

APPENDIX D

Summary of Botany and Wildlife Biological Assessment/Biological Evaluation

INTRODUCTION

This is a summary of the South Project Biological Assessment/Biological Evaluations (BA/BEs), and is a review and analysis of actions proposed in the South Draft Environmental Impact Statement (DEIS). The full BA/BEs are in the South project file. The purpose of a BA/BE is to determine how the proposed action and alternatives to the proposed action will affect federally listed species or sensitive species listed by the Rocky Mountain Region (FSM 2670, R2 2600-94-2). The South BA/BEs are prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act of 1973 (19 U.S.C. 1536 (c)), and follow standards established in Forest Service Manual direction (2672.42) and the Code of Federal Regulations (50 CFR S402). The South BA/BEs tier directly to the EIS for the revised Black Hills National Forest Land and Resource Management Plan (Forest Plan) as amended, the BA/BE completed for the Forest Plan revision, and the BA/BE prepared for the Phase II Amendment (USDA Forest Service, 2006).

DESCRIPTION OF PROPOSAL

The purpose of and need for action in the South project area is to reduce the risk of and effects from large-scale wildfires on the At-Risk Communities (ARC) of Custer, Pringle and Argyle, South Dakota while providing for wildlife habitat needs, reducing risks of mountain pine beetle infestation, providing a sustainable supply of commercial timber, and providing for management and public access needs.

The South project area covers approximately 52,081 acres in the Upper and Lower Pleasant Valley watersheds approximately three miles southwest of the town of Custer in Custer County, South Dakota. National Forest land comprises 43,044 acres, State of South Dakota owns 1,197 acres and 7,840 acres within the South project boundary are privately-owned. The major arterial roads which access the project area include National Forest System Roads (NFSR) 715, 288, 307, 315, 273, 287, 292, 309, 402, 275 and US Highway 16.

The following is a brief description of each of the action alternatives:

Alternative 2 – Proposed Action: This alternative was developed to meet the Purpose and Need for Action. This alternative represents the Interdisciplinary Team's (planning team) recommendations prior to public scoping. This alternative proposes commercial and non-commercial vegetation treatments and management of system and non-system roads on National Forest lands.

Alternative 3: This alternative addresses the key issues identified during scoping: 1) use of fire as a restoration management tool within Management Area 5.1A; 2) wildlife habitat enhancement (with a side-benefit of reduction of fuels) within sites where storm-damaged trees are abundant; 3) big-game cover and security; 4) and susceptibility of residual timber stands to wind damage.

The elements of this alternative which differ from Alternative 2 (Proposed Action) are: 1) applying prescribed (Rx) fire within Management Area 5.1A to meet the restoration objective; 2) increasing Improvement Cutting in deferred sites by 2,354 acres to enhance wildlife habitat and reduce the likelihood of burning sites with dense pine in a wildfire event; 3) deferring vegetation treatment of selected pine sites near State of South Dakota property to enhance big-game cover; closing roads near the same property to enhance big-game security; and 4) increasing the basal area of residual stands from 40BA to 60BA to reduce the potential for wind damage in residual stands.

PRE-FIELD REVIEW AND RECONNAISSANCE

Botany

A list of Federally endangered, threatened, and proposed species has been provided by U.S. Fish and Wildlife Service via their South Dakota Field Office internet website (<http://southdakotafieldoffice.fws.gov/endsppbycounty.htm>), last updated on December 18, 2007. **No federally listed or proposed plant species occur** on the Black Hills National Forest.

The Region 2 Forest Service sensitive species listed was updated by the Regional Forester on June 8, 2007. (USDA Forest Service 2007) Appendix A provides a list of current R2 sensitive plant species found within the Black Hills National Forest.

A prefield review of Region 2 sensitive plant species and potential habitat was completed using existing district data; communication with forest personnel; and the BA/BEs for the 1996 Black Hills National Forest Land and Resource Management Plan (LRMP), the 2001 Phase 1 Amendment to the Forest Plan and the 2005 Phase II Amendment to the Revised Forest Plan.

All R2 sensitive plant species potentially occurring in the Black Hills National Forest were considered in the evaluation. Based on the prefield review, habitat may exist in the South Analysis Area for two R2 sensitive species. All other species were dropped from the analysis of effects portion of this document due to the lack of suitable habitat and therefore impacts to those species.

Botanical surveys were conducted in 2004, 2005, 2006 and 2007 to collect information related to plant communities, assess sensitive species habitat and identify locations of target plant species (ie - sensitive species, state-listed species and species of local concern). Hillshade, a GIS model which estimates high probability sensitive plant habitat based on the amount of shade, and therefore moisture, was used to help determine survey areas within the analysis area. Additional areas surveyed included meadows underlain with a limestone-derived soil. The survey data has been incorporated into the Black Hills National Forest Plant Database.

No R2 sensitive species were found to occur in the project area. A review of existing data indicated that no R2 sensitive plant species have been found in the area in the past.

Wildlife

The pre-field review of Region 2 Sensitive Species and Federally Endangered and Threatened and Proposed species was completed using survey results, Forest records (FAUNA database), literature reviews, RMBO monitoring records, and the South Dakota Breeding Bird Survey records (Peterson 1995), the Land Snail Survey Report (Frest, 1991-2001). A field reconnaissance of the South Project Area was started in July, 2006 and completed in the September, 2007.

DETERMINATION OF EFFECTS

Botany

None of the known occurrences of *Botrychium campestre* on the Black Hills National Forest are located within this analysis area and none will be disturbed by activities associated with this project. While the full extent of the distribution of *B. campestre* is currently unknown, the appearance of aboveground sporophytes at the confirmed sites is indicative of viable populations with extensive supporting underground biomass (including mycorrhizae). Therefore, while loss of unknown individuals may occur in this project area, the viable populations at the known occurrences will not be affected. Based on the information that is available, a determination of **“May adversely impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend toward federal listing or a loss of species viability range-wide”** is made for *B. campestre* relative to implementation of Alternatives 1, 2 or 3.

The confirmed occurrences of *Botrychium lineare* on the Black Hills National Forest are not located within this analysis area and will not be disturbed by activities associated with this project. While the full extent of the distribution of *B. lineare* is currently unknown, the appearance of aboveground sporophytes at the known sites is indicative of viable populations with extensive supporting underground biomass (including mycorrhizae) (Farrar 2004) Therefore, while loss of unknown individuals may occur in this project area, the viable population at the known occurrences will not be affected. Based on the information that is available, a determination of **“May adversely impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend toward federal listing or a loss of species viability range-wide”** is made for *B. lineare* relative to implementation of Alternatives 1, 2 or 3.

SCIENTIFIC NAME (COMMON NAME)	ALT 1	ALT 2	ALT 3
<i>Botrychium campestre</i> (lowa moonwort)	"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend toward federal listing or a loss of species viability range-wide"	"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend toward federal listing or a loss of species viability range-wide"	"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend toward federal listing or a loss of species viability range-wide"
<i>Botrychium lineare</i> (slender moonwort)	"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend toward federal listing or a loss of species viability range-wide"	"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend toward federal listing or a loss of species viability range-wide"	"May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend toward federal listing or a loss of species viability range-wide"

Wildlife

A list of endangered, threatened and proposed species has been provided by the U.S. Fish and Wildlife Service (USFWS), South Dakota State Office, and last verified on January 10, 2008 (USFWS 2008a). The South Dakota State Office is the primary center for all of the Black Hills, including Wyoming. The USFWS lists the following endangered, threatened and proposed species for the Black Hills (Custer County, South Dakota): black-footed ferret (*Mustela nigripes*). The bald eagle was de-listed effective August 8, 2007. The bald eagle continues to be protected under the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act.

The current sensitive species list for the Rocky Mountain Region (R2) was published as Regional supplement 2672.11, effective June 8, 2007. In accordance with Regional policy, upon de-listing the bald eagle is automatically given sensitive species status for a period of at least 5 years to ensure recovery of the species is maintained over that period (R2 Supplement, FSM 2672.11 (6)). The sensitive species list specific for the Black Hills National Forest can be found on the Rocky Mountain Region (R2) threatened, endangered and sensitive species home page (USDA, Forest Service 2007). There are 24 species on the Region 2 sensitive species list that could be present in the Black Hills. Although according to Isaak et al. 2003 and the South Dakota Department of Game, Fish and Parks, no Region 2 sensitive fish have been collected in surveys conducted within the South Project Area.

The pre-field review of Region 2 Sensitive Species and Federally Endangered and Threatened and Proposed species was completed using survey results, Forest records (FAUNA database), literature reviews, RMBO monitoring records, and the South Dakota Breeding Bird Survey records (Peterson 1995), the Land Snail Survey Report (Frest, 1991-2001).

SOUTH

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Species	Status ¹	Species Present ²	Habitat Present/ Analysis Provided ³	Habitat Description/Rationale
Black-footed ferret (<i>Mustela nigripes</i>)	E	NO	YES	Large prairie dog colonies in short-grass prairie (USFWS 2004b)
Fringed Myotis (<i>Myotis thysanodes</i>)	S	YES	YES	Forages on insects in a variety of habitats including grasslands and forested areas. Roosts in a variety of structures including caves, mines, and buildings (Schmidt 2003a).
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	S	YES	YES	Forages on insects in a variety of habitats including forested and wet areas. Roosts in a variety of structures including caves, mines, and buildings (Schmidt 2003b).
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	S	YES	YES	Short-grass and mixed-grass prairies. (USFWS 2004c). A small colony exists within the project area.
Rocky Mt. bighorn sheep (<i>Ovis canadensis canadensis</i>)	S	NO	NO	Maintain vegetative openness (grasslands, rock outcrops, burn areas and clearcuts) for foraging. Rugged terrain needed for escape cover (Beecham, et al. 2007). Existing herds in the Black Hills are located in Custer State Park, in the Spring Creek area (Mystic Dist.), and in the Elk Mountain range. <i>Rationale</i> -This species is not known to occur in the South project area. And timber harvest would result in improved habitat conditions for this species.
American marten (<i>Martes americana</i>)	S	NO	NO	Spruce forests with complex near-ground structure, extending into Adjacent ponderosa pine stands (Buskirk 2002). <i>Rationale</i> -There is no spruce habitat in the South project area.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	S	YES	YES	Winter resident in the Black Hills and spring/fall migrant. Usually found near unfrozen water or carrion in winter (Tallman et al. 2002).
Northern goshawk (<i>Accipiter gentilis</i>)	S	YES	YES	Forages in a variety of forested areas and small openings; nests primarily in dense mature conifer forests (Erickson 1987).
American peregrine falcon (<i>Falco peregrinus anatum</i>)	S	NO	NO	Tall cliffs in open areas near water (Johnsgard 1990). <i>Rationale</i> -This species is not known to occur. And there are no 'tall' cliffs and open water in the South project area.
Northern harrier (<i>Circus cyaneus</i>)	S	NO	NO	Prairies, open fields and marshes (Tallman et al. 2002). <i>Rationale</i> -This species is not known to occur. Preferred habitat lacking.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	S	NO	NO	Low elevation riparian areas and woodlands characterized with cottonwood-willow or bur oak (Panjabi 2003). <i>Rationale</i> -This species is not known to occur. Preferred habitat lacking.
Burrowing owl (<i>Athene cunicularia</i>)	S	YES	YES	Dry grasslands and pastures, usually associated with prairie dogs or ground squirrels (McDonald, et al. 2004).
Flammulated owl (<i>Otus flammeolus</i>)	S	NO	YES	Open ponderosa pine forests (McCallum 1994).
Lewis' woodpecker (<i>Melanerpes lewis</i>)	S	NO	NO	Open burned areas with large snags; oak and cottonwood forests (Anderson 2002, Panjabi 2003, Abele 2004). <i>Rationale</i> - while presence is known in portions of the Jasper fire area (adjacent to project), species presence and preferred habitat conditions are not known or suspected in the South project area.
Black-backed woodpecker (<i>Picoides arcticus</i>)	S	YES	YES	Burned areas with a high density of pre-burn snags; dense and/or mature forests with a high snag density (Anderson 2002, Panjabi 2003).
American three-toed woodpecker (<i>Picoides dorsalis</i>)	S	NO	NO	Mature spruce forests, burned areas (Panjabi 2003, Wiggins 2004). <i>Rationale</i> - Species presence not suspected. Preferred habitat (spruce) not present in project area.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	S	NO	NO	Open country with scattered, low deciduous thickets (Tallman et al. 2002). <i>Rationale</i> - Presence not suspected. Preferred habitat lacking.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	S	YES	YES	Found almost exclusively in native mixed-grass prairies (Panjabi 2003, Slater 2004). RMBO (2005) found the species in the extreme SW portion of the project area. <i>Rationale</i> - Project affects ponderosa pine stands and not preferred prairie grassland habitat.
Long-billed Curlew (<i>Numenius americanus</i>)	S	YES	NO	Short and mixed grass prairies and is referred to as an uncommon, summer resident but not known to breed in the Black Hills. RMBO observed this species in 2006 in the southern Black Hills in proximity to the southern edge of the South project area (Hutton, et al. 2006). <i>Rationale</i> : while this species may be occasionally present within the vicinity of the project area, it is a grassland species and is not expected to be adversely affected by timber management activities.

Species	Status ¹	Species Present ²	Habitat Present/ Analysis Provided ³	Habitat Description/Rationale
Northern leopard frog (<i>Rana pipiens</i>)	S	NO	NO	Riparian and wetland areas for tadpoles, sub-adults, and breeding adults; upland habitats for foraging adults (Smith 2003). <i>Rationale</i> - Presence not suspected. Lack of habitat
Black Hills redbelly snake (<i>Storeria occipitomaculata pahasapae</i>)	S	NO	YES	Wet meadows, woodlands, and forest-meadow edge habitat in the Black Hills (Smith and Stephens 2003).
Lake chub (<i>Couesius plumbeus</i>)	S	NO	NO	Streams or lakes with clear, cool water and clean cobble/gravel substrate (Isaak et al. 2003). <i>Rationale</i> - No habitat (S.Hirtzel, 2006).
Finescale dace (<i>Phoxinus neogaeus</i>)	S	NO	NO	Small lakes and cool, boggy environments associated with springs or beaver dams (Isaak et al. 2003). <i>Rationale</i> - No habitat (S.Hirtzel, 2006).
Mountain sucker (<i>Catostomus platyrhynchus</i>)	S	NO	NO	Large rivers, lakes, reservoirs, prairie streams but most often in cool, clear, moderately swift mountain streams with mud, cobble, or boulder substrate (Isaak et al. 2003). <i>Rationale</i> - No habitat (S.Hirtzel, 2006).
Cooper's mountain snail (<i>Oreohelix strigosa cooperi</i>)	S	NO	NO	Lowland wooded or riparian-spruce areas on limestone soils (Frest and Johannes 2002, Anderson 2005). <i>Rationale</i> - Presence not found during surveys. Lack of preferred habitat.
Regal fritillary butterfly (<i>Speyeria idalia</i>)	S	NO	NO	Tallgrass prairie and extensive grasslands with violets (Royer and Marrone 1992). Presence not suspected in project area, however species was found in Wind Cave in 2006 (Marrone, 2006).

¹E = Endangered, T = Threatened, P = Proposed, S = Sensitive, XN= Experimental Population

²Confirmed records of species in project area or vicinity.

³Suitable habitat known or suspected to occur. Species not present or with no preferred habitat in the project area will not be further analyzed in this document because they would not be expected to be affected by the proposed vegetation management treatments, or the associated activities.

Determinations Summary - Fauna

Federally listed species-

The determination of **no effect** is made for the black-footed ferret.

Regionally listed sensitive species-

A determination of **may adversely impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability range-wide** is made for the following species: Townsend's big-eared bat, fringed Myotis, black-tailed prairie dog, northern goshawk, burrowing owl, flammulated owl, black-backed woodpecker, grasshopper sparrow, and Black Hills redbelly snake.

A determination of **no impact** is made for the following species: bald eagle, leopard frog, and regal fritillary.

All other R2 sensitive species have a **no impact** determination.