WYOMING GAME AND FISH DEPARTMENT
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WER 14791.01
United States Forest Service
Black Hills National Forest
Bearlodge Ranger District
North Sand Forest Management Project
Crook County

Elizabeth Krueger
Bearlodge Ranger District Resource Planner
P.O. Box 680
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Dear Ms. Krueger,

The staff of the Wyoming Game and Fish Department (Department) has reviewed the proposed North Sand Forest Management Project in Crook County. The Department is statutorily charged with managing and protecting all Wyoming wildlife (W.S. 23-1-103). Pursuant to our mission, we offer the following comments for your consideration.

The North Sand Forest Management Project area consists of 11,062 acres of National Forest lands at the north end of the Wyoming Black Hills in Crook County. The project area includes lower Grand Canyon/Sand Creek, Dugout Gulch, and Boundary Gulch and is characterized by plateaus separated by rugged canyons. Cliffs, Rock outcrops, and steep slopes are common. Streams flow on the surface in some drainages and sink below ground where limestone bedrock is present. The project area overlaps the distribution of approximately 76 Wyoming Species of Greatest Conservation Need and delineated crucial winter range for mule deer.

Terrestrial Habitat Recommendations:

The Department supports maintaining a mosaic of timber stand types and distribution across the Black Hills National Forest (BHNF). Ensuring viability for the variety of wildlife species occurring on the BHNF necessitates the creation and maintenance of a diversity of structural and stocking conditions of ponderosa pine, and maintaining their proximity to each other and other habitat types. This can be accomplished in conjunction with treatments designed to augment wildfire protection, control and diminish insect infestations, and enhance timber production. Planning requires careful consideration of treatment design, implementation measures, and post-

logging activities to ensure timber management goals are achieved while wide ranging, monotypic silvicultural treatments and undesirable impacts to aquatic and terrestrial habitats are avoided. As such, the Department recommends the following:

- Provide more detailed descriptions of thinning prescriptions to be implemented in a stand-by-stand manner with consideration given to creating a diversity of densities between stands and patches. As currently proposed, thinning activities may result in fairly monotypic stands of pine with regards to spacing, albeit with an irregular arrangement of trees. Such conditions, depending on scale, may reduce species diversity and viability.

- Treatments should yield an irregular shaped mosaic of stand densities where possible. As a rule of thumb, stand or patch sizes of approximately 0.2 to 0.5 acres and polygons with linear widths of about 50 meters represent minimum effective patch sizes for most wildlife species. Clear cut openings and thinly stocked patches (less than 60 ft^2/acre) can provide excellent foraging areas for ungulates and other species. These more open areas should be:

    - At least 0.5 acres in size.
    - Located within 100 meters of dense pine stands (100 ft^2/acre, or at least 55% canopy cover).
    - Unbounded and unbisected by roads if possible, with roads buffered by at least 200 meters, but preferably 400 meters. The buffer zone should consist of moderate to dense timber stands (greater than about 85 ft^2/acre) to provide screening from the road.

- Changes in fire regimes to hotter, more frequent fires can negatively impact wildlife and their habitats. In locations where wildfire control is an issue, open stands (less than 70 ft^2/acre) of pine that foster understory growth of more fire resistant hardwoods should be encouraged.

- Deciduous trees and shrubs in mesic habitat provide valuable and relatively limited habitat within the ponderosa pine community. Open pine stands (less than 70 ft^2/acre) should be created in more mesic locations to encourage understory growth of deciduous trees and shrubs.

- Thinning and logging slash should be chipped and spread, or piled and burned. Burned piles should spread, dragged or disked, and planted with seed mixes designed to benefit wildlife by providing perennial food sources or cover. Leaving smaller slash piles (less than eight foot diameter) of untreated slash in some areas can be beneficial for creating foraging locations along with hiding, denning and nesting cover for a variety mammals, reptiles, amphibians, and birds. If slash piles are eventually burned, reseeding following burning is recommended to control weeds and provide additional forage for wildlife.

- Managers concerned with sustaining and increasing avian diversity in the Black Hills should maintain within-stand and between-stand structural diversity to provide habitat needs of birds during both the breeding season and winter. Thinning projects should leave at least 1 or 2 large snags per acre, and most snags less than 6 inches diameter at breast height should be retained, as theses provide foraging sites for cavity-nesting birds.

- In areas with wild turkeys, stand densities of 60-70 ft^2/acre are appropriate where spring to fall wild turkey use is present. In areas with wintering wild turkeys, ponderosa pine stands should be managed for a basal area of at least 85 ft^2/acre. Turkey roost habitat typically requires stands with a basal area of least 100 ft^2/acre.

- Removing pine overstory augments a faster rate of conversion to dense bur oak shrub cover leading to an overall decrease in plant diversity. Bur oak occurs within the project area in both the problematic dense shrub form and in the desirable tree form. As such, the Department recommends:

    - Developing site specific bur oak treatment as part of the planning process.
    - Consider leaving tree form bur oak understory intact in within pine stands.

- At lower elevations, spring burns may be preferred over fall burns as they produce "cooler" fires resulting in a mosaic of treated and untreated areas. Soil moisture is more available in the spring resulting in quicker plant re-growth. Spring burns should be timed to allow for sufficient re-growth prior to the songbird nesting season. The Department suggests surveying areas for raptor nests prior to burning, as owls and raptors nest early in the season and nest failures may result from spring burns.

- Burning decadent aspen stands, if present in the project area, is recommended to encourage sprouting and restore stand vigor.

Species of Greatest Conservation Need (SGCN)

- *Northern Long-eared Bat* – As identified in the proposal, there may be overlap with habitat for the northern long-eared bat, a Species of Greatest Conservation Need and federally listed endangered species. The Department supports the implementation of U.S. Fish and Wildlife Service recommendations for the protection of this species.

- *Migratory Bird SGCN* – The Department supports the implementation of U.S. Fish and Wildlife Service recommendations for the protections of migratory bird SGCN, including raptors.

Control Noxious Weeds and Other Invasive Plants
We support the commitment to minimize establishment and spread of non-native invasive plants and to suppress infestations which may follow proposed project activities. Northeast Wyoming is at high risk for the introduction of medusahead and ventenata. Medusahead has been reported in Sheridan County and ventenata has been reported in 5 Wyoming counties including neighboring Campbell County. The impact of these annual invasive grasses to wildlife habitat are severe. Preventing introduction by cleaning vehicles and equipment prior to reaching work sites to minimize the potential for transporting seeds.

Aquatic Habitat Recommendations:
To minimize impacts to the aquatic resources, we recommend the most current information found in the Wyoming Forestry Best Management Practices and Forestry BMPs, be utilized. Consultation with Paul Mavrakis, Sheridan Regional Fisheries Supervisor, at 307-675-5478 is encouraged if avoidance of specific aquatic issues is in question.

Thank you for the opportunity to comment. If you have any questions or concerns please contact Chris Henkel, Habitat Protection Biologist, at 307-777-2533.

Sincerely,

Will Schultz
Habitat Protection Supervisor

WS/ch/kgb

cc: U.S. Fish and Wildlife Service
Chris Wichmann, Wyoming Department of Agriculture