Comments from Beth Burkhart (27April2024 BBurkhart)

Thank you for considering these comments:

The North Sand Vegetation Management Project should not proceed as described in the project proposal for ecological and ethical reasons. The ecological effects are not adequately expressed or addressed. The project area includes some of the most botanically and ecologically important lands in Black Hill National Forest. It is part of a roughly 15-mile by 15-mile area in the northern Black Hills NF where there are 4 designated 3.1 Management Area Botanical Areas (BA) (Dugout Gulch BA, Bear/Beaver Gluches BA, Higgins Gulch BA and Upper Sand Creek BA). The area also includes Sand Creek Roadless Area. All the designations in force today show recognition by Black Hills NF that there are unique botanical, hydrological and other values throughout the project area and its broader landscape. Given current scientific discussion of climate refugia and wildfire refugia, it is also probable that the northern Black Hills north-facing landscapes qualify as both and are worthy of appropriate management.

The NSVMP project description doesn't explain how the project will maintain, restore or enhance ecological values in Dugout Gulch BA or the larger landscape it is a part of. No plan for monitoring is provided or described. The NSVMP carves out one 3.1 Botanical Area (Dugout Gulch BA) to include in the project area. It is ecologically impossible to discuss impacts caused by the projects' proposed volume and intensity of disturbances to just one part of the larger sensitive region it is connected to. It is also ethically irresponsible to split up the larger landscape of importance into piecemealed analysis of effects.

Please provide the public with the Botany Specialist Report for NSVMP so I can understand how the project conserves and protects the project area. When and where were comprehensive surveys for plants last conducted in the project area? Also, please provide the Dugout Gulch Botanical Area Management Strategy. Black Hills NF has been managing Dugout Gulch BA for more than 20 years. This seems to be plenty of time to have moved on from the Dugout Gulch Suitability Report from the 1990's supporting BA designation to further clarify and prioritize management. Likewise, please provide the Hydrologist Specialist Report. I have observed the water resources of the area, especially the stream in Dugout Gulch BA, sustain degradation from livestock (note: livestock are allowed in Dugout Gulch only for passing through during pasture changes. However, over the years, I have observed and contacted Bearlodge RD about impacts beyond what can be attributed to that use). How will livestock management interface with the NSVMP? The circle of vegetation management certainly includes impacts by thousand-pound animals who will have different accesses and impacts to plants, soils and water following timber activity and prescribed fire in the project area.

The project description doesn't disclose all the impacts from actions described in the project to the boreal, disjunct vegetation and ecology of the area. I would like to know what plant and animal monitoring has been completed in the last decades to provide a picture of what vegetation now exists and how it has already been changed by climate warming in the Black Hills.
It is important to answer - how will locations of rare plant species and areas of high potential for rare plants be conserved and protected going forward by this project?

Please also share with the public the project's climate impact analysis. NSVMP report has no discussion of climate and project impacts. USDA Forest Service recently hosted a webinar: Science for Managers Webinar – Defining and Identifying Forest Refugia and Implications for Future Resiliency. Climate considerations are not vague speculations anymore – we are living them, especially in vulnerable places like northern Black Hills boreal refugia. The north-trending drainages in this part of the Black Hills harbor boreal plant species and communities in a refuge situation, stranded as they were in cool, moist places when the glaciers retreated north thousands of years ago. The understory and ground cover of these communities are extremely important to their natural function (see more below).

The NSVMP description provides no science in forms of research or monitoring to support any conclusion that the project will maintain, restore or enhance the unique components and character of the area. I am unaware of the current condition of rare plant species and plant species of concern in Dugout Gulch BA or greater NSVMP area, given the last published Black Hills NF Botany Monitoring Report was released over 10 years ago. Before that, presence/absence persistence monitoring had been conducted and reported to the public. It is unknown if plant populations are stable, decreasing or increasing. There is special concern now because the cool, moist habitats of Dugout Gulch BA and other BAs in the vicinity are highly vulnerable to environmental warming.

A particular concern I have about NSVMP is the huge opening it will create for invasive species in a place where their impacts may be irreversible. Both new invasive species will be introduced and existing ones will spread and intensify. Dugout Gulch BA may already have the worst infestation of buckthorn (*Rhamnus cathartica*) in the Black Hills. Despite some treatments by the Bearlodge District (even quite intense at times), attention has not been consistent. As a result, buckthorn continues to increase in ground cover and is spreading south in the drainage. Birds spreading seeds and plants sprouting are powerful vectors. NSVMP description doesn't give any confidence that anything other than a full explosion of invasive species will be released by project activities. In the Black Hills Resilient Landscapes Project, Black Hills NF disclosed in its project descriptions that it would introduce and spread invasive species beyond its ability to control. Implementing a project knowing it will have an overall negative ecological effect is not what I and other public expect from Black Hills NF. For a project like NSVMP, it is time to do something different and defensible – only implement those activities when and where Black Hills NF can manage the increased invasive species load. This unique area of the northern Black Hills deserves no less.

Background:
The project area for the NSVMP is best summarized as being part of one of the most unique and important of all Black Hills National Forest landscapes. The Black Hills are well-recognized botanically and ecologically as a crossroads of species. It is the farthest north some southern species are found; farthest east and west for other species. However, the Black Hills' characterization as a boreal refuge for disjunct species (that is, harboring sub-arctic species at their farthest southern limit which are not contiguous with the majority of their populations) is most unusual and important to conserve and protect.

North-facing drainages coming off the northern flank of Black Hills provide habitat that supports boreal plant species and communities whose closest known occurrences/populations are in Canada or farther north. When glaciers covered western South Dakota area, the vegetation was continuous from east to west and characteristic of the climatic zone south of the Arctic. It was a cold temperate region dominated by forests of birch, aspen and conifers, and included boreal shrubs, grasses and forbs in the understory. As the climate warmed and glaciers receded, boreal species could only survive in places where factors like topography allowed boreal conditions to persist. The north-facing drainages of the Black Hills are such refuge places.

Black Hills NF has made major recognitions of the values of the boreal disjunct species and habitats by designating Management Area 3.1 Botanical Areas in the current Forest Land and Resource Management Plan in Dugout Gulch and other north-facing drainages. The Plan designates 8 total Botanical Areas – no less than 4 of them are in northern Black Hills north-facing drainages (Upper Sand Creek BA, Dugout Gulch BA, Bear/Beaver Gulches BA and Higgins Gulch BA). The remaining 4 are scattered in the central Black Hills. All 8 Botanical Areas comprise 7,348 acres which is less than 1 percent of Black Hills NF. The Objectives and Standards required of Botanical Area management make it clear that conservation and protection of botanical values for which the areas were designated are the highest priority for management.