

APPENDIX D

Summary of Botany and Wildlife Biological Assessment/Biological Evaluation

INTRODUCTION

This is a summary of the Bugtown Gulch Mountain Pine Beetle and Fuels Project (Bugtown Gulch), Biological Assessment/Biological Evaluations (BA/BEs), which is a review and analysis of actions proposed in the Bugtown Gulch Draft Environmental Impact Statement (DEIS). The full BA/BEs are in the Bugtown Gulch 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 Bugtown Gulch 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 Bugtown Gulch BA/BEs tier directly to 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 I Amendment (USDA Forest Service, 2001).

DESCRIPTION OF PROPOSAL

The purpose and need for action in the Bugtown Gulch project is to reduce the potential for an existing mountain pine beetle epidemic to cause widespread mortality on National Forest and private lands and to reduce the risk of large-scale high intensity wildfires within the project area.

The Bugtown Gulch project area is located approximately 5 miles west of Custer, South Dakota within Custer County. The project area includes approximately 15,941 acres, 13,378 of which are National Forest System lands and 2,563 which are private lands. The Land and Resource Management Plan for the Black Hills National Forest (USDA Forest Service 1997) identifies the majority (90%) of the area as Management Area 5.1 (Resource Production Emphasis). A small portion of the area (10%) is within Management Area 5.4 (Big Game Winter Range). Several housing subdivisions occur within or adjacent to the project area. All proposed activities would occur on National Forest lands. There are several arterial roads which access the project area including, NFSR (National Forest System Road) 284, 287, 292 and 293.

The Bugtown Analysis Area has a diverse topography, ranging from broad plateaus with limestone rock outcrops in the north to deeply incised canyons in the south. *Picea glauca* (White spruce) is found along the major drainages, and on the north-facing slopes above the drainages, however *Pinus ponderosa* (Ponderosa pine) Woodland community types (Marriot and Faber-Langendoen 2000) dominate the majority of the area. Pockets of *Populus tremuloides* (Quaking aspen) and *Betula papyrifera* (Paper birch) are minor components throughout the analysis area.

There are two main *Pinus ponderosa* woodland community types present, *Pinus ponderosa/Juniperus communis* (Ponderosa pine/Common juniper) and *Pinus ponderosa/Pascopyrum smithii* (Ponderosa pine/Western wheatgrass) (Marriot and Faber-Langendoen 2000). Many of the *Pinus ponderosa/Juniperus communis* communities have a very strong graminoid component, which according to Marriot and Faber-Langendoen (2000) is not typical for this community type. In the northern portion of the analysis area limestone rock outcrops are common within the *Pinus ponderosa* community types.

The majority of the meadows in the analysis area are dominated by an introduced graminoid component, often *Poa pratensis* (Kentucky bluegrass) and/or *Phleum pratense* (Timothy). Recent studies have indicated that in general, the upland rangeland vegetation is in satisfactory range condition.

Picea glauca Alluvial Black Hills Forest (Marriot and Faber-Langendoen 2000) is present along portions of Vanderlehr and French Creeks. The well-shaded, northern slopes above these drainages commonly contain *Picea glauca* communities with intermingled *Betula papyrifera* (Paper birch).

The following is a brief description of each of the 2 action alternatives:

Alternative 2 – Proposed Action: The proposed action includes aggressive management strategies designed for suppression of the epidemic, prevention of further infestations, and salvage of the mountain pine beetle epidemic area. Sanitation harvesting is proposed as a suppression method to remove trees which have live beetle brood in them. This action would remove as many beetles as possible prior to flight, in an attempt to lessen the size and extent of the epidemic. Sanitation may occur for up to three consecutive years in any particular area to capture infested trees that have been missed or which became infested following harvest. Prevention methods include commercial thinning to reduce stand density thereby increasing tree vigor and reducing stand susceptibility to beetle attack. Salvage harvesting would remove dead trees which no longer have beetle brood in them. Other actions would include understory fuel treatments to reduce the future risk of large high intensity wildfires in the area. Due to the urgent nature of the project, it was decided that no new roads would be constructed and no road closures would be proposed. All treatments would utilize existing roads. All treatments would occur within ponderosa pine stands or aspen stands with a pine component. A project specific Forest Plan amendment regarding big game habitat effectiveness in management area 5.4 would be necessary to implement this alternative.

Alternative 3: This alternative was developed to address input from the public that the proposed action would result in little diversity on the landscape and that options to increase diversity should be considered. Another component of this alternative is that it would meet all Forest Plan direction and would not require a project specific Forest Plan amendment for Big Game habitat in management area 5.4 as in Alternative 2. To address these concerns and meet the purpose and need, all treatments are deferred in management area 5.4 (998 acres) as well as select stands (1,639 acres) in management area 5.1. Sites deferred in management area 5.1 are those considered to be somewhat less susceptible to mountain pine beetle, thus improving the potential for these stands to persist. However, all deferred sites would continue to have a high risk for mountain pine beetle susceptibility. Where deferred sites are adjacent to private land, 300 foot fuel breaks would be constructed.

PRE-FIELD REVIEW AND RECONNAISSANCE

Botany

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 both the 1996 Black Hills National Forest Land and Resource Management Plan and the Phase 1 Amendment to the 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 Bugtown Gulch Project Area for two R2 sensitive plant species. Species with habitat preferences differing from types present within the Bugtown Gulch Project Area were dropped from analysis of effects portion of this document.

No federally listed or proposed plant species occur on the Black Hills National Forest.

A botanical survey was conducted during October, November and December 2004. Due to the seasonality of the survey, the survey focused on identifying possible Region 2 (R2) sensitive species habitat, collecting information related to plant communities, and identifying locations of target plant species (ie – R2 sensitive species, state-listed species and species of local concern). The survey data has been incorporated into the Black Hills National Forest Plant Database (USDA Forest Service 2005).

Wildlife

A pre-field review for R2 sensitive species and federally endangered, threatened and proposed wildlife species was completed. This review included: District records, South Dakota Natural Heritage Program database, RMBO monitoring records, South Dakota Breeding Bird Survey records (Peterson 1995), Land Snail Survey Report (Frest, 1991-2001), and Black Hills bat survey records (SDGF&P Report 2003-05). Field surveys were conducted in the Fall/Winter of 2004 and throughout 2005.

DETERMINATION OF EFFECTS

Botany

Three Region 2 sensitive plant species have suitable habitat within the Bugtown Gulch project area. None of these species were located during field surveys or are known to have occurred in the project area. Determination of Effects, by Alternative, to R2 Sensitive Plant Species Having Suitable Habitat in the Bugtown Gulch Project Area is summarized in the following Table.

SCIENTIFIC NAME (COMMON NAME)	<i>Determination</i>		
	ALT 1	ALT 2	ALT 3
<i>Botrychium campestre</i> (Prairie 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”
<i>Botrychium multifidum</i> (Leathery grapefern)	“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

Based on pre-field review and reconnaissance, Federally listed and Region 2 Sensitive Species which may occur in the planning area are displayed in the following table. The status of each species is noted. The USFWS list (endangered, threatened and proposed species) for the Black Hills (Custer and Pennington Counties, South Dakota) only the **bald eagle** applies. Also noted in the table is whether each species, or their habitat is present in the Bugtown Gulch project area.

Species	Status ¹	Species Present ²	Habitat Present ³	Habitat Description
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	T	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).
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, snags, rock crevices, and buildings (Keinath 2004, 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. Very selective winter maternity roosts (caves/mines/ occasionally buildings). Roosts are very sensitive to disturbance. Individuals may roosts in a variety of sites including caves, mines, rock outcrops, and buildings (Schmidt 2003b, Pierson, et al. 1999).
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	S	NO	NO	Short-grass and mixed-grass prairies (USFWS 2004c).
American marten (<i>Martes americana</i>)	S	NO	YES	Spruce forests with complex near-ground structure, extending into Adjacent ponderosa pine stands (Fescke, 2003. Buskirk 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 (Reynolds et al. 1992, Erickson 1987).
American peregrine falcon (<i>Falco peregrinus anatum</i>)	S	NO	NO	Tall cliffs in open areas near water (Johnsgard 1990).
Northern harrier (<i>Circus cyaneus</i>)	S	NO	NO	Prairies, open fields and marshes (Tallman et al. 2002).
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).
Burrowing owl (<i>Athene cunicularia</i>)	S	NO	NO	Dry grasslands and pastures, usually associated with prairie dogs or ground squirrels (Tallman et al. 2002).
Flammulated owl (<i>Otus flammeolus</i>)	S	NO	YES	Open ponderosa pine forests (McCallum 1994).
Lewis' woodpecker (<i>Melanerpes lewis</i>)	S	NO	YES	Open burned areas with large snags; oak and cottonwood forests (Anderson 2002, Panjabi 2003).
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	YES	Mature spruce forests, burned areas (Panjabi 2003).
Loggerhead shrike (<i>Lanius ludovicianus</i>)	S	NO	NO	Open country with scattered, low deciduous thickets (Tallman et al. 2002).
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	S	NO	NO	Found almost exclusively in native mixed-grass prairies (Panjabi 2003).
Northern leopard frog (<i>Rana pipiens</i>)	S	NO	YES	Riparian and wetland areas for tadpoles, subadults, and breeding adults; upland habitats for foraging adults (Smith 2003).

Species	Status ¹	Species Present ²	Habitat Present ³	Habitat Description
Black Hills redbelly snake (<i>Storeria occipitomaculata pahasapae</i>)	S	YES	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).
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).
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).
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).
Regal fritillary butterfly (<i>Speyeria idalia</i>)	S	NO	NO	Tallgrass prairie and extensive grasslands with violets (Royer and Marrone 1992).

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

² Species known or suspected to be present in project area.

³ Suitable habitat known or suspected to occur in project area.

Where species presence is **not** known or suspected, **and** suitable habitat is **not** present or suspected no further analysis of that species is provided since the proposed project would have *no impact* and would not result in any potential for direct, indirect or cumulative effects.

Determinations Summary

Species for which habitat or presence is suspected or known were analyzed in detail and determinations made. The following table summarizes the determination for each of these wildlife species.

Species	Status ¹	Alternative 1	Alternative 2	Alternative 3
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	T	NE	NE	NE
Fringed Myotis (<i>Myotis thysanodes</i>)	S	MII	MII	MII
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	S	MII	MII	MII
American marten (<i>Martes americana</i>)	S	MII	MII	MII
Northern goshawk (<i>Accipiter gentilis</i>)	S	MII	MII	MII
Flammulated owl (<i>Otus flammeolus</i>)	S	MII	MII	MII
Lewis' woodpecker (<i>Melanerpes lewis</i>)	S	NI	MII	MII
Black-backed woodpecker (<i>Picoides arcticus</i>)	S	NI	MII	MII
American three-toed woodpecker (<i>Picoides dorsalis</i>)	S	NI	MII	MII

Species	Status¹	Alternative 1	Alternative 2	Alternative 3
Northern leopard frog (<i>Rana pipiens</i>)	S	NI	MII	MII
Black Hills redbelly snake (<i>Storeria occipitamaculata pahasapae</i>)	S	NI	MII	MII

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

NE = No Effect **NI** = No Impact **MII** = may may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend to federal listing.