To: Ranger Jim Gubbles

RE: Sawbuck draft EA

I have two primary themes in which I would like to comment on regarding the Sawbuck draft EA: Fire & Fuels and Water-Shed health.

**Existing Conditions**

The documents states, *"Current conditions in the Sawbuck project area include large areas of dead and down ponderosa pine with a mosaic of forest stands ranging from dense stands of primarily pine trees greater than nine inches in diameter at breast height (DBH) to stands that are dominated by trees less than 6.9 inches DBH. This area has had some of the highest mountain pine beetle infestation impacts on the Black Hills National Forest stemming from the most recent epidemic which ended in 2016. The mortality from this epidemic has greatly increased fuel loads on the forest floor."*
It goes on to state, *"Fire exclusion practices since the late 1800s have created dense, uniform forests with altered vegetation and limited size and age diversity, which can contribute to the likelihood of catastrophic wildfires occurring."* These two statements are at odd with each other; the first describes disturbance resulting in a mosaic of conditions while the latter describes undisturbed stands of continuous canopy fuels.
More than two prescribed fires took place within the project area. Lemming, Pole Creek, Lookout and Bombard. Lookout (2004) was a pretty straight forward burn though the district silviculturist performed duties as Ignition Specialist on the burn; later a salvage sale was conducted within the project area. The Bombard Rx (2003) was more difficult to implement due to a more complex fuel arrangement. Fire was introduced into stands of mixed conifer and pure spruce. Advanced fire behavior was observed due to the inherent nature of spruce burning as it is an "all or nothing" species. Either fire would creep in and around the spruce or single and group tree torching was observed; not necessarily a bad thing, just something to be aware of. Additionally, mop-up operations were difficult as duff was deep and lead to creeping in and amongst the spruce. As the duff would burn up under the spruce, it would lead to a single tree torch or the tree would fall over resulting in more open fire. Active Mop-up occurred for over two weeks until a project ending weather event occurred.

**Proposed Action and Alternatives**

*Conifer Thinning*

No structural stage 4 stands should be cut. The Mountain Pine Beetle Response and Black Hills Resilient Landscapes decisions were heavily utilized within the Saw Buck Project area. BHRL was designed to "move forest structure and composition toward objectives". Any resulting 4a, b, or c stands should not be commercially cut as they were implemented to move conditions towards Forest Objectives. What little large tree diversity that exists should be retained. Table 8.1 shows that HSS-4b&4c make a mere 11.2% in all management areas; these treatments would further reduce this percentage to 7.3%. Reducing any of the 1.1% of the 4c certainly should not occur. If HSS-4c only makes up 1.1%, why would any HSS-4b be cut as these are the stands that would move a HsSS-4c the fastest. And, if I am understanding this table correctly any HSS-4 stands would be cut to a HSS-3a. Table 8.2 shows that HSS-4b would move away from Forest Objectives.

Cutting what few stands of dense forest will only reduce diversity even farther.

*Fire and Fuels*

Existing conditions states: "Currently, 37% of the project area is classified as high to very high fire hazard, and 59% as moderate." How were these numbers determined? Supporting documentation should be included.

Alternative 2 states, "It is anticipated that not all acres identified for prescribed fire would ultimately be treated." How were these areas identified? It appears that boundaries were identified by holding features; some explanation of how these boundaries were identified should be included. How many acres or percentage of project are anticipated to be implemented of the 30,577 acres identified? Is there a target percentage? What percentage of the project area would need to be implemented to have a meaningful effect?

Nearly 64,000 acres of fuels-based treatments are identified. How many of these will be treated? Is there a target percentage? What percentage of the project area would need to be implemented to have a meaningful effect? Fuel breaks do not identify surface fuel treatments to be concurrent with other vegetative treatments. Will surface fuels be treated within these areas?

There was no mention Potential Operational Delineations, a significant national initiative that the Black Hills National Forest along with nearly all of its cooperators spent considerable time to determine on the Forest. Will treatments be designed along POD boundaries to enhance prescribed fire opportunities? Or to enhance suppression opportunities?

The Interagency Fuels Treatment Decision Support System is another significant project supported nationally by the Forest Service. Was IFTDSS utilized to determine the fire hazard ratings figures noted in Table 4? If so, IFTDSS outputs and runs should be included within the analysis. And if not, IFTDSS should be utilized to determine fire hazard ratings as it is the best science and modeling available.

*Watersheds*

Watershed health should be viewed as a ridge to river thought process. This project incorporates the bulk of the upper Rapid Creek and Castle Creek watersheds, Rapid City's primary water supply; the importance of this project area was recognized. How does this project respond to the recent release of the USGS report? *Hydrologic Budgets and Water Availability of Six Bedrock Aquifers in the Black Hills Area, South Dakota and Wyoming, 1931–2022*

Under Other Proposed Activities the EA states: "Thinning or complete removal of encroaching conifer and non-native species within Aquatic Management Zones (AMZs) to enhance habitat conditions is planned." How many acres or miles of corridor are planned? Is there a target percentage? What percentage of the project area would need to be implemented to have a meaningful effect?

I would encourage aggressive conifer cutting within riparian corridors. Aspen and willow are the prime food sources for Beaver; aggressively cutting both pine and spruce within riparian corridors and lower toe of slopes will increase food sources and enhance habitat. Please consider coppice cutting of aspen to encourage new growth within these corridors as well.

I am encouraged to see that Low-Tech Process Based Restoration efforts are included in Other Proposed Activities. Beaver Dam Analogs are an effective method for encouraging and enhancing riparian health. How many miles of stream are proposed for these efforts? How many miles or percentage of streams within the project area will need implementation to have a meaningful effect? Is there a target associated with these treatments?

Additionally, the draft EA states, “Design features restrict the use of mechanized equipment in AMZs except at existing crossings where riparian vegetation, stream shading, and streambanks can be protected and sediment delivery to streams avoided or minimized.” I would encourage limited use of mechanized equipment in the AMZ when it is utilized for riparian restoration efforts. Mini-excavators with “low ground pressure” tracks have little negative effect and can work very well in sensitive or soft terrain.

The draft EA also states, “While all perennial and intermittent streams in the Sawbuck project are eligible, initial restoration will prioritize Nichols Creek, Horsethief Creek/McIntosh Fen, Rochford Cemetery Fen, Lessering Draw, Dutchman Creek, Heely Creek, Long Draw and Crooked Creek.” How and what metrics were used to identify these particular streams?

*Wildlife*

The Phase II Amendment of the Long-Range Management Plan lists beaver as a management indicator species. The *2023 Beaver Food Cache Survey* (which was not mentioned or cited in the document) conducted by SD GF&P and the Black Hills NF located16 food caches within the administrative boundaries of the Forest. Of these, it appears that perhaps 3 of the food caches were located within the project boundary. As beaver are a keystone species, offering nearly unlimited ecosystem benefits and services, and are identified as a MIS for the Forest, more emphasis should be placed on riparian and habitat enhancement for these animals.

The draft EA states: “Riparian and hardwood restoration treatments close to stream tributaries will benefit beaver.” Again, how many miles, acres, or percentage of the project area would need to be treated to have meaningful impact?

Under Determination of Effects it states that it is not measurable for Beaver? Utah State University offers the Beaver Restoration Assessment Tool (BRAT), a planning tool intended to help researchers, restoration practitioners and resource managers assess the potential for beaver as a stream conservation and restoration agent over large regions and watersheds. At the heart of BRAT is a capacity model, which estimates the upper limit of dam density (dams per kilometer) for individual stream reaches throughout a drainage network. We focus on predicting where beavers could build dams and to what extent (as opposed to the more general case of where beaver could make a living), because it is the dam building activity they do as ecosystem engineers, which we are typically most interested in. The BRAT tool offers the best available science and methods and should be utilized.

The draft EA should include analysis of beaver re-introduction, especially to areas where habitat and riparian enhancement occur.

Increased beaver populations should be a primary goal of this project and for the Black Hills National Forest. They offer ecosystem services that will offer resilience that our Forest and landscape needed in the decades to come.

The Sawbuck project has the opportunity to be a new standard for the Black Hills, where a wholistic approach to watershed management occurs. Historically, the only hard targets for projects have been wood fiber. The Black Hills National Forest must move in a direction of outcome-based metrics with more emphasis on ecosystem function rather than just wood fiber. Utilization of new tools or concepts

such as IFTDSS, PODs or the BRAT tool should occur. How many acres or miles or percent of area should be implemented in order to see meaningful results on the land? If our only metric is board-feet, the Forest is doing a disservice to the people and land the USFS is charged with managing.

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