and the adjacent grassland meadows and aspen stands within the project area have been degraded over time by pine encroachment and the absence of beavers on the landscape. This has led to a reduction in the quality of wildlife and fisheries habitat, decreased forage productivity in aspen stands and meadows, increased erosion and sedimentation, loss of vegetation species diversity, the drying of wetlands and riparian areas, loss of stored water on the landscape, and channel incision of streams"

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 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).

When moving through the analysis please speak to the following:

- Specify the locations targeted for treatment and also 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 how proposed treatments will change them.
- Disclose the historic actions that have occurred in the area that support the "Stream channels, riparian/wetland communities, and the adjacent grassland meadows and aspen stands within the project area have been degraded over time by pine encroachment and the absence of beavers on the landscape." Watershed analysis of historic impacts exists in agency files for this general area, and we suspect that disclosure of the multitude of potential impacts is more helpful than a simplified causal effect that suggests a simple "pine encroachment and lack of beaver." That simplifies a complex problem that requires complex solutions.

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.

The scoping letter lacks a clear Purpose & Need, one that should present a heavy emphasis on the existing structural stages and the Black Hills Forest Plan Goals and Objectives on structural stage percentages. The majority of the items listed in the scoping letter as "Needs and Opportunities" are foundationally related to structural stages.

On page 7 of the scoping letter is the following list of "Needs and Opportunities," which is said to come from a comparison of desired future conditions and existing conditions.

- Provide wood fiber products for the local economy.
  - ❖ In your analysis, please speak to the concerns spoken above related to the Multiple Use Sustained Yield Act, ASQ, and non-declining flow. The potential violation of NFMA and MUSY would suggest there is not a legitimate need.
- Diversify species composition where understory is dominated by oak shrubs.
  - ❖ Please see our statements above related to oak stands.
- Diversify species composition by enhancing stands that have a pine/aspen component by transitioning from pine to aspen.
  - ❖ Please see our statements above related to structural stages.
- Remove non-native pine and replace with native tree species.
  - ❖ In the scoping letter under "Planting" on page 9 it is stated that "Following clearcuts or when conditions require, seedlings grown from local seed would be manually planted. Seedlings would not be planted in rows. Planting would result in a density of

approximately 430 seedlings per acre or an average spacing of about 10 feet." We can only assume that tree planting would be associated with off-site plant claims, and if true please refer to the assertions above related to off-site pine. Beyond this please explain tree planting and related costs in the Black Hills where it is known to produce prolific natural regeneration.

- Reduce hazardous fuel loads with the use of prescribed fire and physical manipulation of material.
  - ❖ Please see our statements related to the Cohesive Strategy.
- Restore openings that have been encroached by pine.
  - ❖ Please see our statements above related to structural stages.
- Restore stream courses with removal of pine in stream channels and the construction of low-tech features to replicate beaver dams.
  - ❖ Please see our statements above related to watershed deterioration.
- General watershed improvements. There are opportunities to address these needs through commercial and non-commercial timber harvest and thinning, mastication, tree planting, construction of beaver dam analogs (BDAs), and prescribed fire.
  - ❖ Please see our statements above related to watershed deterioration.

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

~ The Norbeck Society