

October 21, 2020

Jack Isaacs
Acting Forest Supervisor
Black Hills National Forest
1019 N. 5th Street
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Mr. Isaacs:

Timber harvest has been an integral part of the Black Hills National Forest (BHNF) for more than a century. That history began in 1899 with Case No. 1, the first timber sale on federal land anywhere in the United States. During a time when national policy was first rooted in “free timber” from public lands, followed by a recognition of the need for conservation, professional foresters looked to the Black Hills National Forest to illustrate sustainable timber management. Since that time, the Black Hills has been an example of sustainable timber harvest and the Black Hills National Forest Advisory Board (NFAB) promotes the concept of sustainability moving forward.

Following the end of the most recent Black Hills mountain pine beetle (MPB) epidemic in 2016, a group of stakeholders, comprised of individuals representing forest products, the states of Wyoming and South Dakota, and the BHNF, agreed to intensify the existing Forest Inventory and Analysis (FIA) plots on the BHNF and remeasure them all over the following two field seasons. Standing live volume, growth, and mortality was to be measured on all plots. Unfortunately, growth and mortality data was not collected on the new, intensified, FIA plots. Although the intensified FIA data improves the resolution of some information, it doesn't for other variables.

Since 2016, the BHNF has grown the stakeholder group to include local governments, environmental groups, additional FS staff, and expanded discussions to include sustainable timber harvests. To supplement the dialogue among the BHNF and stakeholders, on April 15th, 2020 the BHNF issued the following task to the NFAB to provide a recommendation back to the BHNF: “For the Black Hills NF commercial timber program develop and recommend a no more than five-year pathway to meet sustainability requirements...” Sustainability was defined as “removals cannot exceed net growth”, much in the same format presented in the Draft General Technical Report (GTR). The complete task, including additional details such as assumptions the Working Group was directed to consider when forming the recommendation, can be found within the original tasks attached to this letter. Through the process of addressing the task issued to the NFAB, the timber resources working group made numerous additional findings relevant to the task. The findings and recommendations presented in this letter directly address the task, as issued, and are important considerations in the decision-making process.

Considering the assumptions, scientific literature, and other relevant information, the NFAB hereby provides the following findings and recommendations to the BHNF in response to the issued task:

Findings:

1. As explained by the BHNF, and agreed upon by NFAB, the BHNF does not accomplish enough acres of pre-commercial thinning annually to keep pace with the ecological needs of the forest.
2. As explained by the BHNF, and agreed upon by NFAB, funds to perform pre-commercial thinning work are currently inadequate to treat the number of acres necessitating treatment on an annual basis.
3. As explained by the BHNF, and agreed upon by the NFAB, funding for pre-commercial thinning and fuels reduction treatments increase and decrease commensurate with increases and decreases in the commercial timber program on the BHNF – if the commercial timber program increases, pre-commercial funding increases.
4. Structural stage 5 objectives are critical to species viability. There is a need for the BHNF to complete analysis and identify areas to manage for SS5 so that acreage goals can be reached. These areas should receive treatments to encourage diameter growth and resilience to fire and insects.
5. Based on the 2019 Intensified data provided by FIA, the NFAB finds that 8,648,666 ccf of live sawtimber is standing in timberlands of the Black Hills National Forest.
6. The proposal from the NFAB utilizes 6,737,390 ccf of sawtimber from BHNF lands that are subject to structural stage objectives. The lands that are subject to structural stage objectives include both suitable and unsuitable lands.
7. Based on current and past forest resource data pertaining to the BHNF, the NFAB finds that the 2019 mortality rate in sawtimber size trees is nearly zero, but may fluctuate in the future depending on events that are difficult to impossible to forecast. Because future events, at some scale, are possible, the NFAB believes the historic mortality rates (1962-1999) accurately reflect what can be reasonably expected in the foreseeable future.
8. Based on current and past FIA data pertaining to the BHNF, the NFAB finds that a reasonable rate for use in calculating the growth of sawtimber size trees, relative to the standing inventory, is 3.06 percent.
9. Approximately 2,000,000 ccf of standing ponderosa pine sawtimber is located on timberlands outside the acres this recommendation applies to. Numerous authorities, including authorities that allow for an expedited process, are available to the BHNF to implement projects that would manage the additional timberlands where the 2,000,000 ccf is located to help meet forest management objectives.
10. As determined by Forest Service studies, timber harvest activities on the BHNF are the greatest contributor to local economies from any single use on the BHNF.
11. Recent research highlights the effectiveness of thinning treatments through timber sales in reducing the impact from mountain pine beetles and future tree mortality.

Recommendation

Based on the findings by the NFAB for mortality and reasonable growth estimates, the NFAB recommends a commercial sawtimber sale program on the BHNF of 181,000 ccf annually for Forest Service fiscal years 2022-2027. This recommendation utilizes the

timber inventory from the recent FIA measurements and draft GTR, without making changes or corrections to the outputs from those sources. This recommendation uses FIA growth reported from 2006 through 2019, including the intensified data in the determination of the ponderosa pine sawtimber growth rate. Additionally, this recommendation is based on the acres that contribute to the structural stage objectives within the Forest Plan.

At finer detail, the recommendation of 181,000 ccf is the summation of 175,000 ccf of ponderosa pine sawtimber and 6,000 ccf of spruce sawtimber, recognizing an additional approximately 2,000,000 ccf of ponderosa pine sawtimber exists on timberlands outside this recommendation.

Discussion

Pre-Commercial Thinning

A substantial portion of the discussion surrounding the commercial timber sale program centered on the ecological needs and amount of treatment for pre-commercial thinning. Although the draft GTR doesn't model the effects of pre-commercial thinning on growth rates in sawtimber size trees, it does acknowledge that pre-commercial thinning generally increases the growth rate of remaining trees in the thinned stand. Additionally, pre-commercial thinning is essential to reducing the rate of spread and risk of high severity wildfires, and thinning is paramount to increasing the health and vigor of ponderosa pine trees in the Black Hills. These concepts found broad support from all members of the working group, and are a key finding of the NFAB.

Despite how critical in nature pre-commercial thinning is and the support behind it, the BHNF and the NFAB find that there is a gap in the number of acres that require treatment each year and the number of acres which are treated. This gap is principally the result of a shortage of funds to accomplish the work. Funding for the work is typically generated from two sources: appropriated funds from Congress and revenue generated from receipts for timber sales. As a theoretical example, appropriated funds may cover 50 percent of the funding needed to contract the thinning work and timber sale receipts may cover an additional 25 percent. Commercial timber harvest receipts are not meant to fully fund thinning needs on a forest, but rather help bridge the gap between the needs and appropriated funding. Additionally, trees in the sapling to pole timber size class may be thinned as a product of commercial timber harvests. Forest products companies and the BHNF have been working on contractual mechanisms to increase the amount of revenue retained on the Forest and available for spending on other work such as pre-commercial thinning. Based on timber sale targets and average timber bids in recent years, approximately 6 million dollars was generated, annually from the sale of commercial timber on the BHNF. A portion of those timber sale revenues are returned to the BHNF as KV funds and are used for pre-commercial thinning. In 2013-2016 an average of \$758,925 was available in KV funds. From 2017-2019 the average annual KV project

funds were \$1,919,007. The average cost of precommercial treatment in FY 2020 was \$300 per acre.

It is important to recognize that funding for pre-commercial thinning would very likely decrease for the BHNF if the commercial timber sale program decreases. Appropriated funding for pre-commercial thinning normally follows National Forests with greater commercial timber sale programs. This important finding was the product of questions from the working group to BHNF staff and their answers. Additionally, revenue generated from timber sales would decrease commensurate with a decrease in the amount of timber sold, and may reduce further from a reduction of competition if forest products facilities close.

Although thinning treatments are typically much less costly for the BHNF than other National Forests in the Region, this activity is still outside the commercial timber activities and does require funding to contract the work. The presence of an active timber industry helps reduce the cost to perform the thinning work through the increase in the number of timber harvest professionals able to competitively bid on the thinning projects, developing markets for small diameter wood, and the maintenance of road infrastructure to access thinning project areas.

Mitigating Impacts

Impacts from the recent MPB epidemic in the Black Hills is a foundational topic to the discussion on sustainable timber resources. The importance lies not only in examining the effects of the epidemic, but also in proposing methods to reduce future mortality from another epidemic. Recent research from the Rocky Mountain Research Station by Negrón et al (2017)¹ exemplifies the successes of implementing forest management through timber harvest on a landscape scale. Importantly, the commercially harvested areas retained a larger quadratic mean diameter pre and post outbreak. From the publication:

“Quadratic mean diameter was larger in thinned stands, both pre- and postoutbreak. Percent ponderosa pine basal area and tree density killed by MPB in unthinned stands were 38.2 +/- 7.0 and 34.4 +/- 6.9% compared with 3.9 +/- 3.2 and 3.6 +/- 2.9% in thinned stands, respectively. All stands were thinned within 2 years of exposure to MPB, suggesting a rapid effect from thinning treatments in mitigating tree mortality attributed to MPB. Stand density reductions through silviculture across a large geographical area can abate MPB-caused tree mortality.”

Retention of greater quadratic mean diameters through disturbance events is critical to developing and meeting late successional (SS5) structural stage objectives. Thinning will make these stands more resilient to MPB epidemics and will increase diameter growth on residual trees. Ongoing treatments in the understory are necessary to maintain resilience to fire and

¹ Negrón, Jose F., Kurt K. Allen, Angie Ambourn, Blaine Cook, Kenneth Marchand. 2017. Large-Scale Thinnings, Ponderosa Pine, and Mountain Pine Beetle in the Black Hills, USA. *Forest Science* Vol.63, Issue 5, pp. 529-536. <http://dx.doi.org/10.5849/FS-2016-061>.

insects. Further, continuing landscape scale treatments presents a well-tested path to reduce future mortality rates from mountain pine beetle epidemics.

Standing Sawtimber Inventory

Throughout the process of formulating a recommendation, some members of the Working Group expressed concerns regarding the standing inventory of ponderosa pine sawtimber, as reported in the 2019 intensified FIA data. Part of that concern was based on the 7 percent reduction of acres classified as timberland, as compared to 2016. Other concerns were based in the 12 percent reduction of acres classified as suited base, as compared to 2016. Despite those concerns, the Working Group did not revise or otherwise adjust the standing sawtimber inventory figures reported from the 2019 intensified FIA data.

Growth

Using the model put forth within the draft GTR, growth rate is a component of the arithmetic used to calculate what level of timber harvests may be sustainable for the BHNH. The NFAB recognizes the importance of this value and, as such, the working group spent a considerable amount of time analyzing information pertaining to this issue. According to the draft GTR, the growth rate, as a percent of the total standing inventory, was as high as 3.17 percent as recently as 2017. Examining the annual averages from FIA data beginning in 2006 (the first year with repeated plot measurements), and incorporating the 2019 intensified data, ponderosa pine sawtimber had an average growth rate of 3.06 percent. FIA has examined this growth figure and did not find any miscalculations associated with it. In a response document, FIA referred to the data supporting this number, as well as the 2019 intensified data, as “The expansion and adjustment factors were computed for this specific sample/stratification pairing, yielding an unbiased estimate.”

After examining information presented in the draft GTR, along with other forest inventory information, the NFAB supports the use of 3.06 percent as a reasonable growth rate for ponderosa pine sawtimber.

Mortality

Along with growth, the mortality rate of sawtimber size trees in the BHNH is another component of the equation within the draft GTR for determining a sustainable sawtimber harvest level. Just as with the growth rate, the working group spent a considerable amount of time analyzing information from the draft GTR and other sources. Mortality rates, as a percent of standing timber inventory, presented within the draft GTR range from .16 to 3.07 percent. For nearly 40 years, between 1962 and 1999, the mortality rate of ponderosa pine was between .16 and .26 percent as reported by the draft GTR. As standing inventory increased (and a commensurate increase in stand densities), mortality from mountain pine beetle and

wildfires also increased. The mortality rates increased until reaching the maximum of 3.07 percent reported in the 2019 FIA dataset.

Determining a reasonable mortality rate requires analysis of current mortality rates along with some speculation about what may come to be in the Black Hills. Although the draft GTR attempts to look 40 years into the future, the NFAB was specifically tasked with presenting a plan for no more than five years. A 2019 aerial analysis of tree mortality in the Black Hills by USFS Forest Health Monitoring revealed 29 acres of pine beetle mortality across all ownerships. Some in the group believe the current mortality rate is likely as close to zero as it has ever been on the BHNF. Looking beyond the current aerial survey, the possibility of future events enters the discussion. Research conducted in the Black Hills by the Rocky Mountain Research Station highlights the effect from forest management activities on reducing mortality rates from pine beetles. Reducing forest management activities may increase the likelihood that mortality rates will increase in the future.

The Working Group previously reported to NFAB agreement among the members that .26 percent was a reasonable mortality rate for use in the calculation and analysis of sustainable timber harvest levels on the BHNF. Although the previously reported mortality rate may reflect future estimates, in an effort to reach a compromise among Working Group members, the proposal from the Working Group, and NFAB, utilizes a mortality rate of .4 percent.

Other Information

Importantly, the current Allowable Sale Quantity for the BHNF includes white spruce and the NFAB believes that white spruce should be included in the timber program. Further, it should be noted that the BHNF has stated that an additional 150,000-200,000 ccf of spruce is likely to be available over the next several years as a product of a targeted white spruce project.

Economic Impact

Although economics do not factor into the task of determining a sustainable timber program, communities and economies are part of the broader sustainability question and merit discussing the findings of the Working Group regarding direction related to timber resources on the BHNF. Forest products companies directly employ more than 1,400 people and contribute more than \$120 million in salaries and contractor payments to local communities. Indirectly, forest products companies contribute to numerous other local businesses, local non-profits, and the tax base.

The most recent Forest Service report detailing economic impacts from the BHNF to local communities shows forest products as the single greatest contributor of the number of jobs and wage earnings – generating 2,260 total jobs (average annual) and \$105 million in total labor income (average annual). The BHNF is managed for multiple uses, including recreation, tourism, grazing, timber, and minerals, among others. When combined, recreation and tourism from local and out-of-state sources was the second highest economic contributor from uses on

the BHNF – generating 730 total jobs (average annual) and \$21 million in total labor income (average annual). Decisions regarding any use of the BHNF will impact local economies and their sustainability.

Other Considerations not Evaluated

Outside these findings and recommendations, the NFAB also considered other issues relevant to the commercial timber sale program on the BHNF. The most relevant issue discussed, but not acted on by the NFAB, is timber project planning and the National Environmental Policy Act (NEPA). Although NEPA is a critical step in the process of implementing forest management projects, the topic of planning future projects is outside the scope of the task to NFAB. We recognize the importance of this topic and urge the BHNF to bring future projects and proposals that require public input through the NEPA process to the NFAB for comment.

Timber sources from off-BHNF lands were considered but not evaluated because: 1) they do not affect sustainability on National Forest System lands; 2) the NFAB has no influence on sales from these lands, and; 3) these lands already provide wood fiber to the industry so they would not be additive.

The National Forest Advisory Board thanks the BHNF for this opportunity to provide these recommendations regarding a sustainable commercial timber harvest program on the Black Hills National Forest. We look forward to working with the BHNF on other land management issues in the future.

Sincerely,



Danielle Wiebers

BHNF Advisory Board Chairperson

October 28, 2020

Jack Isaacs, Acting Supervisor
Black Hills National Forest
1019 North 5th Street
Custer, SD 57730

Re: NFAB timber sustainability recommendation

Dear Mr. Isaacs,

We are writing to express our commitment to having the best decision possible relative to sustained yields of timber going forward on the Black Hills National Forest. This aspect of management is a cornerstone to all uses of the forest and getting it right is critical.

The differences between the two presentations given by the timber sustainability working group at the National Forest Advisory Board meeting October 21 were substantive and raise questions that have merits. The good points made in the dissenting presentation should be answered.

We think it imprudent to rush to a decision before receiving the final General Technical Report: "Timber Growth and Yield in the Black Hills National Forest: A Changing Forest," also known as the "GTR." With the volume target for FY21 already set at 175,000 ccf, there is ample time to explore a true "pathway to sustainability" as described in the tasking given to the timber sustainability working group.

We advise strong consideration of the dissenting recommendation put forth by working group members Corissa Busse and Robert Burns who gave a clear and important recommendation that we transmit here for full consideration of the Forest Service.

Key points are:

1. Wait for the final GTR.
2. Use the best available technical information including knowledge from BHNF specialists familiar with the Forest Plan.
3. Meet the tasking to find a pathway to long-term sustainability as required by the National Forest Management Act.
4. Address pre-commercial thinning needs with mechanical thinning and prescribed fire.

We appreciate the opportunity of serving on the advisory board and supporting good management of the Black Hills National Forest.

Sincerely,

Dick Brown, National sportsmen group
Robert Burns, SD elected/appointed office
John Gomez, National environmental group
Dennis Yellow Thunder, Tribal elected/appointed office
Mary Zimmerman, Regional environmental group

Att: dissenting recommendation

To:
The Black Hills National Forest Advisory Board
c/o Chairperson Danielle Wiebers

CC:
Jack Isaacs
Acting Forest Supervisor
Black Hills National Forest
1019 N. 5th Street
Custer, SD 57730

October 19, 2020

Re: Timber Sustainability Working Group – Concerns and Recommendations

Dear Black Hills National Forest Advisory Board Members,

The Nature Conservancy appreciated the opportunity to serve on the Black Hills National Forest Advisory Board's timber sustainability working group as created in April 2015 by the Black Hills National Forest (BHNF) Leadership. The Conservancy supports maintaining a long-term viable timber industry into the future. However, we are concerned that the majority recommendations as presented to the Board will not help us achieve that goal and we submit this letter for the record in order to share our concerns with the Board and BHNF Leadership.

The Nature Conservancy is a global conservation organization working around the world to protect ecologically important land and water for people and nature. Our mission is to conserve the lands and waters on which all life depends. Guided by science, we create innovative, on-the-ground solutions to our world's toughest challenges. We use a collaborative approach that engages local communities, governments, the private sector, and other partners.

The Conservancy's forest programming aims to foster a dramatic increase in proactive, science-based restoration of our nation's federal forests, thereby reducing the human and environmental costs associated with unnaturally large and damaging wildfires and other stressors such as insect and disease epidemics. The Conservancy is an active participant in more than twenty forest collaboratives across the country pursuing these goals. We have decades of hands-on experience working on Forest Service field projects and forest plans on dozens of national forests and grasslands all over the nation as well as extensive national level policy development and engagement.

With this extensive background in sustainable forest management and desire to see our forests last into the future for the benefit of both the environment and economic sustainability, we would like to share both a brief history of how we got to today and our concerns regarding the recommendations as submitted by the sustainability working group.

How we got here:

- Over the past several decades, the Black Hills National Forest (BHNF) has experienced significant change from a variety of natural causes including mountain pine beetle and wildfire. In 1997 when the current allowable sale quantity (ASQ) was set for sawtimber at 181,000 CCF per year, the Forest had double the current standing live volume (15,353,000 CCF). Today, only half of this volume remains on the Forest.
- As recently as last month, we as a board acknowledged the changed Forest conditions in a letter to the USFS. We agreed on the immediate need to be proactive in planning for the Forest's future because of the impact of MPB and wildfire on over 650,000 acres of the BHNF since the 1990s. Our letter stated: "The effects of mountain pine beetle, extreme weather events, and expanded fire season have changed the condition of the Forest which requires re-evaluation of the plan's desired future conditions, objectives, standards and guidelines." The letter recommended that the BHNF begin the Forest Plan revision process as soon as possible.
- The Forest-wide changes that have occurred since the 1990s led the BHNF leadership and stakeholders to agree in 2016 to complete intensified sampling using Forest Inventory Analysis (FIA) plots. This would determine the Forest's standing live volume and condition. The findings of this intensified FIA, as well as analysis of historic trends, were documented in the March 2020 draft General Technical Report (GTR): "Timber Growth and Yield in the Black Hills National Forest: A Changing Forest". Relevant data from the report includes:
 - The current allowable sale quantity (ASQ) as determined in the 1997 Forest Plan was set at 181,000 CCF (1 CCF = 100 cubic feet) of sawtimber (9 inches and greater d.b.h.).
 - However, the 2019 conditions of the BHNF did not support a Forest Plan ASQ of 181,000 CCF, nor did these forest conditions support the annual harvest of 153,534 CCF that occurred in 2019.
 - In order to sustain the Forest Plan ASQ of 181,000 CCF, the Forest would need to have a standing live sawtimber volume of more than 12,000,000 CCF. However, current (2019) standing live sawtimber volume within the suitable base is 5,995,428 CCF.
 - The report concluded that the forest's standing inventory was in decline and that the timber program would need to make adjustments in order to remain sustainable into the future.
- The draft GTR represents a rigorous analysis of the changing conditions of the BHNF and provides information critical to ensuring sustainable management. The situation is concerning and challenging if difficult management changes are not pursued, with major consequences for the forest industry, jobs, tourism, ecological values, wildlife, and forest ecosystem services including freshwater and carbon sequestration.

- Given the gravity of this report and potential consequences to forest stakeholders, the USFS Leadership requested that a committee of the NFAB be formed to provide recommendations for the BHNF commercial timber program to, "... develop and recommend a *no more than five-year pathway to meet sustainability requirements...*" according to outlined constraints and assumptions.

Concerns with Majority Recommendation from the Timber Sustainability Working Group

- **The majority recommendation to NFAB disregards changed conditions in the Forest and recommends moving ahead with a timber program without waiting for the final peer-reviewed GTR to be released.** A final recommendation from the NFAB should align with the findings of the GTR regarding the changed condition of the BHNF and adjust the timber program to a new lower volume appropriate to this recognition. The final peer-reviewed GTR will provide a summary of years of analysis of forest trends and current conditions and should be utilized as an invaluable resource in our decision making.

As previously stated, all members of the working group, the entirety of this board, and the draft GTR recognize forest conditions have changed since the 1990s when the ASQ was established, yet the majority recommendation suggests continuing business as usual (timber harvest at the current ASQ volume of 181,000 CCF) based on optimistic calculations that depart substantially from those in the draft GTR, and does not appropriately apply the FIA data to those findings.

To continue a timber program at our current level of 181,000 CCF would involve harvesting at an unsustainable rate. If followed, the majority recommendation from the working group will ultimately compromise timber harvest as a management tool and economic opportunity for future generations. Per the National Forest Management Act, the Forest is required to manage the forest in a sustainable manner; ensuring that a timber program remains viable for future generations.

- **The majority recommendation uses an inappropriate starting point volume of 6,737,390 CCF as further detailed below.** The accurate volume to use was documented through intensified FIA data which concluded as of 2019 that the standing live sawtimber volume within the suitable base was 5,995,428 CCF. This number should be further calibrated to account for the 163,682 CCF of timber volume sold since the report was released. A final recommendation from NFAB should utilize the accurate standing live inventory on suitable lands as its starting point.
- **The majority recommendation includes approximately 106,000 acres of unsuitable lands as a part of its base calculations resulting in an inflated starting point volume of 6,737,390 CCF rather than the 5,995,428 CCF noted above.**
 - The majority report inaccurately projects and adds roughly 741,962 CCF from unsuitable lands into their base calculations. This added volume cannot be depended on for long-term sustainable harvest as it is located on unsuitable land. Sustainable harvest levels should come from the suitable base and can be *supplemented* but not sustained by harvests from the unsuitable base that

meet specific management needs on those lands.

- Unsuitable lands are not intended, nor can they provide an economically viable long-term sustainable timber volume (that is the role of the suitable base). Timber harvest within these lands would require additional National Environmental Policy Act (NEPA) review and must be addressed on a case-by-case basis intended to meet specific management needs.
- Unsuitable lands included in the alternate recommendation as a part of the sustainable timber program include significant acres of old growth, as well as acres that would not be economically viable for harvest such as 42,705 acres where "topography would prevent harvest by tractor or cable". The cost to treat these acres by helicopter would be well over \$200M and should not be considered as an area intended to produce timber volume over a long-term sustainable pathway.
- Unsuitable lands can and should be evaluated for management needs. Where and when holistic management including timber harvest is appropriate on unsuitable lands to promote forest health, community safety, wildlife habitat and more, we recommend that the timber volume harvested from these lands help supplement the annual timber program level.
- **The majority recommendation utilizes optimistic numbers for mortality and growth that result in a net growth of 2.66%. This rate of net growth is higher than the BHNF has seen in its history as documented in Table 1 of the draft GTR.** Long-term planning must consider future needs and challenges and use realistic data and trends. Using short-term or optimistic numbers creates vulnerability in the calculations and could prove inaccurate if wildfire, severe weather, or other instances cause increased mortality. Using long-term data and trends decreases this risk of inaccuracies and helps create a more stable long-term plan for the future of the timber program. The detailed comments below provide additional information on long-term growth and mortality rates documented in the draft GTR. The NFAB recommendation should be a five-year pathway to long-term sustainability, not a five-year plan to sustain a timber program at the current ASQ.
- **The volume determined by net growth must be applied through additional calculations based on restrictions and management objectives and needs on suitable lands of the BHNF. The majority recommendation does not factor in these restrictions and management objectives appropriately.** As noted in the draft GTR's key points: "All scenarios assume no harvest reduction for other resources (e.g., wildlife, botany, aquatics, and so on) or for Forest Plan adjustments. However, Black Hills National Forest (BHNF) may have restrictions that could alter the amount of area treated and the volumes removed." Calculating limits to available volume based on management objectives and restrictions in the BHNF is complex and significantly impacts and decreases the amount of volume available for timber harvest. This is a critical calculation to accurately determine a sustainable timber program. The NFAB recommendation should utilize the best available specialist and technical knowledge in Forest

resource planning to give guidance on how these calculations apply. This is further described in our recommendations and the detailed comments below.

The task before the timber working group was extremely challenging, and for the reasons outlined above, we have concerns with the recommendation as put forth by the majority of the working group members. As noted, the group was assigned to develop a five-year pathway to sustainability for the timber program, not to create a five-year plan to sustain current harvest levels.

If long-term, accurate data and additional restrictions and management needs are not accounted for in determining a sustainable timber program, it will result in front-loading the annual harvest and a severe wall will be hit when sufficient timber volume is no longer available. This would have a profound negative impact economically for the region and for the long-term health and management of the BHNF.

The course ahead may be challenging, but we believe there are many opportunities for stakeholders and the USFS to work together to improve the conditions and sustainability of the forest. Only by working together can we reach consensus on utilizing as many options and creative solutions as possible to maintain the sustainability of jobs and timber supply into the future.

We would like to offer the following recommendations to the Board that we believe more accurately respond to the task the work group was given of developing a *pathway to meet sustainability* requirements.

Recommendations:

- 1.) The BHNF and NFAB should utilize the information to be provided in the final GTR (which is anticipated soon), in order to determine a sustainable timber program for the future.
- 2.) The BHNF and NFAB should utilize the best available technical information from USFS specialists familiar with the BHNF's management objectives and structural stages. This information is complex and highly critical in calibrating the net growth from the GTR to a timber program that can be sustained into the future while meeting the BHNF's multiple objectives.
- 3.) As tasked to the working group, the BHNF and NFAB should provide a recommendation that represents a no more than five-year pathway to long-term sustainability requirements rather than a short-term solution to sustain for the ensuing five-years. Only a long-term plan would support the National Forest Management Act (NFMA) requirement to manage the Forest in a sustainable manner for future generations.
- 4.) The BHNF and NFAB should develop a plan to prioritize, fund, and address the 220,000-acre backlog of pre-commercial thinning needed within the BHNF. Treatment of these dense immature stands through both mechanical thinning and prescribed fire would increase timber production for future generations while also reducing the risk of wildfire and mountain pine beetle attack.

DETAILED COMMENTS & SUPPORTING RATIONALE:

Growth and Mortality -

As recommended in the GTR, growth and mortality assumptions should incorporate long-term data trends while also acknowledging the impact of climate change on the future of our forest.

Mortality: In recent decades, mortality from fire has increased with significant wildfires now occurring in shoulder and off-peak seasons. Additionally, mountain pine beetle are endemic to the Black Hills area. Epidemic levels of occurrence are known to occur every thirty or so years as a natural cycle of the forest. The Draft GTR indicates that a Walters et. al 1.04% mortality rate from wildfire and MPB represents a much more realistic assumption than the 0.4% mortality rate used in the majority report. This mortality rate is likely an underestimate, as it does not incorporate adjustments for climate change as those were outside the scope of the GTR.

Climate change has increased the severity of both weather events and wildfires across the nation, and in the Black Hills. The three largest wildfires on record within the Black Hills region have all occurred within the past two decades (Jasper, Oil Creek, and Legion Lake). Wildfires in the Black Hills have burned over three times as many acres in the last two decades than was recorded in any other twenty-year period prior. Additionally, severe and unseasonable weather events such as Winter Storm Atlas and late spring blizzards also affect tree mortality and will continue to alter the condition of the forest as the rate of these events continues or increases into the future.

In concurrence with the draft GTR, we believe a 1.04% mortality rate represents a minimum assumption appropriate for developing a long-term sustainable program for timber.

Growth: The draft GTR utilized a gross growth rate of 2.5% in its findings as this was found to be the most representative historic growth rate from over 100 years of data. The GTR states that gross growth rates ranging from 2.3% up to 2.7% were found historically in the Black Hills using decades of data and findings.

The growth rate of 3.06% utilized in the majority recommendation is not consistent with the findings of the draft GTR.

Net Growth: If the draft GTR assumptions of 1.04% mortality and 2.7% gross growth were utilized, this would result in a 1.66% net growth in comparison to the 2.66% net growth suggested in the majority recommendation.

The 2.66% net growth figure utilized in the majority recommendation is higher than the average historic *gross* growth across the BHNF and is an inappropriate number to utilize in this decision. Historic gross growth and net growth figures can be noted in Table 1 of the draft GTR.

Management Objectives -

The draft GTR concludes the level of net growth within the BHNF based on long-term trend data of growth, mortality, and a standing live volume inventory. However, not all net growth within the suitable base is available for timber harvest. In order to conclude the level of timber harvest that can be sustained while also maintaining structural stage objectives of the Forest Management Plan, this net growth must be additionally filtered through calculations for management objectives. Appropriately applying this filter has a significant impact on the amount of net growth available for timber harvest.

The simplified definition of sustainability utilized in the majority recommendation of, "Removals cannot exceed net growth," is not appropriate. Not all net growth within the suitable base is available for timber harvest due to restrictions, structural stage objectives and species viability needs. This must be taken into consideration when determining sustainable timber programming.

The Forest Plan's structural stage objectives require maintaining a certain percentage of acres within each of the structural stages in order to meet species viability and other requirements. Once these acreage objectives are met, remaining volume and net growth within those acres may no longer be available for harvest. This is a critical factor in determining a sustainable forest program and is *not* included in the draft GTR as the report did not factor in "harvest reduction for other resources." We strongly recommend that the Forest utilize the best available technical information from USFS specialists familiar with BHNF management objectives in order to determine a sustainable timber program that meets the multiple objectives of the Forest Plan.

Old Growth -

As stated in the majority recommendation: "Structural stage 5 objectives are critical to species viability. There is a need for the BHNF to complete analysis and identify areas to manage for SS5 so that acreage goals can be reached. These areas should receive treatments to encourage diameter growth and resilience to fire and insects." We agree with this conclusion and the importance of holistic forest treatments including prescribed fire in supporting structural stage 5 (SS5) or old growth stands.

The BHNF is currently not meeting objectives in SS5 stands. In order to meet this need, the current Black Hills Resilient Landscapes (BHRL) project proposes to reserve excess acres of SS4C to develop into SS5 with time. This can be appropriate given the similarity of species viability and habitat needs between SS4C and SS5 stands for Northern Goshawk and Brown Creeper. The majority recommendation proposes to harvest these SS4C stands reserved in BHRL for development into SS5, but does not reserve alternate acres within any other age class from harvest to develop into SS5. A final recommendation on a sustainable timber program should account for SS5 needs by identifying and conserving acres to develop into or meet SS5 objectives.

Holistic management needs; Pre-commercial thinning and prescribed fire can help promote timber for the future -

- The draft GTR suggests that "Both mechanical thinning and prescribed fire are warranted to produce large trees of both commercial and ecological value at a faster rate." We agree.

- The Black Hills experiences significant pine regeneration in dense stands that require pre-commercial thinning or fire management. These dense stands of “dog-hair” pine affect our forest’s health by increasing fire danger and decreasing timber volume for the future. The Forest currently has a backlog of approximately 220,000 untreated acres in need of timber stand improvement.
- *The timber committee unanimously agrees that treatment of these stands should be a priority for the BBNF.*
- A current challenge to complete these treatments, as outlined in the majority recommendation is funding. We recommend that the USFS explore the use of stewardship agreements and stewardship contracts which can allow the Forest to retain additional funds on the Forest for these treatments beyond what current KV funding allows.

CLOSING

In closing, we appreciate the need for the Forest Service to adjust its management. We strongly urge that a recommendation for a sustainable timber program should align with the best available science and the findings of the GTR once finalized. We welcome the opportunity to continue to work with the agency and other stakeholders and decision makers to enhance Forest Service management in current and future planning efforts.

The Nature Conservancy appreciates the steps the Forest Service is taking to ensure timber is sustained into the future and recognize that this is a decision with significant impacts socially, ecologically, and economically now and into the future. We look forward to continuing to work through solutions to these challenging issues. Please contact us for any clarification or to discuss any of our recommendations or concerns.

Sincerely,



Corissa Busse
The Nature Conservancy Western SD Conservation Manager
National Forest Advisory Board member

Enclosures:

- 1.) Tasking assigned to the Timber Sustainability Working Group
- 2.) 2020 draft General Technical Report (GTR): “Timber Growth and Yield in the Black Hills National Forest: A Changing Forest”