

**APPENDIX D**

**BIOLOGICAL ASSESSMENT / BIOLOGICAL EVALUATION  
WILDLIFE, FISHERIES,  
AND  
BOTANY SUMMARIES**



## **APPENDIX D – SUMMARY OF BIOLOGICAL EVALUATIONS FOR WILDLIFE, FISHERIES, AND BOTANICAL RESOURCES**

This document is a synthesis for the Wildlife, Botanical and Fisheries Resources in the Mystic Range Project (MRP). The summary is an effort to reduce redundancy and improve reading ease while retaining important content. It is not intended to meet all the legal requirements and policies associated with the BE. The parent BE is contained in the Mystic Range Project administrative record.

The main purpose of a BE is to disclose, in detail, the potential effects of all alternatives to federally-listed and Forest Service sensitive species.<sup>1</sup> The BE also provides a “determination statement” to help decision-makers and other readers see how the project might affect the long-term persistence of a species. This summary document provides simplified effects disclosures and determination statements for all species relevant to the MRP, and provides the reader with some of the information sources used in the analyses.

### **Pre-Field Review and Field Reconnaissance**

Pre-field review and field reconnaissance are essential in determining which species could occur in a project area, and how they might be affected. Pre-field reviews were completed using past survey results, district records, literature reviews, on-line databases, and Forest Plan monitoring reports. Field visits were performed with intent to identify suitable and/or occupied habitat for sensitive species. These surveys were conducted by qualified biologists, including Forest Service employees and contractors. In addition to species-specific surveys, additional field visits to the Mystic Range Project (MRP) were conducted with the general intent of identifying habitat and potential issues for other status species. Data from all sources mentioned above were used to determine design criteria (see Appendix B) and effects relevant to the MRP.

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<sup>1</sup> Federally-listed species are those that have been designated by the US Fish and Wildlife Service as endangered or threatened (i.e., under the Endangered Species Act), including those that have been formally proposed for listing. Sensitive species are designated by the Regional Forester. Both categories imply rareness or sensitivity to management actions.

**Table D-1 Draft Summary of Effects to R2 Sensitive Wildlife and Fish Species.**

Summary of Effects to R2 Sensitive Wildlife and Fish Species<sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
<b>Mammals</b>					
Black-tailed prairie dog <i>Cynomys ludovicianus</i>	Short and mixed grass prairie with soils conducive to burrowing ( <i>Higgins et al. 2000</i> ).	Yes (habitat)	Alt. A	This species is less likely to colonize due to an increase in woody and taller vegetation due to a lack of grazing.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
			Alt. B & C	Livestock grazing is conducive for colonization and expansion due to shorter vegetation.	Beneficial impact
American marten <i>Martes americana</i>	Spruce forests with complex near-ground structure, extending into adjacent pine stands ( <i>Buskirk 2002</i> ). Corridor habitat includes conifer and deciduous riparian areas ( <i>Fecske 2003</i> ).	Yes (both)	Alt. A	Increase in deciduous riparian species would provide cover, habitat for prey species habitat. Increase in water tables would improve riparian habitat.	Beneficial impact
			Alt. B & C	Heavy grazing in riparian areas would reduce vegetative cover and reduce prey species. Decrease of water table would decrease riparian habitat potential.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Fringed myotis <i>Myotis thysanodes</i>	Roosts in caves and mines, on snags and rock faces; forages on insects in various habitats, including shrub lands, and forested areas ( <i>Schmidt and Anderson 2003</i> ).	Yes (both)	Alt. A	Increase standing water sources and increase prey habitat and availability.	Beneficial impact
			Alt. B & C	Decrease in prey habitat. Decrease in amount of standing water sources. Decline in roosting habitat due to prescribed burning and fence clearing.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Rocky Mountain bighorn sheep <i>Ovis canadensis canadensis</i>	Open habitats, such as grasslands, talus slopes, rocky outcrops but may use deciduous and conifer forest with openings ( <i>Beecham et. al. 2007</i> ).	Yes (both)	Alt. A	No competition for forage would increase carrying capacity of use areas. Increase in water tables would improve riparian habitat and provide water sources.	Beneficial impact
			Alt. B & C	Competition for forage, especially close to escape cover and lambing areas would reduce carrying capacity of use areas. Decrease of water table would decrease riparian	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause

Summary of Effects to R2 Sensitive Wildlife and Fish Species <sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
				habitat potential. Decrease in amount of standing water sources.	a trend toward federal listing.
Townsend's big-eared bat <i>Plecotus townsendii</i>	Roosts in caves and mines, occasionally buildings; forages on insects in various habitats including forested and wet areas ( <i>Schmidt 2003e</i> ).	Yes (both)	Alt. A	Increase standing water sources and increase prey habitat and availability.	Beneficial impact
			Alt. B & C	Decrease in prey habitat. Decrease in amount of standing water sources.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
<b>Birds</b>					
Burrowing owl <i>Athene cunicularia</i>	Short/mixed grass prairie, usually associated with ground squirrels or prairie dogs ( <i>Johnson and Anderson 2002, Tallman et al. 2002</i> ).	Yes (habitat)	Alt. A	This species is less likely to colonize due to an increase in woody and taller vegetation due to a lack of grazing.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
			Alt. B & C	Livestock grazing is conducive for colonization and expansion due to shorter vegetation. Structural improvements near burrows would increase predation rates (i.e., perches).	Beneficial impact
Northern goshawk <i>Accipiter gentilis</i>	Nests primarily in dense mature conifer forests; forages in a variety of forested areas and small openings ( <i>Kennedy 2003</i> ).	Yes (both)	Alt. A	Reduced alteration of nesting habitat and human disturbance.	No impact
			Alt. B & C	Increase habitat alteration and human disturbance of nesting habitat due to structural maintenance and fence line clearing.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Grasshopper sparrow <i>Ammodramus savannarum</i>	Grasslands of intermediate height with bare patches and moderately deep litter ( <i>Slater 2004, RMBO 2001-2009</i> ).	Yes (both)	Alt. A	Higher potential of loss of native grasslands due to an increase in woody vegetation and invasive plant species. Potential reduction in productivity and nutrient cycling in grasslands.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
			Alt. B & C	Loss of nests, eggs, and young due to trampling. Decline of nesting and foraging habitat due to over utilization in grasslands.	May adversely impact individuals, but not likely to result in a loss of viability in

Summary of Effects to R2 Sensitive Wildlife and Fish Species <sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
				Increase chance of predation. Potential increase in productivity and nutrient cycling in grasslands	the Planning Area, nor cause a trend toward federal listing
Ferruginous hawk <i>Buteo regalis</i>	Open grasslands, shrub-steppe, croplands, desert, and the periphery of western pinyon and juniper ( <i>Collins and Reynolds 2005</i> ).	Yes (habitat)	Alt. A	Increase nest site availability. Increase chance of predation at nest site. Decrease in foraging success. Decrease potential for nest abandonment due to human disturbance.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing
			Alt. B & C	Loss of nests, eggs, and young due to trampling. Reduced nest site availability. Potential increase in prey habitat and availability (moderate to light grazing). Increase in foraging success, especially in riparian areas. Increase potential for nest abandonment due to human disturbance.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Northern harrier <i>Circus cyaneus</i>	Open areas; prairies, wetlands or grasslands with tall dense vegetation and high residual cover; logged or burned woodlands ( <i>Slater and Rock 2005, Tallman et al. 2002</i> ).	Yes (both)	Alt. A	Increase in water table would increase riparian habitat potential. Increase in nesting habitat and prey habitat and availability.	Beneficial impact
			Alt. B & C	Loss of nests, eggs, and young due to trampling. Potential decrease of nesting habitat and increased predation due to over utilization. Lowering of water table would decrease riparian habitat potential. Decrease in prey habitat and availability.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Yellow-billed cuckoo <i>Coccyzus americanus</i> (Candidate: Western US DPS)	Low elevation riparian areas and cottonwood/willow or bur oak woodlands with dense shrub understory ( <i>Wiggins 2005b, RMBO 2001-2009</i> ).	Yes (habitat)	Alt. A	Less chance for nest disturbance and fragmentation of habitats. Potential increase in water tables that would increase riparian communities. Increase in cottonwood/oak communities and dense riparian shrub habitat. Less potential for habitat fragmentation in riparian shrub communities.	Beneficial impact

Summary of Effects to R2 Sensitive Wildlife and Fish Species<sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
			Alt. B & C	Loss of nests, eggs, and young due to trampling. Lowering of water table would decrease riparian habitat potential. Decline in cottonwood/oak communities and reduced dense riparian shrub component and increased habitat fragmentation due to grazing.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Olive-sided flycatcher <i>Contopus cooperi</i>	Generally found in coniferous or mixed coniferous forests, along forest edges and openings caused by disturbances (Kotliar, 2007).	Yes (both)	Alt. A	Increase in prey habitat and prey availability.	Beneficial impact
			Alt. B & C	Reduced prey habitat and prey availability.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
American peregrine falcon <i>Falco peregrinus anatum</i>	Open areas and woodland edges (Tallman et al. 2002); nests on rocky cliffs or buildings.	Yes (habitat)	Alt. A	Increase in prey habitat and prey availability. Decrease in foraging success.	Beneficial Impact
			Alt. B & C	Reduced prey habitat that may reduce prey availability. Increase in foraging success.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Bald eagle <i>Haliaeetus leucocephalus</i>	Usually found near open water or in areas with abundant carrion in winter (USDI Fish and Wildlife Service 2007a).	Yes (both)	Alt. A	Improved riparian communities, reducing potential sediment into lakes and streams. Increase aquatic prey availability and foraging success.	Beneficial impact
			Alt. B & C	Potential decrease in prey availability and foraging success due impaired riparian conditions that would affect water quality.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Loggerhead shrike <i>Lanius ludovicianus</i>	Open areas with scattered, low deciduous thickets, rare in higher	Yes (habitat)	Alt. A	Increase in potential shrub thickets and hardwoods used for nesting and foraging. Increase in prey habitat and availability.	Beneficial impact

Summary of Effects to R2 Sensitive Wildlife and Fish Species<sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
	elevations of the Black Hills ( <i>Wiggins 2005a, Tallman et al. 2002</i> ).		Alt. B & C	Loss of nests, eggs, and young due to trampling. Loss of suitable nesting and foraging habitat due to grazing. Decrease in prey habitat and availability.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Lewis's woodpecker <i>Melanerpes lewis</i>	Burned areas, open pine, oak, or cottonwood forests, with large snags for nesting ( <i>Abele et. al 2004, RMBO 2001-2009</i> ).	Yes (both)	Alt. A	Increase in cottonwood/oak communities, increasing nesting habitat. Increase in prey habitat and availability.	Beneficial Impact
			Alt. B & C	Decrease in cottonwood/oak habitat due to over utilization. Loss eggs, young and nesting habitat due to structural maintenance and fence line clearing. Decrease in prey habitat and availability.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Long-billed curlew <i>Numenius americanus</i>	Short and mixed-grass prairie habitat with flat to rolling topography. Found at lower elevations of the Black Hills ( <i>Sedgwick 2006, RMBO 2001-2009, USFWS 2009</i> ).	Yes (habitat)	Alt. A	This species is less likely to colonize due to an increase in woody and taller vegetation due to a lack of grazing. Increase in predation rate. Potential decrease in suitable nesting and foraging habitat due higher stubble heights.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
			Alt. B & C	Loss of nests, eggs and young due to trampling Livestock grazing is conducive for colonization and expansion due to shorter vegetation. Decrease in predation rates. Potential decrease in suitable nesting and foraging habitat due to over-utilization.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Flammulated owl <i>Otus flammeolus</i>	Open ponderosa pine forest, nests in cavities and large diameter snags ( <i>Hayward and Verner 1994</i> ).	Yes (habitat)	Alt. A	Increases prey habitat and availability.	No impact
			Alt. B & C	Potential to reduce prey habitat and availability. Potential decrease in nesting habitat due to prescribed burning, structural maintenance, and fence line clearing.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Black-backed woodpecker <i>Picoides arcticus</i>	Dense pine forests that are recently burned are in late successional or dense mature condition	Yes (both)	Alt. A	None	No impact
			Alt. B & C	Potential decrease in nesting habitat due to prescribed burning, structural maintenance, and fence line clearing.	May adversely impact individuals, but not likely to result in a loss of viability in

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	or where mountain pine beetle densities are high ( <i>Moren and Rumble 2002, RMBO 2001-2009</i> ).				the Planning Area, nor cause a trend toward federal listing.
American three-toed woodpecker <i>Picoides dorsalis</i>	Old-growth conifer forests with large diameter snags, burned areas and beetle infestation areas ( <i>Wiggins 2004, RMBO 2001-2009</i> ).	Yes (both)	Alt. A	None	No impact
			Alt. B & C	Potential decrease in nesting habitat due to prescribed burning, structural maintenance, and fence line clearing.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
<b>Reptiles and Amphibians</b>					
Northern leopard frog <i>Lithobates pipiens</i>	Riparian and wetland areas for tadpoles, subadults, and breeding adults; upland habitats for foraging adults ( <i>Smith 2003, Smith and Keinath 2007</i> ).	Yes (both)	Alt. A	Increase in breeding habitat by improved stream bank stability and reducing effects to water quality and riparian health. Increase in standing water sources. Increase in water tables that improve riparian communities.	Beneficial impact
			Alt. B & C	Decline of breeding ponds due to increased siltation, changes in pH and water temperature and reduced standing water sources. Decline of wetlands and riparian habitat due to over-utilization, trampling, and water developments. Decrease in water tables that decrease riparian communities.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Black Hills red-bellied snake <i>Storeria occipitomaculata pahasapae</i>	Moist habitats with well-developed ground litter such as wet meadows, woodlands, and forest-meadow edges ( <i>Smith and Stephens 2003</i> ).	Yes (both)	Alt. A	Increase breeding habitat by improving riparian vegetative conditions and improving prey habitat.	Beneficial impact
			Alt. B & C	Habitat loss and modification due to over utilization and developments within wetlands, springs, and seeps. Decrease in prey availability due to over-utilization of riparian areas.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.

Summary of Effects to R2 Sensitive Wildlife and Fish Species<sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
<b>Fish</b>					
Mountain sucker <i>Catostomus platyrhynchus</i>	Occurs most often in cool, clear mountain streams, with moderate stream flow velocities but have been observed elsewhere in large rivers, lakes and reservoirs ( <i>Isaak et al. 2003</i> ).	Yes (both)	Alt. A	Increase in water tables that would increase riparian communities. Increase in vegetative cover would improve water temperature and maintain stable stream banks. Decrease in sediments would improve spawning and forage availability.	Beneficial impact
			Alt. B & C	Decrease in spawning and prey habitat through increased sediments and poor water quality due to hoof action in riparian/stream habitat. Decrease in vegetative cover increases water temperature. Simple aquatic plant growth stimulated due to livestock waste and increase sunlight to stream.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Lake chub <i>Couesius plumbeus</i>	Cool, gravel-bottomed pools and runs of streams; rocky lake margins. Known only from Deerfield Lake ( <i>USDA Forest Service 2005a</i> ).	Yes (both)	Alt. A	Increase in water tables that improve riparian conditions, decreasing sediments transported through the stream network into Deerfield Lake.	Beneficial impact
			Alt. B & C	Over utilization of riparian habitats reduces riparian condition, lowering of water tables, and degradation of riparian/stream habitat would increase sediment transported through the stream network into Deerfield Lake.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
<b>Invertebrates</b>					
Ottoe skipper <i>Hesperia ottoe</i>	Restricted to undisturbed, mixed-grass	Yes (habitat)	Alt. A	Increase in nectar and larval host plants. Increases chances of over-winter survival.	Beneficial impact

Summary of Effects to R2 Sensitive Wildlife and Fish Species <sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
	to tall-grass prairie habitats with big bluestem, little bluestem and sideoats gramma. Found in Pennington, Lawrence, Fall River, and Custer Counties along the foothills of the Black Hills ( <i>Shelby 2005, Marrone 2005, 2007</i> ).		Alt. B & C	Loss of eggs and larvae due to trampling and grazing. Reduced availability of nectar resources, changes in vegetative structure, removal of larval host plants. Prescribed fire increases the chance of larval mortality. Overutilization would increase the chances of changing grassland communities and increase in invasive species.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Regal fritillary <i>Speyeria idalia</i>	Tall-grass or mixed-grass prairie with violets. Found in Pennington, Lawrence, Fall River, and Custer Counties, rare in higher elevations of the Black Hills ( <i>Shelby 2007, Marrone 2005, 2007</i> ).	Yes (both)	Alt. A	Decrease the potential for nectar and larval host plants (violets) availability due to a lack of light to moderate grazing. Increases chances of larval survival.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
			Alt. B & C	Loss of eggs and larvae due to trampling and grazing. Reduced availability of nectar resources, changes in vegetative structure, removal of larval host plants through over-utilization. Prescribed fire reduces larval survival. Overutilization would increase the chances of changing grassland and riparian communities and increase in invasive species.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.
Cooper's Rocky Mountainsnail <i>Oreohelix strigosa cooperi</i>	Occurs on limestone rock outcrops/cliffs at higher elevations with developed litter layer, moss, and downed woody material ( <i>Anderson 2005</i> ).	Yes (both)	Alt. A	No mortality caused by trampling. Canopy cover in mesic sites is not reduced, allowing expansion of colonies. Increase in mesic habitat by maintenance of canopy cover, reducing environmental conditions that would cause dry conditions (wind, sunlight). Improve riparian communities by increasing water tables.	Beneficial impact

Summary of Effects to R2 Sensitive Wildlife and Fish Species<sup>1</sup>.

Species Name <sup>2</sup>	Habitat Description	Species or Habitat Present	Alternatives	Effects Summary	Determination
			Alt. B & C	Mortality caused by trampling. Decrease in mesic habitat by reduction of canopy cover associated with changes in vegetation that would cause dry conditions (i.e., wind, sunlight) Decrease riparian communities by decreasing water tables and over utilization.	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.

<sup>1</sup>Indepth discussion of species found in respective specialist reports.

<sup>2</sup>Obtained from R2 Sensitive Species List (FSM 2600-2009-1)

## **Forest Service Sensitive Species – Plants**

The determination of effects for action alternatives (Alternatives B and C) on Region 2 sensitive species in this BA/BE summary were made as the result of the information gathered in the pre-field review, field reconnaissance, survey results, and effects analysis for all action alternatives. The basis for these determinations was potential habitat, distribution, and effects from proposed activities. The determination language is set forth in Forest Service Manual 2670.

Objectives, standards, and guidelines have been identified in the Forest Plan Phase II to conserve Region 2 sensitive species found on the Black Hills National Forest (USDA Forest Service 2005). This project will follow the objectives, standards, and guidelines that are applicable to those species and habitats found in the Mystic Range Project.

Botanical surveys were focused in areas of high probability habitat, but portions of low probability habitat in the project area were also surveyed. Survey areas were determined using a combination of resources including topographic maps, aerial photographs, field reconnaissance, and local knowledge. The list of target plant species has changed over the past fifteen years (the time span over which the surveys were performed), however many of the species have remained on the list. Surveys focused on locating target plant species but also provide general community descriptions and species lists from which basic conclusions can be drawn about the habitat. The 2005 to 2008 survey reports often include a determination of an area's potential to support target plant species. Survey intensities ranged from field check to complete, however most sites were surveyed with general or intuitive controlled survey intensity.

An effects analysis was completed for those plant species that could potentially be impacted by the proposed project. This analysis addresses federally designated endangered and threatened species, and Region 2 sensitive plant species which occur or which have potential habitat in the project area.

### **Federally Listed Plant Species**

The U.S. Fish and Wildlife Service (USFWS) website list for Threatened and Endangered species was accessed on June 30, 2009 for the state of South Dakota. As of this date, there were no threatened or endangered plant species known to occur within the State of South Dakota (USDI Fish & Wildlife Service 2009f & 2009e), nor were there any proposed or candidate plant species known to occur in South Dakota (USDI Fish & Wildlife Service 2009g & 2009h).

Subsequently, threatened, endangered, or proposed species do not need to be analyzed and are not mentioned in subsequent sections.

The narrowleaf grapefern (*Botrychium lineare*) was a candidate plant species but was officially removed from the candidate list by the U.S. Fish and Wildlife Service (USDI Fish & Wildlife 2007a). Candidate species are automatically placed on the Region 2 Forester's sensitive species list. The narrowleaf grapefern (*Botrychium lineare*) remains on the Region 2 sensitive plant list and is discussed under the Biological Evaluation for Region 2 sensitive species.

No further analysis is needed for species not known or suspected to occur in the project area.

Implementation of any of the three alternatives as described will not affect any threatened or endangered plant species or designated critical habitat. Endangered Species Act Section 7 Consultation is not required for this project.

## Region 2 Sensitive Plant Species

The Forest Service Manual defines sensitive species as those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidence by:

- Significant current or predicted downward trends in population numbers or density, or
- Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (Forest Service Manual 2670.5, 19).

The sensitive species list for the Rocky Mountain Region was published as a Regional Supplement (2600-2009-1) effective June 9, 2009. The list of sensitive species was verified by checking the Region 2 Threatened, Endangered and Sensitive Species Program website (USDA Forest Service 2009d). There are twelve plant species on the Forest Service Region 2 sensitive species list that are known to occur on the Black Hills National Forest. These species are the only ones considered in this analysis.

All Region 2 sensitive plant species confirmed to occur in the Black Hills National Forest were considered in the evaluation. Because of its size, habitat exists in the Mystic Range Project allotments for several Region 2 sensitive plant species. Species which do not occur and/or do not have potential habitat present within the Mystic Range Project were not analyzed.

Yellow lady slipper (*Cypripedium parviflorum*), sage willow (*Salix candida*), and autumn willow (*Salix serissima*) are the only Region 2 sensitive plant species confirmed to occur within the project area. Yellow lady's slipper is known from the Bald Horse Allotment and the sage and autumn willow are known from the Deerfield Allotment. Table B-2 summarizes Region 2 sensitive plant species having potential habitat within Mystic Range Project allotments.

With implementation of the Forest Plan Phase II Amendment and all of the standards and guidelines adopted therein, and project specific design criteria, 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 for the action alternatives:

Prairie moonwort	<i>Botrychium campestre</i>
Narrowleaf grapefern	<i>Botrychium lineare</i>
Foxtail sedge	<i>Carex alopecoidea</i>
Yellow lady's slipper	<i>Cypripedium parviflorum</i>
Trailing clubmoss	<i>Lycopodium complanatum</i>
Large round-leaf orchid	<i>Platanthera orbiculata</i>
Sage willow	<i>Salix candida</i>
Autumn willow	<i>Salix serissima</i>
Highbush cranberry	<i>Viburnum opulus</i> var. <i>americanum</i>
Great-spurred violet	<i>Viola selkirkii</i>