



United States  
Department of  
Agriculture

Forest Service

Rocky  
Mountain  
Region

Black Hills  
National  
Forest

Custer  
South Dakota

March 2006



# Black Hills National Forest

## *Land and Resource Management Plan*

### 1997 Revision Phase II Amendment



## LIST OF ABBREVIATIONS/ACRONYMS

ACHP	President's Advisory Council on Historic Preservation	MMBF	Million Board Feet
A.F.F.	Agricultural, Forestry, and Fishing Services	MMCF	Million Cubic Feet
AMP	Allotment Management Plan	MOU	Memorandum of Understanding
AOI	Annual Operating Instructions	MPB	Mountain Pine Beetle
ARC	At-risk Communities	NAAQS	National Ambient Air Quality Standards
ASQ	Allowable Sale Quantity	NEPA	National Environmental Policy Act
ATV	All Terrain Vehicle	NF	National Forest
AUM	Animal Unit Month	NFMA	National Forest Management Act
BA	Botanical Areas	NFP	National Fire Plan
BA	Biological Assessment	NFPA	National Forest Protection Association
BBC	Birds of Conservation Concern	NFS	National Forest System
BBS	Breeding Bird Survey	National Register	National Register of Historic Places
BCR	Bird Conservation Regions	NIC	Non-Interchangeable Component
BE	Biological Evaluation	NOA	Notice of Availability
BHNF	Black Hills National Forest	NOAA	National Oceanic and Atmospheric Administration
Black Hills	Black Hills Ecoregion	NOI	Notice of Intent
BLM	Bureau of Land Management	NWCG	National Wildland Fire Coordinating Group
BMP	Best Management Practices	OHV	Off Highway Vehicle
BOR	Bureau of Recreation	PCPI	Per Capita Personal Income
BTU	British Thermal Unit	PIF	Partners In Flight
CEQ	Council on Environmental Quality	PILT	Payments in Lieu of Texas
CF	Cubic Feet	PL	Public Law
cfs	Cubic Feet per Second	PM2.5	Particulate Matter Less Than 2.5 Microns in Size
CFR	Code of Federal Regulations	PM10	Particulate Matter Less Than 10 Microns in Size
cm	centimeter	PNV	Present Net Value
DEIS	Draft Environmental Impact Statement	POL	Products Other Than Logs
dbh	diameter at breast height	R2	Region 2
DPS	distinct population segments	RIS	Resource Information System
EA	Environmental Analysis	RMBO	Rocky Mountain Bird Observatory
EIS	Environmental Impact Statement	RMRIS	Rocky Mountain Resource Information System
EO	Executive Order	RNA	Research Natural Area
EPA	United States Environmental Protection Agency	ROD	Record of Decision
ESA	Endangered Species Act	RVD	Recreation Visitor Day
ESI	Existing Scenic Integrity	SAIC	Science Applications International Corporation
FEIS	Final Environmental Impact Statement	SDGFP	South Dakota Department of Game, Fish, and Parks
FIA	Forest Inventory Analysis	SDNHP	South Dakota Natural Heritage Program
F.I.R.E.	Finance, Insurance, and Real Estate	SDOU	South Dakota Ornithologists' Union
FLPMA	Federal Land Policy and Management Act	SHPO	State Historic Preservation Office
Forest	Black Hills National Forest	SIO	Scenic Integrity Objective
FORPLAN	Forest Planning Model	SOLC	Species of Local Concern
FR	Federal Register	SS	Structural Stage
FS	Forest Service	STIP	State Transportation Improvement Program
FSH	Forest Service Handbook	T.P.U.C.	Transportation, Public Utilities, and Communications
FSM	Forest Service Manual	US	United States
FVS	Forest Vegetation Simulator	USC	United States Code
FY	Fiscal Year	USDA	United States Department of Agriculture
GIS	Geographic Information System	USDI	United States Department of Interior
HFRA	Healthy Forest Restoration Act	USFWS	United States Fish and Wildlife Service
HFI	Healthy Forest Initiative	USGS	United States Geological Survey
IDT	Interdisciplinary Team	WGF	Wyoming Game and Fish Department
IMPLAN	Input/Output Model	WUI	Wildland-urban Interface
LRMP	Land and Resource Management Plan		
MA	Management Area		
MAR	Management Attainment Report		
MCF	Thousand Cubic Feet		
ME	Management Effect		
MIS	Management Indicator Species		
MIST	Minimal Impact Suppression Tactics		
ML	Maintenance Level		

**Land and Resource Management Plan  
for the  
BLACK HILLS NATIONAL FOREST  
Rocky Mountain Region  
Phase II Amendment  
March 2006**

Custer, Fall River, Lawrence, Meade  
and Pennington Counties, South Dakota  
and  
Crook and Weston Counties, Wyoming

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Rocky Mountain Region  
U.S. Forest Service

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This Forest Land and Resource Management Plan Phase II Amendment was prepared according to Secretary of Agriculture regulations (36 CFR 219), which are based on the Forest and Rangeland Renewable Resources Planning Act (RPA) as amended by the National Forest Management Act of 1976 (NFMA). This Forest Plan Amendment also was developed in accordance with regulations (40 CFR 1500) for implementing the National Environmental Policy Act of 1969 (NEPA). Because this Forest Plan Amendment is considered a major federal action significantly affecting the quality of the human environment, a detailed Final Environmental Impact Statement (FEIS) has been prepared as required by NEPA and 36 CFR 219.

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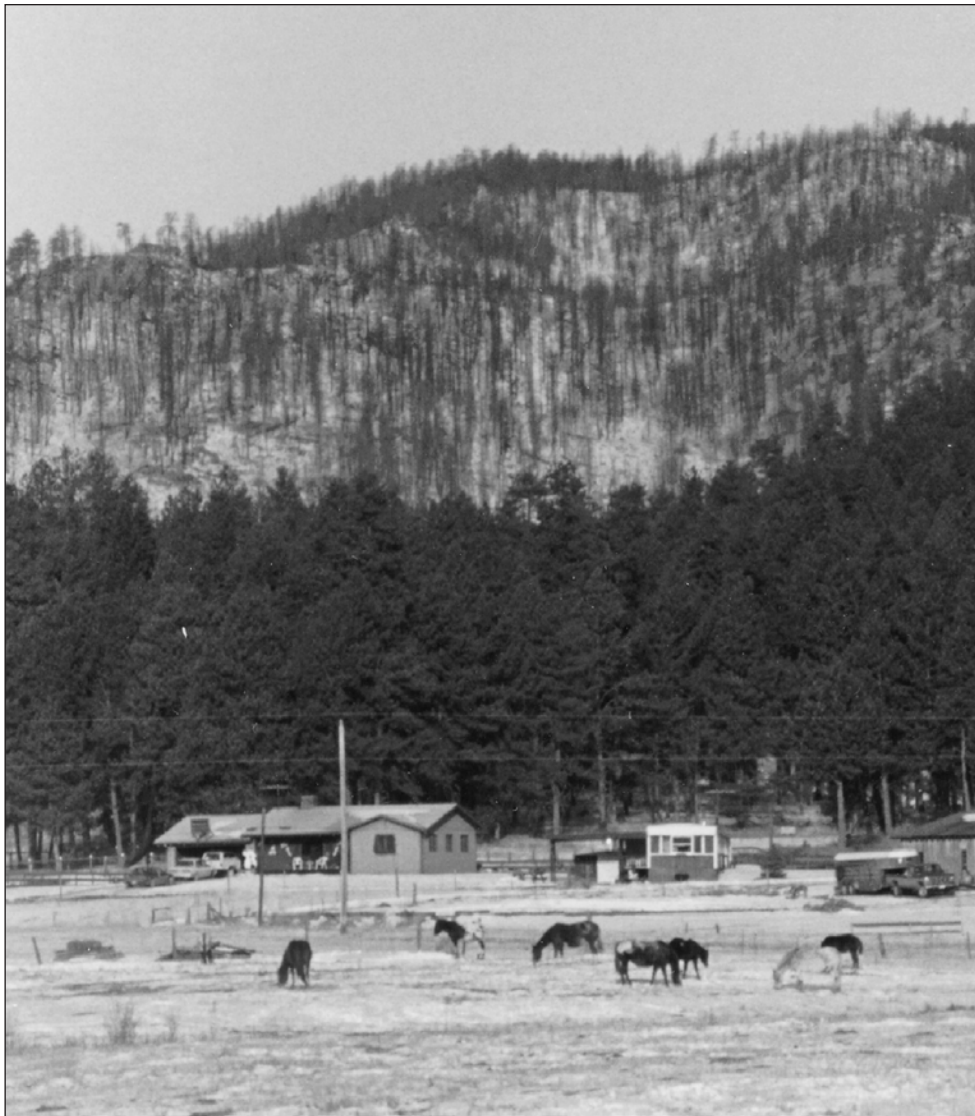
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# PREFACE



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# Preface

## I. Understanding the Forest Plan

### A. PURPOSE OF THE FOREST PLAN

This is the Black Hills National Forest Land and Resource Management Plan, usually called the “Forest Plan.” It has been prepared in accordance with the 1976 National Forest Management Act (NFMA), the 1969 National Environmental Policy Act (NEPA), and other laws and associated regulations. This is a revision of a Forest Plan first released in August, 1983. The Phase II Amendment was published February 23, 2006 and became effective March 2, 2006.

The Forest Plan provides guidance for all resource management activities on the Black Hills National Forest. It establishes goals, objectives, standards and guidelines; it describes resource management practices, levels of resource production, people-carrying capacities, and the availability and suitability of lands for resource management.

The Forest Plan embodies the provisions of the NFMA, the implementing regulations and other guiding documents. The goals, objectives, standards and guidelines constitute a statement of the management direction. It should be understood, however, that projected outputs, services and rates of implementation are dependent on the annual budgeting process.

### B. RELATIONSHIP OF THE FOREST PLAN TO OTHER DOCUMENTS

The planning process and the analysis procedures used to develop this Revised Forest Plan are described or referred to in the accompanying Final Environmental Impact Statement (EIS). Several alternatives were developed as the Forest Plan was revised, in accordance with the NFMA and NEPA. An extensive analysis of the alternatives is described in the Final EIS. Environmental analysis of projects to implement the Forest Plan will be tiered to the Final EIS.

The actual decisions that were made in creating this Forest Plan are described in the accompanying Record of Decision. Amendments to this Plan will be based on requisite environmental documents.

## C. A READER'S GUIDE TO THE FOREST PLAN

The reader will find the following in this document:

**Chapter 1: Goals and Objectives.** This is the overall direction for the Forest.

**Goals** describe desired end results and are normally expressed in broad general terms. Forest Plan goals link broad agency goals as set forth in law, executive order, regulation, agency directives and the Resource Planning Act program. These goals also closely reflect the Regional goals described in the Rocky Mountain Regional Guide (1992).

**Objectives** are concise statements of measurable desired results intended to promote achievement of Forest Plan goals. Objectives describe (1) **desired resource conditions** in the area covered by the plan, either in the next decade or longer and (2) **desired levels of goods and services** that the plan area is capable of producing in the next decade.

**Chapter 2: Forest-wide Standards and Guidelines.** This chapter contains standards and guidelines applied forest-wide. Each item is identified as either a standard or a guideline.

**Standards** are limitations on management activities that are within the authority and ability of the Forest Service to meet or enforce. Standards are mandatory. Deviation from standards is not permissible without an amendment to the Revised Forest Plan.

**Guidelines** are preferred or advisable courses of action. Deviations from guidelines are permissible if the responsible official documents the reasons for the deviation.

**Chapter 3: Management Area Direction.** This chapter contains direction that applies only to specific portions of the Forest as indicated on the Management Area Map. Management area direction is applied in addition to the forest-wide direction. The following is given for each management area.

**Management Area Theme** -- A short description of the management direction.

**Management Area Setting** -- A short description of the location of the management area.

**Management Area Activities and Opportunities** -- Information about the availability of some of the major activities and opportunities within the management area.

**Management Area Desired Future Condition** -- A description of the management area environment as the Forest Plan is implemented. (forest-wide desired future condition is included in the discussion under each forest-wide goal.)

**Management Area Goals and Objectives** -- These are goals and objectives that describe desired resource conditions for the management areas. The other type of objective, which describes levels of goods and service, is only listed on a forest-wide basis.

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**Management Area Standards and Guidelines** -- These are standards and guidelines that apply to a particular management area in addition to the forest-wide standards and guidelines

Management area goals, objectives, standards and guidelines are applied in addition to forest-wide direction. Where there is conflict, the more site-specific or the more stringent direction applies, either forest-wide or management area direction.

Goals and objectives that changed in the Phase II Amendment are noted with an asterik (\*). Appendix D in the Final EIS explains these changes with Alternative 2 being the current Forest Plan and Alternative 6 being the Phase II Amendment Forest Plan.

**Chapter 4: Monitoring and Evaluation Strategy.** This chapter describes how the Forest Service will ensure that the Forest Plan remains current and that it has the effect it is intended to have.

**Glossary:** This appendix defines scientific, technical, governmental and special terms.

**Literature Cited:** Many standards and guidelines cite references that are listed here.

**Appendix A: Related National Goals.** National goals relevant to land and resource management contained in the Forest Service Manual (FSM).

**Appendix B: Key National and Regional Policies.** Key national policies related to land and resource management contained in the Forest Service Manual and Forest Service Handbook (FSH).

**Appendix C: Relevant Federal and State Statutes, Regulations, Executive Orders and Agreements.** Key statutes, regulations and executive orders related to land and resource management.

**Appendix D: Best Management Practices and Best Mineral Management Practices.** Additional direction incorporated by reference into the Forest Plan.

**Appendix E: Further Direction for Norbeck Wildlife Preserve.** Further standards and guidelines for the Norbeck Wildlife Preserve.

**Appendix F: Developed Recreation Site Standards.** Lists the developed recreation sites and their standards.

**Appendix G: Timber Suitability.** Describes the lands suitable for timber harvest.

**Appendix H: Timber Stocking Charts.** Provides guidance when implementing intermediate timber harvests (thinning).

**Appendix I: Suitability for Grazing and Browsing.** Describes the lands suitable for livestock grazing.

**Appendix J: Vegetative Buffer Equation.** Describes how to determine the width of vegetative buffers adjacent to water.

**Appendix K: Landtype Associations.** Provides information about landtype associations for use in project planning.

**Appendix L: Supplemental Species Information.** Provides guidance on the use of the HABCAP model for assessing effects on wildlife from projects.

**Appendix M: 6th Level Watersheds.** List of watersheds, map and acreages.

**Appendix N: Oil and Gas Leasing Stipulations.** Required stipulations to be used with leases.

**Maps:** Accompanying maps show the following:

- 1) Management Areas, including visitor map (except section lines), utility corridors, and electronic sites
- 2) Travel Management
- 3) Late Succession Management Decisions, including late successional landscape management areas and individual Resource Information System (RIS) sites being included as late successional stands
- 4) Timber Suitability
- 5) Range Suitability
- 6) Oil and Gas Decisions, including areas available for oil and gas leasing where stipulations apply
- 7) Scenery Management Map, including travel corridors and other information not available on the management area map

## **D. IMPLEMENTATION OF THE FOREST PLAN**

### **1. Introduction**

The Forest Plan provides the framework to guide the day-to-day resource management operations of the Black Hills National Forest and subsequent land and resource management decisions made during project planning. The NFMA requires that resource plans and permits, contracts, and other instruments issued for the use and occupancy of National Forest System lands be consistent with the Forest Plan. Site-specific project decisions must also be consistent with the Forest Plan, unless the Forest Plan is modified by amendment.

## 2. Project Level Decisions

The objectives of project planning are twofold. In the case of agency-initiated actions, the objective is to move toward or achieve the integrated direction in the Forest Plan through the proposed action. For example, if improvement of fisheries habitat is a forest-wide objective, projects to move toward or achieve that objective might include placement of fish habitat structures in a stream to promote recovery of streamside vegetation.

In the case of proposals made by others, the objective of project planning is to determine if the proposal is or could be made consistent with forest-wide and management area standards, and if the project is in the public's interest in terms of forest-wide goals and objectives. An example of an external proposal might be the proposed construction of a road or utility line serving private land across National Forest System lands.

The following concepts are important:

- Forest Plan Goals and Objectives guide the identification and selection of potential agency projects.
- The determination of whether or not an individual project is consistent with the Forest Plan shall be based on whether or not the project adheres to forest-wide and management area standards.
- Projects that cannot comply with standards in the Forest Plan must be found inconsistent with Forest Plan management direction, unless the standard is modified or waived through Forest Plan amendment. In the latter case, project approval and Forest Plan amendment may be accomplished simultaneously.
- Plan objectives, forest-wide and management area guidelines, project-specific outputs, and activity schedules should not be used in the consistency determination. Under those circumstances where a guideline is modified or not applied as described in the Forest Plan, the responsible official should recognize the purpose(s) for which the guideline was developed. He or she should also provide assurance that any subsequently approved actions are not in conflict with the objective(s) the guideline was intended to achieve. This will be documented during project analysis in accordance with the NEPA procedures.
- Resource plans and permits, contracts, and other instruments issued for the use and occupancy of National Forest System lands must be consistent with the Forest Plan unless specifically exempted from applicability in an amendment or revision decision document. Determinations of consistency of permits, contracts, and other instruments for occupancy and use of National Forest System lands are based on whether or not they adhere to forest-wide and management area standards.

- Generally, it is during Forest Plan implementation when a project decision is made, that the irretrievable commitment of resources is made. Therefore, prior to the making of decisions, additional environmental analysis and site-specific disclosure of environmental effects is required in accordance with NEPA procedures.

Following are some examples of site-specific project decisions that require additional environmental analyses and disclosure during implementation of Forest Plans. This list is not intended to be all-inclusive:

- Timber harvest methods and related activities such as slash disposal, which create site-specific impacts
- Allotment management plans
- Fish or wildlife improvement projects
- Watershed improvement projects, abandoned mine reclamation, and Federal Facility Compliance projects (projects generating air and/or water pollutants and hazardous material treatment or removal)
- Prescribed burn projects in support of resource management objectives
- Decisions for winter-sports development, outfitter-guide proposals for Wilderness or other areas, and other externally generated projects involving occupancy and use of National Forest System lands
- Selection of roads and trails where motorized vehicle travel will be allowed, restricted or prohibited
- Construction and reconstruction of trails, roads and staging areas, buildings, dams, bridges, recreation sites, utilities, potable water systems and road closures
- Oil and gas leasing decisions made pursuant to 36 CFR 228.102(c)
- Oil and gas leasing decisions made pursuant to 36 CFR 228.102(d) and 36 CFR 228.102(e)
- These decisions were only made on those portions of the Forest that have low to high mineral potential, consisting of 609,573 acres. The remaining 633,689 acres were not analyzed because of unknown potential and no interest by industry. Areas that are available for leasing and required stipulations are displayed on the Leasables Map in the map packet which accompanies this document. If the areas are leased, site specific analysis will be done for each drilling proposal.
- Notice of Intent to Operate, Plan of Operation, Surface Use Plan of Operation, mineral sales contracts, mining plans, and lease readjustments and renewals

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### 3. Operational Activities Exempt from the National Environmental Policy Act Process

In order to assist in orderly implementation of a Forest Plan, Forest Service managers conduct resource inventories, prepare action plans and schedules, and administer previously approved activities. These activities are called operational activities. Because operational activities represent neither binding decisions nor irretrievable commitments of resources, they are not subject to environmental analyses and disclosure under the National Environmental Policy Act (NEPA) procedures.

Following are some examples of operational activities that do not constitute site-specific project decisions and are therefore exempt from NEPA procedures. This list is not intended to be all-inclusive:

- Implementation schedules, 3 to 5-year plans, etc. Examples: 5-year timber sale plan and timber "gate system"
- Developing timber-stand improvement, reforestation and K-V collection plans, where the actual projects have been previously approved in project-level decisions with appropriate NEPA analysis (FSH 2409.19)
- Scheduling revision of allotment management plans (FSM 2210)
- Amending grazing permits to comply with the Forest Plan (FSM 2230). Reissuing grazing permits to the original holder of the permit or another permittee
- Developing 5-year wildlife operating plans (FSM 2620)
- Conducting resource inventories or identifying adverse air-quality conditions in Class 1 airsheds (FSM 2580)
- Identifying opportunities for improved water yield (FSM 2510).
- Developing fire-situation reports, escaped fire-situation analyses, fire evaluations, fire-season severity requests, fire-management action plans; dispatching fires (FSM 5120, 5130)
- Scheduling maintenance for developed recreation sites; developing heritage-resource overviews, scenic-byway management plans, and interpretive services (FSM 2330, 2360, 2380, 2390)
- Developing Wilderness implementation schedules (FSM 2320)
- Preparing Forest Development Transportation Plans for roads, trails and off-highway vehicle use, the Forest Facility Master Plan, master plans for recreation sites, dams, and other facilities, and associated maintenance and operation plans (FSM 7300, 7700)

- Preparing landownership adjustment actions (FSM 5400)
- Preparing biological evaluations, forest-pest suppression schedules, and forest damage/condition statistical reports (FSM 3450)
- Developing rural community action plans in accordance with the National Forest-Dependent Rural Communities Diversification Act of 1990, Section 2375
- Preparing requests for materials, personnel, and budgets, including spreadsheets projecting dollars and implementation activities through the life of the Forest Plan (FSM 1930, 6520)
- Developing law enforcement plans (FSM 5310)
- Developing the schedule for analyzing all legally available lands for oil and gas leasing not previously analyzed (36 CFR 228.102(b))

**Note:** Operational activities exempt from the NEPA process are not synonymous with categorical exclusions. Operational activities, as described above, do not represent irreversible commitments of resources and do not, of themselves, create any environmental effects. Actions that can be categorically excluded from documentation in an environmental assessment or environmental impact statement are described in FSM 1952.2 and FSH 1909.15. Actions that can be categorically excluded do represent irreversible commitments of resources, but do not individually or cumulatively have significant effects on the human environment.

#### 4. Public Involvement and Coordination with Other Government Agencies

Ongoing public involvement and governmental coordination is a central part of implementing the Forest Plan.

Table Preface-1 shows some of the coordination and involvement required by law.

**Table Preface-1.** Public involvement and Government coordination.

Air Quality	- Clean Air Act of 1977 (42 USC §7401 to 7671q)
American Indians	- American Indian Religious Freedom Act of 1978 - Archeological Resources Protection Act - Federal Land Policy and Management Act of 1976 (43 USC §3156 et seq.) - Native American Graves Protection and Repatriation Act of 1992 - 36 CFR Part 219 - 36 CFR Part 296 - 36 CFR Parts 1500-1508
Caves	- Federal Cave Resources Protection Act of 1988 - FSM 2356.03-8 - FSM 2356.2 - FSM 2356.5
Fire	- Cooperative Forestry Assistance Act of 1978 (Public Law 95-313)

Heritage Resources	<ul style="list-style-type: none"> <li>- Antiquities Act (16 USC §431-433)</li> <li>- Archaeological and Historical Preservation Act of 1980 (16 USC §469-469c-1)</li> <li>- Archaeological Resources Protection Act</li> <li>- National Historic Preservation Act (16 USC §470 et seq.)</li> <li>- Native American Graves Protection and Repatriation Act of 1992</li> <li>- 36 CFR Part 60</li> <li>- 36 CFR Part 296</li> <li>- 36 CFR Part 800</li> <li>- FSM 2360</li> </ul>
Insect and Disease Protection	<ul style="list-style-type: none"> <li>- Cooperative Forestry Assistance Act of 1978 (Public Law 95-313)</li> <li>- Federal Plant Protection Act of 1957 (7 USC §150aa-150jj)</li> <li>- Plant Quarantine Act of 1912 (7 USC §151-165,167)</li> </ul>
Land Acquisition	<ul style="list-style-type: none"> <li>- Clark-McNary Reforestation Act</li> </ul>
National Trails	<ul style="list-style-type: none"> <li>- National Trails System Act of 1968 (16 USC §1241-1251)</li> </ul>
Off-Road Vehicles (ORVs)	<ul style="list-style-type: none"> <li>- 36 CFR Part 295</li> </ul>
Pesticide Use	<ul style="list-style-type: none"> <li>- Federal Insecticide Rodenticide and Fungicide Act of 1972 (7 USC §136-136y)</li> <li>- FSM 2150.3</li> </ul>
Proposed, Endangered, Threatened and Sensitive Species	<ul style="list-style-type: none"> <li>- Endangered Species Act of 1973 (Public Law 93-205)</li> <li>- FSM 2671.45</li> <li>- FSM 2620.2</li> </ul>
Range	<ul style="list-style-type: none"> <li>- Federal Land Policy and Management Act of 1976 (43 USC §3156 et seq.)</li> <li>- Rangeland Improvement Act of 1978</li> <li>- 36 CFR Part 222</li> <li>- FSM 2203.1-8 14</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>- FSM 2303-11</li> </ul>
Resource Decision Making	<ul style="list-style-type: none"> <li>- National Environmental Policy Act of 1969 (43 USC §4321-4370a)</li> <li>- National Forest Management Act of 1976 (16 USC §1600-1612)</li> <li>- 36 CFR Part 219</li> <li>- 40 CFR Parts 1500-1508</li> </ul>
Soils	<ul style="list-style-type: none"> <li>- Organic Administration Act of 1897</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>- Intermodal Surface Transportation Efficiency Act</li> </ul>
Watershed Management	<ul style="list-style-type: none"> <li>- Federal Water Pollutions Control Act Amendments of 1972</li> </ul>
Wild and Scenic Rivers	<ul style="list-style-type: none"> <li>- National Wild and Scenic Rivers Act of 1968 (16 USC §1271-1278)</li> <li>- FSM 2354.03-5</li> </ul>
Wildlife and Fish Habitat Management	<ul style="list-style-type: none"> <li>- Fish and Wildlife Coordination Act of 1934 (16 USC §661-666c)</li> <li>- Sikes Act of 1974 (USC §670a-670o)</li> <li>- 36 CFR Part 219</li> <li>- 36 CFR Part 241</li> </ul>

## **5. Budget Formulation**

Annual Forest budget proposals are to be based on the activities and actions required to achieve the goals and objectives of the Forest Plan. Monitoring results and actual experienced costs of implementing the standards and guidelines will be used as a basis for each year's budget proposals. Costs to implement the Forest Plan are not complete without providing for an adequate level of monitoring and evaluation of projects.

## **6. Budget Execution**

Implementation of the annual budget must be in compliance with the Forest Plan and any specific direction provided in the annual Appropriations Act (FSM 1930). As actual allocations rarely, if ever, provide for full funding of the Forest Plan requirements, the scheduled activities and actions for any particular year must be adjusted to conform to the intent of Congress. Although budget changes themselves do not require Forest Plan amendment, implications of budget changes may. For example, a project for which money is appropriated must be consistent with the Forest Plan; the project or the Forest Plan may require modification to assure consistency.

# **E. FOREST PLAN AMENDMENT AND REVISION**

## **1. Forest Plan Amendment**

The amendment process changes a discrete component of management direction in a Forest Plan. Unless circumstances warrant a revision, the amendment process should generally be initiated whenever the Forest Supervisor determines through monitoring and evaluation that achievement of a forest-wide objective is unduly constrained by conflicting Forest Plan direction or that adequate progress toward achieving the desired future condition is not being made.

Other needs for amendments may arise during the evaluation of agency-initiated projects to achieve the integrated direction in the Forest Plan or during the evaluation of external proposals. Amendments arising from agency-initiated projects or external proposals may be analyzed, and decisions documented in a decision notice or record of decision, simultaneously with project-approval decisions provided that the consequences of the proposed amendment and alternatives to the proposed amendment are specifically disclosed in the environmental assessment or environmental impact statement prepared for the project or proposal.

Significant and non-significant amendments differ. Generally speaking, significant amendments are those that affect the long-term balance of goods and services produced on the Forest.

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The Regional Forester is the responsible official for significant amendments. The Forest Supervisor is the responsible official for non-significant amendments; he or she conducts the process and forwards proposed significant Forest Plan amendments to the Regional Forester for approval.

## **2. Forest Plan Revision**

The Forest Plan will normally be revised on a 10-year cycle. This means that the anticipated completion of a normal revision will occur about 10 to 15 years following completion of the current Forest Plan. Variations to this general rule may occur for various reasons. For example, some catastrophic event might indicate an acceleration of the revision. A delay in the normal revision schedule might be warranted because of scheduled inventories, anticipated staffing changes significant amendments, or other circumstances that might improve planning efficiency. A delay in revision is not appropriate if monitoring and evaluation indicates more immediate changes in the Forest Plan are needed.

A complete review of the Forest Plan should be completed prior to initiating a Forest Plan revision. Such a review is conducted by the Forest interdisciplinary team and includes the following:

- Recent monitoring and evaluation results along with pertinent research findings and recommendations
- A review of new laws, regulations or policies that may indicate a need to change the Forest Plan
- A determination of how well the Forest is progressing toward the stated desired future condition
- Demand projections for selected outputs
- Evaluation of the predicted and actual ecosystem responses
- Assessment of predicted and actual costs, outputs, responses, etc.
- A review of the RPA program
- Identification of emerging issues and opportunities

## **F. INTEGRATION WITH FOREST SERVICE DIRECTIVES SYSTEM**

Management direction in the Forest Service Directives System, including the Forest Service Manual and the Forest Service Handbook, is part of the Forest Plan management direction and is appropriately referenced within the Forest Plan. Applicable laws, regulations and policies are part of the applicable management direction even though they may not be restated in the Forest Plan.

Appendices A and B reference the minimum resource management direction

described in the directives system. Nothing precludes the development of additional minimum resource management direction whenever appropriate. Under the following circumstances, minimum resource management direction has not been referenced in this Forest Plan:

- The specific resource or use is not present on the Forest;
- The requirement addresses a condition or problem not applicable to the Forest; or
- A sound rationale for the exception is documented in the planning records.

## **II. Understanding the Black Hills National Forest**

The Black Hills National Forest is located in western South Dakota and northeast Wyoming. It is elliptical in shape - 110 miles long and 70 miles wide - and rises as much as 4,000 feet above the surrounding plains.

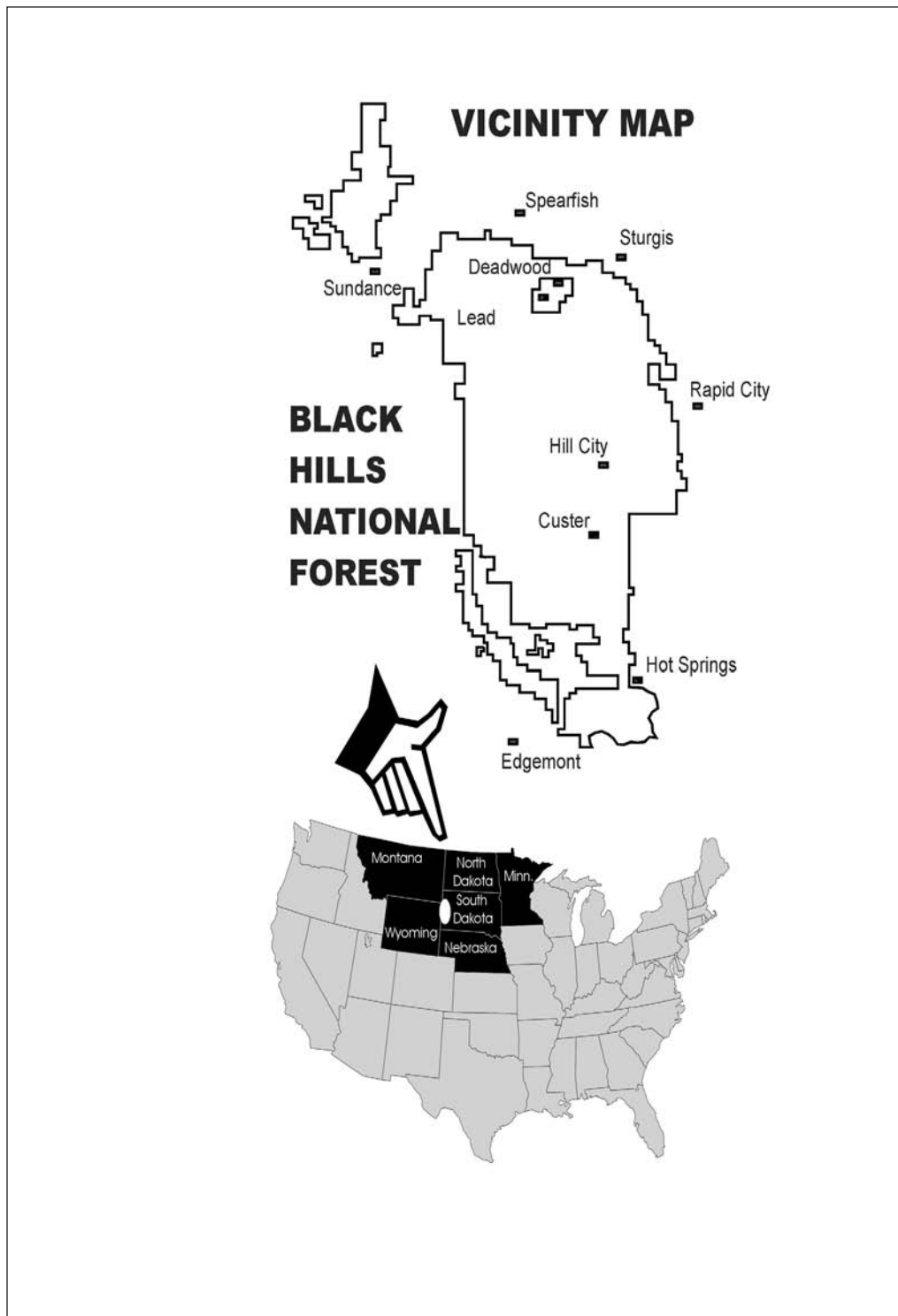
A vicinity map is shown in Figure Preface-1, page Preface-13.

In the hierarchical ecological mapping system used by the Forest Service, the Black Hills are in the “Dry-domain, Temperate-steppe Regime of the Mountain Division.” Because the Black Hills are clearly distinct from the surrounding prairie, they exclusively comprise the next two smaller subdivisions: the “Black Hills Province” and the “Black Hills Section.”

Of the more than 1.5 million acres within the National Forest boundary, approximately 289,000 acres are in private, state, or other federal agency ownership.

Counties containing lands covered by the Forest Plan include Custer, Fall River, Lawrence, Meade and Pennington in South Dakota and Crook and Weston in Wyoming.

Figure Preface-1. Vicinity Map



## **A. THE BLACK HILLS NATIONAL FOREST: DISTINCTIVE ROLES AND CONTRIBUTIONS**

**The Black Hills National Forest is ...**

### **1. Global/Intercontinental/National Scope**

- The setting for a region that is a top tourist destination in the country.
- The setting for Mount Rushmore and other attractions.
- The setting for some of the longest caves in the world.
- The setting for some of the richest mineral deposits in the world, including the largest gold mine in the Western Hemisphere.
- The setting for nationally designated areas: Black Elk Wilderness, Norbeck Wildlife Preserve, Upper Pine Creek Research Natural Area.
- The setting for national Scenic Byways in Norbeck Wildlife Preserve and Spearfish Canyon.
- The setting for important historical events, including Brevet Major General George Armstrong Custer's 1874 Expedition, a major gold rush in the late 19th century, the lore surrounding settlement of Deadwood Gulch, and conflicts between American Indians and the U.S. cavalry in the 19th century.
- The setting for nationally designated historic sites, including Harney Peak, Inyan Kara Mountain, Cold Springs School House, Mystic Townsite.
- Adjacent to Devils Tower, the nation's first national monument.
- The location of the first government timber sale in the United States to Homestake Mining Company in 1899, and the longest history of multiple-use management in the National Forest System.

### **2. Multi-State/Regional Scope**

- An "island in the plains" - a mountainous uplift covered mainly by ponderosa pine and surrounded by prairie and badlands
- The setting for the largest percentage of suitable timber lands and the highest allowable sale quantity in the Rocky Mountain Region
- A recharge area for the Madison Aquifer, a large pool of groundwater important to communities in the area
- The setting for Deadwood, the gambling capital of the region
- The traditional spiritual home of the Lakota, Cheyenne and Arapaho nations

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### 3. Forest Scope

- The setting for a variety of plant and animal species
- The setting for blue-ribbon trout streams
- The setting for Pactola Reservoir, Sheridan Lake, Deerfield Reservoir, and other popular recreational attractions
- The setting for important experiments within the Black Hills Experimental Forest and the Sturgis Experimental Watershed
- The setting for contributions to local communities, such as economic returns-to-counties and employment
- The setting for the Boxelder Job Corps Center, where youth learn important skills and can earn their high school diploma

## B. TRENDS THAT MAY AFFECT THE BLACK HILLS NATIONAL FOREST

### 1. Global/Intercontinental/National Scope

- Climate trends
- Shifts in national timber demand supplied by Canada and other countries, southern states, and the West Coast
- Mineral prices
- Changes in off-road vehicle technology
- Changes in modes of recreation
- Military necessity
- Tourism

### 2. Multi-State/Regional Scope

- Regional population trends
- Shifts in employment and manufacturing base
- Shifts in tourism
- Drought and water availability
- Major fire risks
- Insect and disease outbreaks
- Economics
- Trends in visitor use
- Shifts to ecosystem/landscape management emphasis

### 3. Forest Scope

- Major flood events
- New highway construction through the Forest
- New industry moving near the Forest
- Shifts in recreation visitor preferences
- New uses for forest products

## C. RESOURCE COMMODITIES AND SERVICES FROM THE BLACK HILLS NATIONAL FOREST

Following is a brief summary of the analysis of the management situation, including demand and supply conditions for resource commodities and services, production potential, and use and development opportunities within the Black Hills National Forest. (36 CFR 219.11(a)) This information was derived from the accompanying Final Environmental Impact Statement (EIS).

Supply conditions, production potential, and use and development opportunities vary by alternative. As explained earlier, differences among alternatives are displayed in the Final EIS. The supplemental tables in the Final EIS contain specific levels of outputs, activities, allocations and costs.

### 1. Recreation

**Dispersed Recreation:** Dispersed recreation is that portion of outdoor recreation use that occurs on all areas of the Forest outside developed recreation sites. Between 1978 and 1995, there was a four percent annual growth rate of use. This rate is assumed to continue in the future. Both motorized and non-motorized recreation are assumed to grow at the same rate. Supply will meet projected recreation demand for at least the next 20 years.

**Developed Recreation:** Developed recreation includes all recreation activities that take place on a developed recreation site. Managed capacity is 750,000 Recreation Visitor Days (RVDs). Predicted demand during the next 10 years is 594,200 RVDs.

### 2. Minerals

**Locatable Minerals:** Locatable minerals important to the history and economy of the Black Hills include gold, silver, uranium, feldspar and mica. Mineral production will continue in accordance with the 1872 Mining Act.

**Leasable Minerals:** The only known leasable minerals on the Black Hills National Forest are oil and gas. Currently, there are no producing wells on National Forest System lands in the Black Hills. Projections indicate that two exploratory wells are expected in the next 15 years. No discovery is expected.

### **3. Timber Production**

Timber harvesting is the keystone of forest management. The Black Hills National Forest has the highest allowable sale quantity (ASQ) of any forest in the Rocky Mountain Region.

A high demand exists for wood products manufactured from ponderosa pine, the primary species in the Black Hills, and from white spruce.

Growth of the local timber industry was encouraged by the Forest Service in the 1970s. A modern, efficient wood-product industry exists today in the Black Hills region with a capacity to process more than 200 million board feet annually.

Roughly two-thirds of industry's needs are supplied by the Black Hills National Forest. Demand for sawtimber from the Forest is expected to remain much higher than can be supplied.

### **4. Livestock Grazing**

Livestock grazing is 128,000 animal unit months. This number represents grazing by cattle; there is no grazing by sheep in the Black Hills. Demand is much higher than supply.

There are 1,037,598 acres suitable for livestock grazing and browsing. Suitable lands are those lands where the economic and environmental consequences and alternative uses foregone, have been analyzed to determine that they are appropriate for livestock grazing management (36 CFR 219.3).



# Chapter One

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# Chapter One:

# Goals and Objectives

## Introduction

This chapter contains multiple-use goals and objectives for integrated resource management across the entire Forest. Chapter Three contains additional goals and objectives for each management area.

**Goals** describe a desired end result and are normally expressed in broad general terms. Forest Plan goals link broad agency goals as set forth in law, executive order, regulation, agency directives, and the Resource Planning Assessment (RPA) program.

Forest Plan goals describe forest desired conditions, but are not quantitative nor time specific. Monitoring Forest Plan objectives will assess whether the forest is moving toward Forest Plan goals.

**Objectives** describe measurable time-specific desired results of forest management and are designed to accomplish Forest Plan objectives intended to promote achievement of Forest Plan goals. Objectives describe (1) **desired resource conditions** in the area covered by the Plan, either in the next decade or longer and (2) **desired levels of goods and services** that the Plan area is capable of producing in the next decade. Objectives describing desired levels of goods and service are only described on a Forest-wide basis, while those describing desired resource conditions are either Forest-wide or applicable to a portion of the Forest or a specific management area.

The Forest Supervisor shall strive to plan and implement projects that contribute to achieving Forest Plan goals and objectives in a manner consistent with Forest Plan standards, guidelines, Forest Service policy, and applicable legal requirements. Many variables affect objective achievement and cannot be fully assessed when a plan is revised or amended. However, a forest plan need not be amended if forest plan objectives are not achieved.

The objectives were developed in conjunction with the monitoring strategy described in Chapter Four. Objectives are measurable in either quantitative or qualitative ways.

Goals and objectives that changed in the Phase II Amendment are noted with an asterik (\*). Appendix D in the Final EIS explains these changes with Alternative 2 being the Phase I Amendment Forest Plan and Alternative 6 being the Phase II Amendment Forest Plan.



## **GOAL 1:**

**PROTECT BASIC SOIL, AIR, WATER AND CAVE  
RESOURCES.**





## Goal 1: Protect basic soil, air, water and cave resources.

### Discussion:

Soil, water and air provide the framework for forest and downstream health. Their condition affects the economic health of local communities, and by extension, communities beyond the Forest boundaries. Caves are unique resources, and provide habitat for species not found elsewhere. On the Black Hills, the connection between the hydrology of the area and cave formation and maintenance is believed to be extensive. Caves provide conduits for groundwater flowing from one surface watershed to another.

Congress has recognized the importance of these resources to long-term national well-being by providing direction for the maintenance or enhancement of soil, air, water and cave quality. Laws containing this direction include: the Clean Water Act; the Clean Air Act; the National Forest Management Act; the Organic Act; and the Federal Cave Resources Protection Act of 1988.

In keeping with the direction from Congress, the Black Hills National Forest will be managed so that the rivers, streams, wetlands, lakes, riparian areas and caves of the Forest reflect healthy, functioning ecosystems. Forest watersheds are in a low-risk category for significant adverse effects from a 100-year event resulting from management-induced changes in the watershed. Major flood events, which have historically

been a dominant force on the Black Hills, still occur due to intense storms.

Irreversible soil losses and detrimental soil conditions will not exceed standards and guidelines. Coarse woody debris will be left to provide for forest productivity.

Riparian areas will support diverse plant species. Natural woody debris will be left within stream channels to assist in the proper ecological functioning of riparian and aquatic systems, and to meet habitat requirements for fish and other aquatic species.

Healthy riparian areas and stream systems will affect stream flow regime. Some intermittent reaches will regain perennial flow. Other reaches will have longer average times of flow. Water conditions on the Forest will be of a quality and quantity to enable them to contribute to municipal water supplies for citizens surrounding the Black Hills, including those using the Madison Aquifer.

Caves classified as “significant” under the provisions of the Federal Cave Resources Protection Act of 1988 will be protected. On a site-specific basis, significant caves, including those that are available for the public to use for recreation and exploration will be identified and measures will be developed to protect cave ecosystems.



### Objectives:

101. Maintain air quality standards in accordance with state implementation plans.
102. Use a qualitative survey which emphasizes riparian condition, such as the Proper Functioning Condition methodology, to refine the preliminary watershed health assessments (FP-FEIS, Appendix J) within the next planning period. This survey would focus first on Class III watersheds, and could be supplemented with additional quantitative methods, as needed, for the design of watershed improvements. Class I watersheds do not need to be surveyed unless information becomes available which suggests there was an error in classification.
103. Maintain or improve long-term stream health. Achieve and maintain the integrity of aquatic ecosystems to provide stream-channel stability and aquatic habitats for water quality in accordance with state standards.
104. Maintain or enhance watershed conditions to foster favorable soil relationships and water quality.
  - a. Implement projects to improve watershed conditions on an average of at least 300 acres annually over the plan period.
  - b. Achieve and maintain stable stream beds and banks, diverse riparian vegetation, and effective ground cover that controls runoff and erosion.
105. Prohibit motorized vehicle use in wetlands, wet meadows and riparian areas, except at specified locations and times of the year.
106. Manage water-use facilities to prevent gully erosion of slopes and to prevent sediment and bank damage to streams.
107. Restore degraded wetlands except where exemptions are allowed by a Clean Water Act Section 404 permit.
108. Manage for sustained or improved water flows. 109. Allow public use of caves unless restrictions are necessary to protect values present in significant caves. Work cooperatively with agencies, research institutions, cave interest groups and the public for cave resource use, scientific study, significance evaluation, safety, protection and management.
110. Manage the majority of caves as “wild” caves, with no modifications or facilities to aid or impede use.
111. Determine significance of all caves.
112. Manage significant caves using site-specific criteria in accordance with the Federal Cave Resources Protection Act of 1988.
113. Apply for mineral withdrawals to protect significant cave ecosystems and resources.

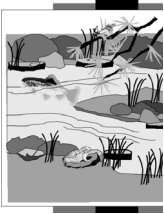


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**GOAL 2:**

**PROVIDE FOR A VARIETY OF LIFE THROUGH MANAGEMENT OF BIOLOGICALLY DIVERSE ECOSYSTEMS.**





## **Goal 2: Provide for a variety of life through management of biologically diverse ecosystems.**

### **Discussion:**

The Black Hills is blessed with a diverse array of plants and animals. Elements from the Rocky Mountain Coniferous Forests, Boreal Forests, Eastern Deciduous Forests, and Northern Great Plains are all represented. Ponderosa pine is the dominant forest cover type comprising 84 percent of the total Forest System land base.

Historically, the Black Hills was subjected to recurrent disturbances in the form of fire, insects, disease, and storm events. These processes set back succession benefitting early seral constituents such as quaking aspen, meadows, and understory communities, as well as benefitting wildlife species associated with these habitats.

During the past century of forest management, the influence of disturbance, particularly fire, has diminished. As a result ecosystem components dependent upon disturbance have declined. Stand-replacing fire and insect epidemics, although inevitable to some degree, are not desirable in an intensely managed and highly populated area like the Black Hills. However, early successional elements associated with disturbance will be essential for diversity, requiring active management in the contemporary forest. In the absence of natural processes or management, early successional components would decline as succession moved towards later coniferous seral stages. Management in the form

of timber harvest, prescribed burning and other non-commercial treatments will be necessary to conserve diversity while still meeting societal expectations.

Congress has recognized the importance of diversity in laws including the National Forest Management Act, the Multiple-Use, Sustained-Yield Act, and the Endangered Species Act. In keeping with the direction from Congress, the Black Hills National Forest will be managed to retain or expand important and/or limited forest components.

Hardwood communities will be restored and acres will be increased to 92,000 aspen acres and 12,000 bur oak acres. Hardwood stands will vary from uniform heights and ages in some management areas to a wide range of heights and ages elsewhere.

Late-successional landscapes will be comprised of three distinct components. The first will be found in Management Area 3.7 where the goal will be to manage for sustainable late-successional landscapes. These areas will have an overstory comprised of trees 160 years of age or older, but also a range of structure, ages and composition characteristic of ponderosa pine landscapes in the Black Hills. The second type will be designated in Management Areas 4.1, 5.1, 5.4, 5.43, and 5.6 as stands classified as structural stage 5 and labeled as such in the Natural Resource Inventory Systems (NRIS)



database. These stands will represent 5 percent of the ponderosa pine in these management areas. For structural stage descriptions, see Structural Stages in the Glossary.

Pine encroachment into meadows will continue. However, harvest and/or fire will be used to conserve meadow acreage and restore some historic meadows.

Habitat for the existing winter bald eagle population will be conserved. Potential nesting habitat will be available for bald eagles should their breeding range expand. Potential habitat for black-footed ferrets (prairie dog towns) will be limited and insufficient to support a population. This acreage would remain fairly stable in the future. The Black Hills is not being considered as a reintroduction site.

Potential habitat for sensitive species is identified and ample habitat will be conserved to minimize the potential for federal listing.

Hard and soft snags will be present in sufficient quantities and distribution to conserve species viability for those emphasis species dependent on snags.

Coarse woody material is provided for forest productivity and wildlife species habitat. Game species will be abundant on the Forest and provide a variety of recreational opportunities. The Forest and state wildlife agencies will work cooperatively to meet mutually agreeable population objectives through habitat and population management. Forage, cover and open road densities will be key components addressed at the project level.

The Black Hills contains many habitats not widespread in South Dakota or Wyoming. These uncommon communities, such as McIntosh Fen, will be conserved in order to maintain their ecological function.

## Objectives:

### Landscape Vegetative Diversity (LVD)

201. \*Manage for a minimum of 92,000 acres of aspen (double current aspen acres), and 16,000 acres of bur oak (approximately 33 percent increase) in current bur oak during the life of the Plan. The highest priority for hardwood restoration is where conifers (e.g., spruce and pine) have out-competed aspen adjacent to riparian systems that once supported beaver. Increases in bur oak will be focused away from the Bear Lodge Mountains.

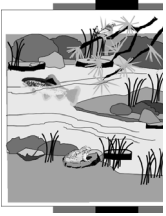
202. Conserve and manage existing mountain mahogany stands.

- a. Manage a minimum of 10 percent of the site in cover (mature and over mature shrubs).
- b. Manage a minimum of 40 percent of the site in forage (young shrubs) by treating when root reserves are high or immediately prior to the growing season.
- c. \*DELETED

203. Manage 30 to 50 percent of each bur oak stand for 100-plus year old trees.

204. \*Conserve and manage birch/hazelnut, lodgepole pine, limber pine, and Douglas-fir.

205. \*Manage for 122,000 acres of prairie grassland and 3,600 acres of meadow during the life of the Plan. Restored acres will not be considered suitable for timber production.



## Goals and Objectives

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239-LVD. \*NEW. Manage for 20,000 acres of spruce across the Forest using active management to achieve multiple-use objectives. Treat spruce within 200 feet of buildings, where spruce has encroached into hardwoods, and for emphasis species management.

### **Landscape Structural Diversity (LSD)**

206. \*DELETED. See management area (MAs) objectives for MAs 4.1, 5.1 5.6 5.4 and 5.43.

207. \*DELETED

208. \*DELETED

209. \*DELETED. See management area (MA) objectives for MAs 5.1, 5.6, 5.4, and 5.43.

210. \*DELETED

### **Snags and Dead Woody Material (SDW)**

211. \*Within a management area in conifer-forested portions of the Forest, provide an average of 3 hard snags greater than 9-inch dbh and 25 feet high per acre, well-dispersed across the Forest, 25 percent of which are greater than 14-inch dbh.

212. In conifer forested portions of a planning unit, provide at least once during a rotation (approximately 100 years) an average of 5 to 10 tons per acre of down, dead woody material at least 3 inches in diameter, provided there is no conflict with fire or pest management objectives. In the shelterwood silviculture system, accomplish this through commercial and precommercial treatments. Provide this tonnage no later than the removal cut (overstory removal) or a combination of removal cut and precommercial thinning of the established stand (thinning to be accomplished within 10 years of the removal cut).

### **Riparian (RIP)**

213. Maintain or enhance existing riparian area biodiversity, physical structure and size.

214. Restore riparian shrub communities across the forest by 500 acres during the Plan period on sites capable of supporting this community.

215. \*Manage for at least 5 stream reaches in a rehabilitated condition during the Plan period. Select reaches where the water table has receded and plant species composition has changed as a result of human activities. Coordinate planning and implementation with state game and fish agencies and downstream private landowners. Use Objective 215 a through d in designing the projects.

- a. Raise the water table to saturate historically inundated soils.
- b. Convert drier-site vegetation to native wet-meadow species.
- c. Reintroduce beaver into the drainage once suitable habitat is developed.
- d. Design management to maintain wet-meadow conditions.



## Botanical Areas (BA)

216. Manage to conserve or enhance the integrity of the following important botanical areas:

- a. Upper Sand Creek
- b. Dugout Gulch
- c. Bear/Beaver Gulches
- d. Higgins Gulch
- e. Englewood Springs
- f. Black Fox Valley
- g. North Fork Castle Creek
- h. McIntosh Fen
- i. Spearfish Canyon (Botanical features within Spearfish Canyon Management Area 4.2A)

## Habitat Improvements (HAB)

217. Maintain habitat for game and fish populations at the state objectives in effect in 1996.

218. Conserve or enhance habitat for resident and migratory non-game wildlife. Increase habitat capability for species when recommended in project level analysis.

219. Maintain or improve instream fisheries habitat. Cooperate with state agencies in aquatic ecosystem improvements to meet mutually agreed-upon objectives.

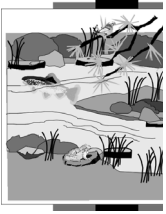
220. Conserve or enhance habitat for federally listed threatened, endangered and proposed species.

221. \*Conserve or enhance habitat for R2 sensitive species and species of local concern (SOLC). Monitoring will be conducted at a Forest-wide level, not at the project level, and will be done for habitats or populations.

222. \*Complete the following habitat projects each year during the Plan period as funding allows:

	NONSTRUCTURAL	STRUCTURAL
Wildlife/Plant	1,000 acres	100 structures
Fish	50 acres	1 mile
Range	600 acres	30 structures

240-HAB. \*NEW. Manage and/or install structures to provide water for livestock and to protect the aquatic, shoreline and upland vegetation around ponds or water catchments containing leopard frogs.



### **Disturbance Processes (DIS)**

223. \*DELETED

224. \*See Goal 10-04

225. \*See Goal 10-05

226. \*See Goal 10-06.

227. \*DELETED

228. \*See Goal 10-07

229. \*See Goal 10-08

230. Eradicate or limit spread (acres) of new introductions of non-native pests (insects, diseases, plants) to minimize ecosystem disruption.

231. \*Prevent new infestations and manage to reduce established noxious-weed infestations. Treat at least 8,000 acres per year during the next ten years to limit noxious-weed infestations.

232. \*DELETED

### **Species Conservation (SPC)**

233. \*NEW. Collect seeds, spores, or other plant material from R2 sensitive and species of local concern plants. Retain and/or increase material at a local and willing long-term repository to provide local genetic material for potential propagation and reintroduction efforts in the event existing occurrences are lost. As material is available, reintroduce R2 sensitive or species of local concern plants where population occurrences are known to have been lost or in areas where it is determined that specific micro-site conditions for successful introduction efforts likely exist. Initiate the project within 5 years or as seed-collection opportunities allow.

234. \*NEW. Create or maintain a moderate-to-low crown-fire hazard adjacent to occurrences of R2 sensitive and species of local concern plants and botanical areas bordered by continuous, dense conifer stands where long-term persistence is at risk from a single high-intensity fire.

235. \*NEW. Provide for the long-term persistence and expansion of autumn willow (*Salix serissima*: two known occurrences with the largest occurrence at McIntosh Fen) and sage willow (*Salix candida*) at McIntosh Fen using the following actions:

- a. Restore conditions that favor beaver along the stream reaches above and adjacent to where these targeted plants occur.
- b. Protect upstream hydrology through land acquisition or other measures.
- c. For recently (2002) relocated *Salix serissima* at Middle Boxelder Creek, identify within the next 2 years whether and which site-specific conservation measures could be successfully implemented to provide for the long-term persistence and/or expansion of this occurrence.



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236. \*NEW. Plant and animal species with insufficient information will be prioritized for data collection and evaluation.

237. \*NEW. Manage for 200 to 300 acres of prairie dog towns across the Forest in at least 3 separate towns.

238. \*NEW. The following are objectives for management indicator species (MIS). MIS will be monitored using trends in habitat; however, when available, population trends may be used as a strong indicator of management response. Monitoring will be conducted at a Forest scale and not at the project level. Population monitoring will be discretionary as provided by 219.14.f.

- a. Maintain or enhance habitat for ruffed grouse, beaver, song sparrow, grasshopper sparrow, white-tailed deer and brown creeper; as outlined in specific direction pertaining to aspen, other hardwoods, riparian areas, grasslands, spruce and ponderosa pine (e.g., Objectives 201, 205, 211, 239-LVD, 5.1-204).
- b. Maintain habitat opportunities for black-backed woodpeckers across the Forest, as outlined in specific direction pertaining to conifer habitat, snags and recently burned habitat (e.g., Objectives 211, 11-03, 5.1-204, Standard 2301)
- c. Maintain habitat for golden-crowned kinglets, as outlined in specific direction pertaining to spruce habitat (e.g., Objective 239-LVD).
- d. Maintain or enhance habitat quality and connectivity for mountain suckers, as outlined in specific direction pertaining to aquatic resources (e.g., Objectives 103, 104, 215, Standards 1201, 1203, 1205, Guideline 1115).

239-LVD. See Landscape Vegetative Diversity.

240-HAB. See Habitat Improvements.

## **Wilderness**

See Chapter Three, Management Area 1.1A for direction.



### **GOAL 3:**

**PROVIDE FOR SUSTAINED COMMODITY USES IN AN ENVIRONMENTALLY ACCEPTABLE MANNER.**





### **Goal 3: Provide for sustained commodity uses in an environmentally acceptable manner.**

#### **Discussion:**

The Forest Service is committed to multiple-use management while being sensitive to the environmental effects when commodities are produced. Commodities, including wood products, livestock, minerals and other products, contribute to the economies of local and regional communities. Ecosystem management can be more cost-effective when commercial benefits can result.

Sustainable economic activity depends upon sustainable ecosystems. Attention is focused on providing an acceptable combination of resources and management practices, including the amount of clearcutting and road construction, the management of livestock grazing, mine waste clean-up and mined land reclamation.

Congress has recognized the importance of sustainable commodity use in laws including the Multiple-Use, Sustained-Yield Act, the National Forest Management Act, the Organic Act, and the 1872 Mining Act.

In keeping with this direction, the Black Hills National Forest will be managed to emphasize long-term sustainable production of commodities for economies, communities and people in an environmentally acceptable manner. Ecosystems will be managed at the regional, landscape or watershed scale or as appropriate. Timber harvest and livestock

grazing will occur without impairing the health of ecosystems and in a manner compatible with other Forest uses. Acres of land suitable and available for these activities is displayed for timber harvest in Appendix G and for livestock grazing in Appendix I. Mineral exploration, development and production is facilitated in accordance with regulations in 36 CFR 228.

The Forest System Roads will be maintained to facilitate both commodity and amenity uses of the Forest, as well as administration and protection. (Also see Goal 4 for more information.) Lands identified as suitable for timber production will require construction of some new local Forest Development Roads (FDRs). The density of the FDR system where timber will be harvested will generally range between two and five miles per square mile, with the average density around 2.6 miles per square mile. Densities in the higher end of the range will be associated with cable logging areas. The density of wheel track roads is currently about 1.8 miles per square mile, but in the future will be less. Wheel track roads are not FDRs. Wheel tracks are old road templates or user defined routes. The combined FDR and wheel-track density is about 4.4 miles per square mile. This density may be higher when county, state, federal, and private roads are considered.

Open road densities typically will be lower in winter range and other sensitive areas. Over the



## Goals and Objectives

first decade, wheel track density will decline through obliteration. FDR density is not expected to change much in areas managed for

timber, but in other management areas densities may decrease.

### Objectives:

301. Produce on a sustained basis and make available up to 233 million pounds of forage for livestock and wildlife use each year (weather permitting). The location and amount of forage produced under the forest canopy will vary with the density of the overstory. This may necessitate changes in where and how both livestock and wildlife grazing takes place on a local basis over the rotation of a stand of timber.

- a. Livestock use will be up to 127 million pounds of forage per year or approximately 128,000 AUMs.
- b. Wildlife use will be up to 106 million pounds of forage per year or approximate population levels of 70,000 deer and 4,500 elk or other combinations that use the same amount of forage.

302. Maintain rangelands in satisfactory range condition.

- a. \*Management of rangelands determined to be neither meeting nor moving toward satisfactory rangeland condition in an acceptable timeframe, shall cause actions designed to move toward satisfactory rangeland condition within a stated timeframe to be implemented.
- b. \*In the absence of a site-specific planning process and an Allotment Management Plan, management direction for ongoing rangeland management activities on active allotments needed to address rangeland conditions and trends and species viability will be incorporated into the grazing permits through the annual operating instructions (AOI).

303. Offer the following allowable sale quantity (ASQ) of timber on suitable and available timber lands in the next decade:

ALLOWABLE SALE QUANTITY FROM SUITABLE LANDS: (DECADE TOTAL)	
SAWTIMBER	
Million Cubic Feet	181
(Million) Board Feet	838
ROUNDWOOD	
Million Cubic Feet	21
(Million) Board Feet	N/A
TOTAL	
Million Cubic Feet	202
(Million) Board Feet	838



304. On lands not identified as suitable and available for timber harvest, timber volume may be offered as a by-product of other vegetation management objectives. This volume would be offered in addition to the ASQ.

305. The ASQ in Objective 303 includes the following non-interchangeable component in the Norbeck Wildlife Preserve. This portion of the ASQ is not interchangeable with the volume outside the Preserve.

ALLOWABLE SALE QUANTITY FROM SUITABLE LANDS IN NORBECK WILDLIFE PRESERVE: (DECADE TOTAL)	
SAWTIMBER	
Million Cubic Feet	5.4
(Million) Board Feet	27.0
ROUNDWOOD	
Million Cubic Feet	1.0
(Million) Board Feet	N/A
TOTAL	
Million Cubic Feet	6.4
(Million) Board Feet	27.0

306. Clearcutting may only be used to meet ecosystem management objectives such as enhancing diversity, providing forage for wildlife, reducing insect and disease infestations, regenerating aspen and birch stands, improving visuals or increasing water yield. Patch clearcuts will be limited to 10 acres or less.

307. Provide Christmas trees and fuelwood for commercial or personal use in areas where compatible with other resource objectives.

308. Ensure that exploration, development and production of mineral and energy resources are conducted in an environmentally sound manner so that they may contribute to economic growth and the national defense.

309. Provide the following changes to the National Forest System roads and two-track roads in support of long-term sustainable production of commodities.

Road Construction	280 miles/decade
Road Reconstruction	870 miles/decade
Road Obliteration	140 miles/decade
Two-track Obliteration	270 miles/decade

310. Maintain the Forest Development Road (FDR) system and prioritize capital improvements in accordance with Forest Plan direction and road management objectives.



## GOAL 4:

**PROVIDE FOR SCENIC QUALITY, A RANGE OF RECREATIONAL OPPORTUNITIES, AND PROTECTION OF HERITAGE RESOURCES IN RESPONSE TO THE NEEDS OF THE BLACK HILLS NATIONAL FOREST VISITORS AND LOCAL COMMUNITIES.**





## Goal 4:

**Provide for scenic quality, a range of recreational opportunities, and protection of heritage resources in response to the needs of the Black Hills National Forest visitors and local communities.**

### Discussion:

The outstanding scenery of the Black Hills is a major attraction for visitors. The Forest Service will focus its management on maintaining this high scenic quality, especially within the landscapes seen from road and trail corridors, developed recreation sites, administrative sites, and the towns and cities within the Forest.

The Forest will provide a full range of recreational opportunities, managed to create a balance of public and private uses responsive to local, regional and national demands. The greatest demand and use of the Black Hills will continue to be driving for pleasure. The recreation opportunity spectrum (ROS) system will be used for facility planning and to direct recreation management.

Heritage resources will be protected and interpreted so that visitors can better understand their environment, and how

heritage resources fit into the context of multiple use management.

Forest trails will provide recreation opportunities for persons with disabilities, hikers, mountain bikers, cross-country skiers, snowmobilers, horseback riders, all-terrain vehicles, motorbikes and four-wheel drive vehicles. Trails typically will be managed to minimize user conflicts. The trail system will link many recreational points of interest, other agency trails, and communities to provide a diverse array of recreational opportunities and travel routes. The majority of trail opportunities will be oriented towards day use with opportunities for multi-day trips on the system of interconnecting trails. The trail system will optimize a diversity of experiences unless designed for specific activities, such as rock hounding, fishing, plant identification and viewing wildlife.

### Objectives:

#### Scenic Values

401. Review all existing projects and areas that do not meet the adopted Scenic Integrity Objective (SIO) specified for each management area, and set priorities for rehabilitation.



## Goals and Objectives

402. Provide natural appearing landscapes with diverse scenery and enhance opportunities to enjoy attractive settings. Maintain the following:

SCENIC INTEGRITY OBJECTIVES (Thousands of Acres)	
Very High	15
High	169
Moderate	511
Low	546
Very Low	4

## Heritage Resources

403. Improve the management of heritage resources and integrate them with recreation and education while providing for compliance with all applicable laws and regulations.

- a. Increase numbers and types of heritage resource interpretive sites and opportunities. Provide five projects per year during the plan period.
- b. Conduct six heritage resource stabilization and rehabilitation projects per year during the plan period.
- c. Nominate eligible sites (approximately five per year in the plan period) to the National Register of Historic places.
- d. Inventory 50,000 acres each year in the plan period for heritage resource sites.

404. Conduct three research projects each year to support heritage resource management.

405. Manage all heritage sites listed in the National Register of Historic Places in consultation with the State Historical Preservation Officer (SHPO) and the President's Advisory Council on Historic Preservation (ACHP).

406. Provide opportunities for the public to participate in heritage management activities, including the monitoring, excavation, and protection of archeological sites.

## Recreational Opportunities

407. Provide the following Recreation Opportunity Spectrum (ROS):

RECREATION OPPORTUNITY SPECTRUM (ROS) (Thousands of Acres)	
Primitive	15
Semi-Primitive Non-Motorized	38
Semi-Primitive Motorized	12
Roaded Natural	1102
Roaded Natural Non-Motorized	78
Rural	1



408. Manage recreation use to stay within the capacity for the ROS class:

ROS CLASS	CAPACITY RANGE RECREATION VISITOR DAYS (RVDs/ACRE)		
	Low	Moderate	High
Primitive	0.25	0.5	0.75
Semi-Primitive Non-Motorized	1.00	2.0	3.00
Semi-Primitive Motorized	1.50	3.0	4.50
Roaded Natural Non-Motorized	1.50	3.0	4.50
Roaded Natural	3.00	6.0	9.00
Rural	<<<< Design Capacity >>>>		

(See glossary for ROS capacity classes)

409. Construct and reconstruct the following recreation sites in the next decade:

- a. Construct facilities with a capacity of 1,065 People At One Time (PAOTs) in the next decade.
- b. Reconstruct facilities with a capacity of 3,950 PAOTs in the next decade.

410. Emphasize developed recreation opportunities not currently provided by the private sector. Coordinate with other recreation providers and businesses to offer the public a variety of recreation opportunity and services.

411. Correct or minimize potential risks to human lives or property in developed recreation sites. As annual inspections are done, schedule maintenance activities to correct or minimize identified problems.

412. Eliminate design barriers that prevent some groups such as the elderly and disabled from recreating in the National Forest.

413. Provide interpretation, information and environmental education as an important part of outdoor recreation. Use “Tread Lightly”, “Leave No Trace” and other techniques.

414. Extend efforts to provide outdoor recreation opportunities to customers from diverse cultural and demographic backgrounds. Include programs which interpret the traditions and heritage of ethnic groups in the National Forest.

415. Support permitted outfitters and guides operating in the National Forest.

- a. Provide for a balance between non-outfitted and outfitted publics to use the Forest.
- b. Administer permits and pursue and prosecute illegal outfitters and guides.
- c. Authorize outfitter guide use on the Forest by using temporary use permits.



## Goals and Objectives

### Trails

◇ 416. Maintain and construct trails as displayed in the following table:

Non-motorized Trails (1996)	293 miles
Motorized Trails (2009)	36 miles
Non-motorized Trail Construction	204 miles
Motorized Trail Construction, Improvement, or Conversion from Road to Motorized Trail	700 miles <sup>1</sup>
Total Forest Trail System	1,250 miles <sup>2</sup>
Construction/Improvement	800 miles <sup>1</sup>

<sup>1</sup> Per decade

<sup>2</sup> Total miles at end of decade

417. Coordinate trail development with the State Comprehensive Outdoor Recreation Plan (SCORP). Develop trail facilities in cooperation with other agencies and partners.

418. Enhance the trail system to disperse use away from the Black Elk Wilderness.

419. Provide for the annual designation and management of 350 miles of snowmobile trail by the States of Wyoming and South Dakota. Annual changes to the trail system should be limited.

### Travel

420. Manage travel corridors for federal, state and county roads.

- a. Meet a scenic integrity objective of high.
- b. Provide recreation facilities, trailheads, trail crossings and other road corridor components to meet demand.
- c. Include opportunities for pedestrians and bicycle ways.
- d. Use cooperative opportunities for development of outdoor facilities, such as provided for in the Intermodal Surface Transportation Efficiency Act (ISTEA) as an integral part of corridor planning.

421. Provide the following road system:

ROADS (By End of the First Decade)		
Suitable for Public Use		4700 miles
Passenger Car	1200 miles	
High Clearance Vehicles	3500 miles	
Roads Closed To Vehicles		500 miles
TOTAL		5200 miles

◇ Amendment #10 - May 2010 ◇



◇ 422. Provide the following off-road travel opportunities:

CATEGORY	PERCENTAGE OF FOREST
Off-road Motorized Travel Allowed Yearlong or Seasonally (Motorized Game Retrieval and Dispersed Camping) (Dispersed Camping Overlaps But is Not a Subset of Game Retrieval Area)	24%
Motorized Travel Prohibited Except Snowmobiles	1.2%
All Motorized Travel Prohibited	75%

◇ Amendment #10 - May 2010 ◇



## **GOAL 5:**

**IN COOPERATION WITH OTHER LANDOWNERS, STRIVE FOR IMPROVED LANDOWNERSHIP AND ACCESS THAT BENEFIT BOTH PUBLIC AND PRIVATE LANDOWNERS.**





## Goal 5:

**In cooperation with other landowners, strive for improved landownership and access that benefit both public and private landowners.**

### Discussion:

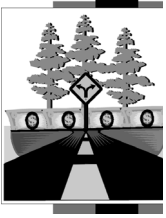
The Forest Service will seek to acquire lands that meet resource management objectives, and exchange into other ownership those lands that are considered to be in the public interest for conveyance. Non-National Forest lands within designated wilderness, critical ecosystems, outstanding scenic areas, within areas that are predominately National Forest, and threatened, endangered or sensitive species habitat will be typical of lands that are of interest for

acquisition.

National Forest lands that are isolated, near expanding communities, encumbered with substantial improvements under special use, and lands that have lost their National Forest character will be typical of lands considered for conveyance through exchange and other methods. Coordination and cooperation will be the key to successful management of National Forest lands within the forest and urban interface.

### Objectives:

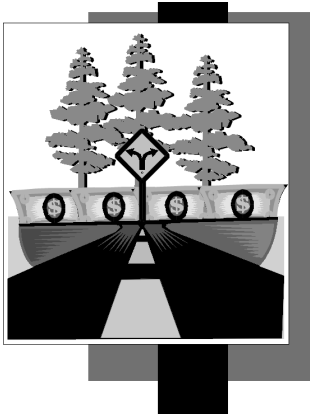
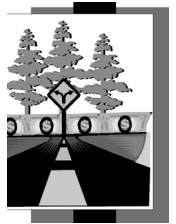
501. Conduct approximately 500 to 1000 acres of land exchange each year over the decade, such as through purchase, exchange or donation, whenever lands meet land-adjustment criteria in Guidelines 8101 through 8104.
502. Provide timely response to landowner requests for access across the National Forest.
503. Acquire approximately 25 rights-of-way each year to improve Forest access.
504. Actively seek local government and tribal government input and support for those exchanges that substantially change the balance of federal and private lands.
505. Work with conservation groups, state agencies and others to develop and implement cost-effective land and resource protection measures such as conservation easements, etc.



## GOAL 6:

**IMPROVE FINANCIAL EFFICIENCY FOR ALL PROGRAMS AND PROJECTS.**





## **Goal 6:**

### **Improve financial efficiency for all programs and projects.**

#### **Discussion:**

This goal addresses the fiscal aspects of managing the Black Hills National Forest. Sound business management, a healthy economy, and long-term multiple-use resource management can be mutually supportive.

Improving financial efficiency will increase the net revenues for those programs and projects where revenues exceed costs (“above costs”) and will reduce the differences between costs and revenues for those programs and projects which are provided where revenues are less than costs (“below costs”).

#### **Objectives:**

601. Strive to reduce net costs of both market and non-market programs.
602. Maintain the ability to respond to budget reductions by keeping overhead and fixed costs, including salaries, at less than 70 percent of the Forest budget.



## **GOAL 7:**

**EMPHASIZE COOPERATION WITH INDIVIDUALS,  
ORGANIZATIONS AND OTHER AGENCIES WHILE  
COORDINATING PLANNING AND PROJECT IMPLEMENTATION.**





### Goal 7:

**Emphasize cooperation with individuals, organizations and other agencies while coordinating planning and project implementation.**

#### Discussion:

Forest policy issues require close coordination with other government entities, partners and stakeholders. To the extent that the law will allow, planning and project implementation should include open sharing of information, local involvement, identification of shared needs, and commitment to action. The methods or approaches to this collaboration will vary but all encourage people to open up and get personally involved.

Forest leaders and managers will be knowledgeable and sensitive to American

Indian cultural issues to provide leadership in consulting, making decisions and implementing decisions. Protection of lands and resources necessary to American Indian beliefs and identity is an inherent part of the Forest Service's overall mission to serve people and protect the land. The key to protection, preservation and use of culturally important locations and resources will be consultation with tribal governments, political leaders, traditional practitioners, spiritual leaders, and other knowledgeable American Indian people.

#### Objectives:

701. Continue to cooperate with interested parties and organizations in the development of plans and projects.
702. Encourage cost sharing as part of cooperative efforts.
703. Seek partnerships with other service providers - federal, state, county, local and private sector - to define complementary roles that best meet customer needs.
704. Consult with tribal governments, traditional practitioners, and other knowledgeable individuals to identify important areas of American Indian religious significance.
705. Facilitate traditional and spiritual uses.
706. Cooperate with federal, state, county, local and tribal governments, individuals, and organizations in accordance with the laws discussed in the Preface- Table 1.
707. Allow military construction and tactical training exercises, consistent with resource protection, standards and guidelines, and safety of other Forest users.



## **GOAL 8:**

**PROMOTE RURAL DEVELOPMENT OPPORTUNITIES.**





## Goal 8: Promote rural development opportunities.

### Discussion:

“Rural development” is the management of human, natural, technical, and financial resources needed to improve living conditions, provide employment opportunities, enrich the cultural life, and enhance the environment of rural America. In the Forest Service, rural development will be accomplished through partnerships.

Rural communities are rising to the challenge of diversifying their economies. In the process, they are finding that total community development involves more than economic issues by themselves. It involves such things as

encouraging discussions on a variety of local issues, such as education in all of its forms, and enhancing cultural and historical experiences. A local collaborative planning process can encourage communities to reflect about where they have been, where they might want to go in the future, and how they will get there. The Forest Service can provide information and forecasts on future trends and events for local planning efforts.

The Rural Development Program provides an opportunity for eligible communities to focus on the collaborative planning process in efforts to meet the challenge of creating a more diverse and stable economy.

### Objectives:

801. Through the Forest Service’s “Strategic Plan for the 90s”<sup>1</sup>, provide leadership in working with rural people and communities to develop natural resource-based opportunities and enterprises that contribute to the economic and social vitality of rural communities.

802. Promote sustainable development in cooperation with local, county, state and American Indian partners.

803. Recognize the nature and extent of local economic dependencies on National Forest activities. Give special attention to resource programs that help diversify rural economies.

<sup>1</sup>USDA Forest Service. June, 1990. A Strategic Plan for the 90s: Working Together for Rural America.



## Goals and Objectives

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804. Coordinate with local communities to recognize local goals to maintain desired life styles and social values to participate with and provide appropriate assistance to development groups, and to be a reliable partner in giving sufficient advance notice about potential changes that may affect local economies.

805. Utilize human resource programs to achieve employment opportunities while meeting natural resource objectives. Provide human resource programs for 208 enrollee-years each year (including the Job Corps and the Senior Community Service Employment Program.)



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**GOAL 9:**

**PROVIDE HIGH-QUALITY CUSTOMER SERVICE.**





## **Goal 9: Provide high-quality customer service.**

### **Discussion:**

Forest employees will strive to meet the highest standards of customer service. Customer service performance will be compared to the best in the business, with simple rules, reasonable choices, flexibility and less red tape. Service standards will be posted and results will be measured against them.

Customers include recreation users, loggers, miners, permittees, interest groups, cooperating agencies, Congressional representatives, the media, and co-workers. They are many of the people with whom Forest employees interact. As customers are identified, they will be surveyed to determine the kind and quality of services they want and their level of satisfaction with existing services.

### **Objectives:**

901. Provide customers the kind and quality of services they reasonably want.
902. Provide customers with choices in both the sources of service and the means of delivery.
903. Respond to information needs of the public.
  - a. Consider the needs of the visitor in regard to timing (pre-trip planning, travel to destination and on-site), method (mail, phone, handouts, person to person), and the variety of materials (signs, posters, brochures, recreation opportunity guides, maps). Maintain information centers in public areas.
  - b. In a timely manner fully inform customers who need to know about the process required for grants, agreements, contracts, and permits.
904. Consider the international visitor in information services.
905. Maintain office hours that meet the public's demands. Provide alternatives for public contact when offices are closed. Provide reception areas, buildings and signs that convey a positive impression to our visitors.



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906. Provide consistent treatment of customers by coordinating fees and procedures between units before establishment.

907. Facilities and programs will be accessible to persons of all ages and abilities.

908. Provide means to address customer complaints.



**GOAL 10\*:**

**ESTABLISH AND MAINTAIN A MOSAIC OF VEGETATION CONDITIONS TO REDUCE OCCURRENCES OF CATASTROPHIC FIRE, INSECT, AND DISEASE EVENTS, AND FACILITATE INSECT AND DISEASE MANAGEMENT AND FIREFIGHTING CAPABILITY.**





## Goal 10:

**Establish and maintain a mosaic of vegetation conditions to reduce occurrences of catastrophic fire, insect, and disease events, and facilitate insect and disease management and firefighting capability.**

### Discussion:

Fire, insect, and disease events are a natural part of the Black Hills ecosystem and these events will always occur. Forest vegetation can be managed to reduce the extent and intensity of these events to provide a more stable flow of goods and services from the forest to the American people while staying within the historic range of variability and conserving plant and animal species. Ideally fire, insect, and disease events are not stand-replacing events, and a green forest will be returned. To move toward this goal, the Forest will establish and maintain a mosaic of vegetative conditions to reduce the extent and intensity of stand-replacing fire, insect, and disease events and facilitate insect and disease management and fire-fighting capability adjacent to at-risk communities, sensitive resources, non-federal land and generally across the forest.

Overall, the forest will be managed so that disturbances (including insects and diseases, fire, animals and human activities) are less likely to obstruct expected uses, values, commodities, or the desired extent and distribution of ecosystem components. The susceptibility of vegetation to stand-replacing fire and outbreaks of insect and disease pests will be reduced through vegetation management practices (such as silvicultural treatments and prescribed fire) that promote vigorous, productive, resilient and diverse ecosystems.

The forest's susceptibility to stand-replacing, high-intensity wildfire and insect epidemics will be reduced through a proactive approach to fire and fuels management. A combination of suppression, prevention and fuel treatment activities will be used to reduce the extent and intensity of fire and insect outbreaks while maintaining the forest as a biologically diverse and sustainable ecosystem.

### Objectives:

10-01. \*NEW. Manage for 50 to 75 percent moderate-to-low fire hazard in the wildland-urban interface and reduce fire hazard within proximity of structures to current NFPA standards except in Management Area (MA) 1.1 Black Elk Wilderness, MA 2.2 Research Natural Areas, MA 3.1 Botanical Areas, MA 4.2B Peter Norbeck Scenic Byway, and



## Goals and Objectives

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MA 5.4A Norbeck Wildlife Preserve. Manage the remainder of the Forest for 50 percent moderate-to-low fire hazard except in MA 1.1 Black Elk Wilderness, MA 2.2 Research Natural Areas, MA 3.1 Botanical Areas, MA 3.7 Late-successional Forest Landscapes, MA 4.2B Peter Norbeck Scenic Byway, and MA 5.4A Norbeck Wildlife Preserve.

10-02. \*NEW. The scenic integrity objectives within the wildland-urban interface will be moderate to low for 2 to 4 years after management activities have been completed.

10-03. \*NEW. Within 5 years of a formal research natural area (RNA) designation, manage for a moderate-to-low fire hazard between RNAs and at-risk communities (ARCs) and other resources as needed where the topography, wind conditions, and fuels could create the potential for high-intensity crown-fire spread to the ARCs or resources (e.g., sensitive plants, heritage resources), except those designated in Management Area 1.1 Black Elk Wilderness.

10-04. \*MOVED FROM OBJECTIVE 224. Reduce or otherwise treat fuels commensurate with risks (fire occurrence), hazard (fuel flammability), and land and resource values common to the area, using the criteria in Forest-wide Guideline 4110.

10-05. \*MOVED FROM OBJECTIVE 225. Manage wildfires using the appropriate response based on management area emphasis, existing values, risk of ignition, and fuel hazards within a given area.

10-06. \*MOVED FROM OBJECTIVE 226. Develop fuel management and protection strategies for intermixed land ownerships in partnership with private, state, and other federal agencies.

10-07. \*MOVED FROM OBJECTIVE 228. Where outbreaks of mountain pine beetle could present risks to management objectives for ponderosa pine, reduce acreage of ponderosa-pine stands that are in medium or high risk for infestation.

10-08. \*MOVED FROM OBJECTIVE 229. Using analyses of insect-and-disease occurrences, prioritize suppression strategies to meet management objectives and minimize value loss of tree vegetation affected by outbreaks of insect-and-disease pests.



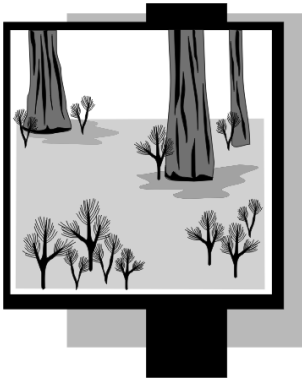
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**GOAL 11\*:**

**ENHANCE OR MAINTAIN THE NATURAL RATE OF RECOVERY AFTER SIGNIFICANT FIRE AND OTHER NATURAL EVENTS WHILE MAINTAINING A MOSAIC OF FUEL-LOADING CONDITIONS TO FACILITATE FUTURE FIRE SUPPRESSION ACTIVITIES.**





## Goal 11:

**Enhance or maintain the natural rate of recovery after significant fire and other natural events while maintaining a mosaic of fuel-loading conditions to facilitate future fire suppression activities.**

### Discussion:

After a disturbance event an ecosystem is capable of restoring itself over time. Management actions can be used to speed this process and reduce the intensity and extent of subsequent events such as a reburn of fallen dead trees over a large landscape. While some fire or insect-killed areas are an essential habitat component for several emphasis

species and will be conserved, treatments can be used to break up the continuity of dead trees to provide defensible space so fire crews can slow or stop wildfires. As with Goal 10, management is used to provide a more even flow of goods and services from the forest. The cost of treatment can be high and the economic value of insect or fire-killed trees is short, often less than a year. Treatment must occur shortly after the disturbance event to recover value.

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### Objectives:

11-01. \*NEW. Achieve a non-emergency watershed condition as soon as possible after an event but generally no later than 3 to 5 years.

11-02. \*NEW. Achieve a fuel-loading mosaic within 3 to 5 years and reassess as conditions change over time.

11-03. \*NEW. Following a wildfire, dead trees will be available for value recovery. Retain 50 percent of the recent (0 to 5 years) stand-replacing fire acreage up to 10,000 acres Forest-wide. Generally the highest priority areas to retain are those with greater than 70-percent pre-fire canopy closure. The following will be included in determining if the 10,000-acre figure has been met: stand-replacing fire and associated out-year fire/insect mortality, and relatively large blocks of stand-replacing insect outbreaks that can be combined into 1,000-acre areas. Standard 2301a does not apply to the salvaged area.

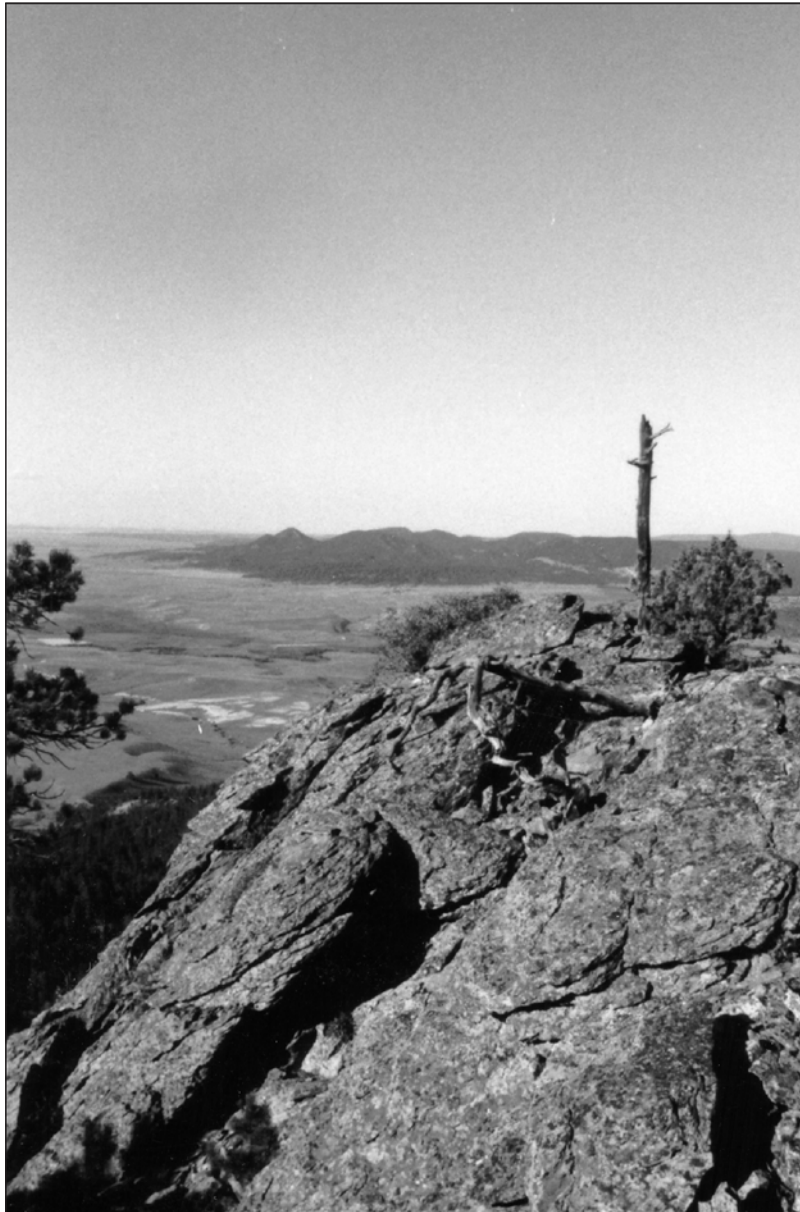
11-04. \*NEW. Encourage and conserve the establishment of shrubs in moderate-to-high intensity burn areas the first 5 years following a wildfire.



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# Chapter Two



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# Chapter Two:

# Standards and Guidelines

## Introduction

This chapter contains standards and guidelines that apply Forest-wide. Additional standards and guidelines are contained in Chapter Three for each management area. If Forest-wide standards and guidelines conflict with management area standards and guidelines, those that are more site-specific or more stringent apply. For instance, if a Forest-wide standard on riparian areas conflicts with a management area standard that is general direction for all lands within that area, the Forest-wide standard applies for riparian areas within the management area.

A **standard** is defined as a limitation on management activities that is within the authority and ability of the agency to meet or enforce. Standards are used to determine if individual projects are in compliance with the Plan. Deviation from the requirement requires a Plan amendment.

A **guideline** is a preferred or advisable course of action. Deviation from a guideline is permissible if the responsible official documents the reasons for the deviation.

Standards and guidelines that changed in the Phase II Amendment are noted with an asterik (\*). Appendix D in the Final EIS explains these changes with Alternative 2 being the current Forest Plan and Alternative 6 being the Phase II Amendment Forest Plan.

## Conformance With Laws And Regulations

Land management activities will be conducted in a manner that will comply with all applicable federal, state or local laws and regulations. A current listing is in Appendix C, but may not be all-inclusive.

Land management activities will also be conducted in a manner that will comply with Memorandums of Understanding with other agencies, and other agreements. A current listing is in Appendix C, but may not be all-inclusive.

## Conformance With Other Direction

Additional direction is contained in the Forest Service Manual and the Forest Service Handbook. A partial listing of some of the direction is contained in Appendix A and Appendix B. Additional direction is also provided in the following documents, which are hereby incorporated by reference into this Forest Plan.

- Best Management Practices for South Dakota (See Appendix D)
- Best Management Practices for Wyoming (See Appendix D)
- Best Minerals Management Practices
- Oil and Gas, Surface Operating Standards for Oil and Gas Exploration and Development (Gold Book)
- Federal Wildland Fire Management Policy and Program Review 12/18/95
- A Desk Reference for NEPA Air Quality Analyses for USDA Forest Service 1995

# PHYSICAL ELEMENTS



**Soils**



**Water**



**Riparian Areas,  
Water Influence Zones,  
and Wetlands**



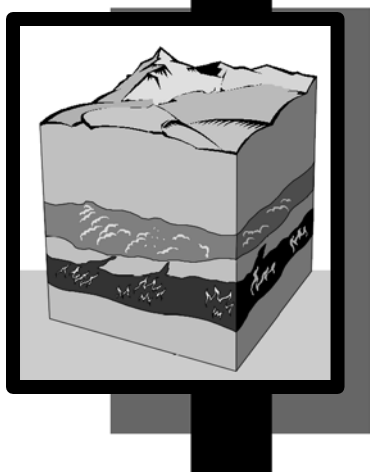
**Caves**



**Minerals and  
Energy Resources**



**Paleontology**



## Soils

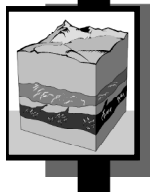
Further direction on Soil Quality Standards is in Rocky Mountain Region Supplement FSH 2509.18-Soil Management Handbook. (See Appendix B.) This direction applies to all allowed activities (livestock, recreation, special uses, etc.). This direction includes a 15 percent threshold on soil disturbance and a minimum percent effective ground cover for the first and the second year after disturbances.

Some standards as indicated also appear in the Rocky Mountain Region Watershed Conservation Practices (WCP) Handbook, FSH 2509.22. This handbook contains design criteria associated with each standard, which provides additional guidance and clarification.

### Soil Productivity

1101. When doing projects, analyze the cumulative effects of disturbances on long-term soil productivity. **STANDARD**

◊1102. Maintain or improve long-term levels of organic matter and nutrients on all lands. On soils with surface soil (A-horizon) thinner than 1 inch, topsoil organic matter less than 2%, or effective rooting depth less than 15 inches, retain 80-90% of the fine (less than 3 inches in diameter) post treatment logging slash in the stand after each clearcut and seed-tree harvest. Consider need for retention of coarse woody debris slash in each activity area to balance soil quality requirements and fuel loading concerns. **STANDARD** (Regional WCP Handbook Standard 14)



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## Soil Disturbance

1103. Manage land treatments to limit the sum of severely burned and detrimentally compacted, eroded, and displaced land to no more than 15 percent of any land unit. “Land treatments” are human actions that disturb vegetation, ground cover or soil. “Land unit” is a mapped land-type polygon or a mapped soil unit. **STANDARD** (Regional WCP Handbook Standard 13)

1104. Minimize soil compaction by reducing off-road vehicle passes, by skidding on snow, frozen or dry soil conditions, or by off-ground logging systems.

### GUIDELINE

1105. Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with the purpose of specific operations, local topography and climate. **STANDARD** (Regional WCP Handbook Standard 9)

1106. Stabilize and maintain roads and other disturbed sites during and after construction to control erosion. **STANDARD** (Regional WCP Handbook Standard 11)

1107. Where there is potential for toxic contamination of soil from ground disturbing activities (e.g., oil or gas drilling or mineral exploration), a contingency plan to prevent or rehabilitate soil contamination shall be developed. **STANDARD**

## Slope Stability

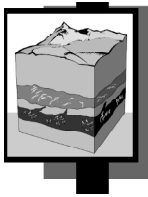
1108. Reduce resource damage and investment loss in areas that have a mass movement potential.

a. Perform an on-site slope-stability examination on slopes over 30 percent prior to design of roads or activities that remove most or all of the timber canopy for the following areas and soils:

1. Lakoa, Larkson, and Citadel soils found in the Bear Lodge Mountains;
2. Rockoa and Mathias soils on the Dakota Hogback; and
3. Citadel soil found in the northern and eastern Black Hills.

b. Perform an on-site slope-stability examination on slopes over 55 percent prior to design of roads or activities that remove most or all of the timber canopy on all other soil types. Limit intensive ground-disturbing activities on unstable slopes identified during slope-stability exams.

### GUIDELINE



## Rehabilitation and Revegetation

1109. Reclaim roads and other disturbed sites when use ends, as needed, to prevent resource damage. **STANDARD** (Regional WCP Handbook Standard 12)

1110. \*Initiate re-vegetation as soon as possible, not to exceed 6 months after termination of ground-disturbing activities. Re-vegetate all disturbed soils with native species in seed/plant mixtures that are noxious-weed free. On areas needing immediate establishment of vegetation, non-native, non-aggressive annuals (e.g., wheat, oats, rye) or sterile species may be used while native perennials are becoming established, or when native species are not available (e.g., during drought years or years when wildfires burn large acreages in the United States). Other aggressive non-native perennials (e.g., smooth brome, timothy) will not be used. Seed will be tested for noxious weeds. If mulches are used they are to be noxious-weed free. Weed-free alfalfa seed may be used only when native legume seed is not available and only when there is extensive disturbance associated with road construction or mine reclamation where topsoil is no longer available.

**STANDARD**

1111. Stabilize, scarify or recontour temporary roads, constructed skid trails and landings prior to seeding. **GUIDELINE**

## Surface Water Runoff

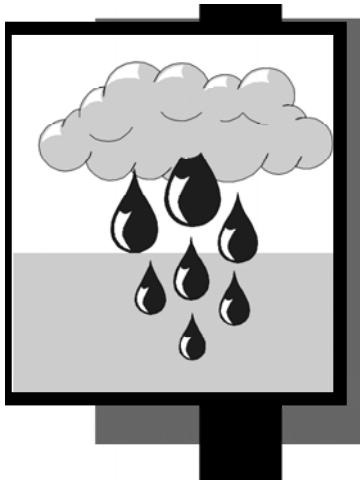
1112. Manage land treatments to maintain enough organic ground cover in each land unit to prevent harmful increased runoff. **STANDARD** (Regional WCP Handbook Standard 2)

1113. Construct roads and other disturbed sites to minimize sediment discharge into streams, lakes and wetlands. **STANDARD** (Regional WCP Handbook Standard 10)

1114. When construction of maintenance level 1 roads, temporary roads, skid trails and landings occur, install structures to divert runoff when needed. **STANDARD**

1115. When ground disturbing or vegetation management occur, use vegetative buffer strips or barriers to reduce sediment. Determine buffer width between stream and roads or trails using the equation in Appendix J. **GUIDELINE**

1116. Manage land treatments to conserve site moisture and to protect long-term stream health from damage by increased runoff. **STANDARD** (Regional WCP Handbook Standard 1)



## Water

Some standards as indicated also appear in the Rocky Mountain Region Watershed Conservation Practices (WCP) Handbook, FSH 2509.22. This handbook contains design criteria associated with each standard, which provides additional guidance and clarification.

### Stream Channels

1201. Conduct actions so that stream pattern, geometry, and habitats are maintained or improved toward robust stream health. **STANDARD** (Regional WCP Handbook Standard 5)

1202. Move stream channels only if all other practical alternatives to protect critical resources or capital investments have been exhausted and other legal requirements have been met. If streams are put in channels:

- a. Use methods that create stable beds and banks and beneficial aquatic habitat features; and
- b. Use stream geometry relationships to reestablish meanders, width/depth ratios, etc. consistent with each major stream type.

**GUIDELINE**

1203. Design and construct all stream crossings and other instream structures to provide for passage of flow and sediment, withstand expected flood flows, and allow free movement of resident aquatic life. **STANDARD** (Regional WCP Handbook Standard 4)

1204. Naturally occurring debris shall not be removed from stream channels unless it is a threat to life, property, important resource values, or otherwise covered by legal agreement. **GUIDELINE**



1205. When projects are implemented which can affect large, woody debris, retain natural and beneficial volumes of large, woody debris for fish habitat, stream energy dissipation, and as sources of organic matter for the stream ecosystem.

**GUIDELINE**

1206. When stabilizing damaged stream banks, preferentially use methods that emphasize vegetative stabilization. Use native vegetation for streambank stabilization whenever possible. **GUIDELINE**

1207. Manage water-use facilities to prevent gully erosion of slopes and to prevent sediment and bank damage to streams. **STANDARD** (Regional WCP Handbook Standard 8)

1208. Design water developments to minimize damage to channel capacity, aquatic habitat and riparian vegetation. **GUIDELINE**

### Instream Flows

1209. Manage vegetation treatments so that stream flows are not changed to the extent that long-term stream health is degraded. **STANDARD**

1210. Maintain enough water in perennial streams to sustain existing stream health. Return some water to dewatered perennial streams when needed. Comply with Section 505 of the FLPMA and 36 CFR 251.56 when issuing and re-issuing authorizations for water storage and diversion facilities. **STANDARD** (Regional WCP Handbook Standard 7)

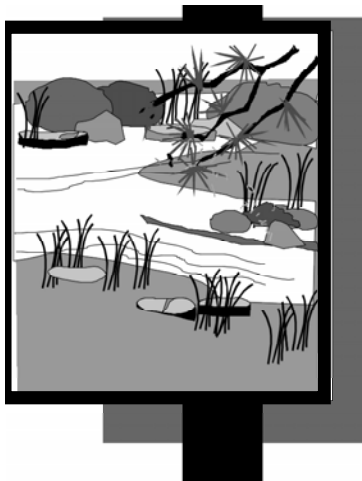
### Water Quality

1211. Place new sources of chemical and pathogenic pollutants where such pollutants will not reach surface or ground water. **STANDARD** (Regional WCP Handbook Standard 15)

1212. Apply runoff controls to disconnect new pollutant sources from surface and ground water. **STANDARD** (Regional WCP Handbook Standard 16)

1213. Apply chemicals using methods which minimize risk of entry to surface and ground water. **STANDARD** (Regional WCP Handbook Standard 17)

1214. Where natural background water pollutants cause degradation, it is not necessary to implement improvement actions. Short-term or temporary failure to meet some parameters of the applicable federal or state standard, such as increased sediment from road crossing construction or water resource development, may be permitted in special cases. **GUIDELINE**



## Riparian Areas, Water Influence Zones And Wetlands

Some standards as indicated also appear in the Rocky Mountain Region Watershed Conservation Practices (WCP) Handbook, FSH 2509.22. This handbook contains design criteria associated with each standard, which provides additional guidance and clarification.

### General

1301. In the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those actions that maintain or improve long-term stream health and riparian ecosystem condition. **STANDARD** (Regional WCP Handbook Standard 3)

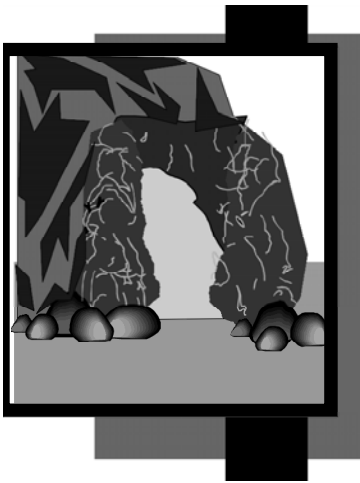
1302. Maintain long-term ground cover, soil structure, water budgets, and flow patterns in wetlands to sustain their ecological function, per 404 regulations. **STANDARD** (Regional WCP Handbook Standard 6)

1303. Vegetative type conversion should only be done in riparian areas to reestablish riparian vegetation for the protection and/or enhancement of those ecosystems. **GUIDELINE**

1304. As opportunities arise, and need dictates, relocate or implement mitigation measures for roads, trails, watering tanks, ponds, water catchments, and similar facilities currently located within the Water Influence Zone. **STANDARD**

1305. Locate camping sites for contractual purposes (e.g., mining, logging, etc.) such that channel and riparian areas are not impacted. **STANDARD**

1306. Prohibit log landing, decking areas and mechanical slash piling within riparian areas unless the integrity of the riparian area can be protected (e.g., frozen, snow-covered ground conditions). **STANDARD**



## Caves

### General

1401. \*For caves that have been determined significant or that have not been evaluated for significance [as per 36 CFR 290.3 (c) or (d)], manage to protect or enhance biological, cultural, ecological, hydrological, and physical characteristics with the following actions: **STANDARD**

- a. \*Avoid ground disturbance within 100 feet of an opening of a natural cave (see also Standard 3207); **STANDARD**
- b. Take measures to prevent human-caused changes in cave ecosystem, water, sediment, nutrient, chemical, airflow, humidity, or temperature regimes; **GUIDELINE**
- c. Gating of caves will only be done where it is the only viable option to protect cave resources. If a gate is utilized, it will allow free passage of bats, small animals, air and water. **GUIDELINE**



## Mineral And Energy Resources

### General Requirements - Reclamation

1501. A Plan of Operations shall contain proposed reclamation objectives and practices to maintain water quality and soil stability during mining and exploration activities, including post mining and exploration, and any temporary shutdowns. Reclamation objectives should include the planned uses of the management area or reasons why these uses can no longer be achieved. **STANDARD**

1502. Reclamation will be considered satisfactory when the disturbed area has been reclaimed in accordance with the operating plan. **STANDARD**

### General Requirements - Cave Protection

1503. For all operating plans or leasing activities proposed within 2 miles of Jewel Cave National Monument, or any known passageway that extends outside the Monument boundary, coordinate environmental assessment and operating plan approval with Monument personnel to assure protection of the cave complex. **STANDARD**

1504. In karst areas (Minnelusa and Paha Sapa or Madison Limestone), consider special precautions in operating plans to avoid damage to significant cave resources. **STANDARD**

### General Requirements - Riparian Protection

1505. Utilize existing regulations and policies to minimize effects of mineral extractions in riparian areas. If reclamation is not done concurrently, reclamation of mined areas will begin immediately following mining activity. Reclamation will follow existing landform and vegetative characteristics as much as feasible, unless management objectives require otherwise. **STANDARD**



1506. Minimize disturbance to the riparian area by mineral activities. Initiate timely and effective rehabilitation of disturbed areas and restore riparian areas to a state of productivity comparable to that before disturbance.

- a. Prohibit the depositing of material from drilling, processing or site preparation in natural drainages.
- b. Locate the lower edge of disturbed or deposited soil banks outside of natural drainages and riparian areas.
- c. Prohibit stockpiling of topsoil or any other disturbed soil in natural drainages or riparian areas.
- d. Prohibit mineral processing (milling) activities within natural drainages or riparian areas.

### **GUIDELINE**

1507. Confine heavy equipment use in riparian areas to areas necessary for mineral extraction. **GUIDELINE**

1508. Require monitoring of mining mitigative measures in riparian areas to insure that the measures are effective and in compliance with applicable water-quality standards. **GUIDELINE**

## **Locatable Minerals**

1509. \*For classified lands not withdrawn from operations under the general mining laws (research natural areas, national recreational areas, special interest areas such as “scenic”, “botanical”, and “geologic”, national historical sites, and “scenic” and “recreation” segments of wild and scenic rivers):

- a. The status of classified lands with respect to withdrawal must be checked before an operating plan can be approved.
- b. Provide for reasonable protection of the purposes for which the lands were classified.
- c. Reclaim disturbed lands to a condition suitable for the purposes for which the lands were classified.
- d. Pursue withdrawals where appropriate.

### **STANDARD**

1510. Developed recreation areas should be withdrawn from locatable mineral entry. Maintain existing withdrawals. **GUIDELINE**

1511. \*DELETED



## Leasable Minerals

1512. See the accompanying Oil and Gas Leasing Map for areas available for leasing and stipulations to be included in leases. **GUIDELINE**

1513. Include stipulations for floodplains and wetlands in all leases that contain floodplains or wetlands that exceed 200 meters in width. **STANDARD**

1514. The following stipulations are available for use when appropriate (See Appendix N):

- Lands of the National Forest System under jurisdiction of the Department of Agriculture
- No surface occupancy;
- Timing limitations;
- Controlled surface use; and
- Floodplain and wetland lease notice.

### **STANDARD**

1515. Recommend against, or deny consent to the Bureau of Land Management, for issuance of leases or permits where operational damages to surface resources would not be reclaimed to acceptable conditions (per Forest Plan direction). Operational damages to surface resources include impacts from surface-based access, product transportation, and ancillary facilities necessary to production and related operations. **STANDARD**

1516. Negative recommendations or consent denials will be based on consideration of the following criteria for areas with:

- a. Slopes steeper than 60 percent, or 40 percent in designated Wilderness and Classified Lands, high erosion hazard rating, and high geologic hazard rating.
- b. Low visual absorption capability that prevents reclamation to established Scenery Integrity Objectives.
- c. Habitat of individual plant or animal species identified as needing special management to prevent a need for listing as a threatened or endangered species, where the intrusion cannot be satisfactorily mitigated.

### **GUIDELINE**

1517. Forest Service authorization of geophysical prospecting will include terms and conditions controlling operating methods and times to prevent or control adverse impacts on surface resources and uses. **STANDARD**

1518. In designated Wilderness, geophysical prospecting, when authorized, will be subject to terms and conditions insuring that operations will be done by methods and at such times that there will be no adverse impacts on surface resources.



- a. Geophysical prospecting will be authorized on leased lands and on lands for which the Forest Service will recommend or consent to the issuance of leases and permits (leasable lands).
- b. Geophysical prospecting may be authorized:
  1. For no-lease lands adjacent to leased or leasable lands when the operator can show that geophysical information is necessary for exploratory drilling, or for field development on the leased/leasable lands in the event of a discovery of producible oil, gas, or geothermal resources on leased lands.
  2. For no-lease lands when the prospecting proponent can show that the geophysical information is necessary for extending subsurface interpretation from leased/leasable lands across no lease lands to other leased/leasable lands. The proponent must also demonstrate that the information can be gained in no other way without significant adverse impacts on surface resources.

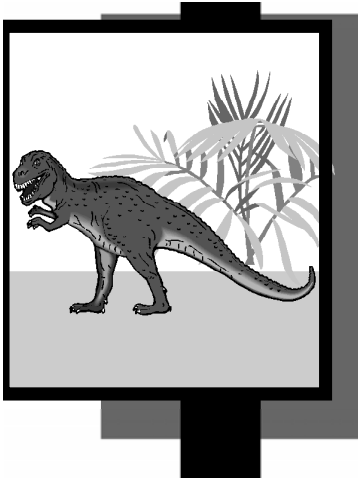
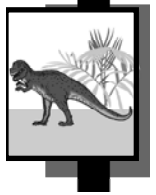
### **GUIDELINE**

1519. Developed recreation areas are unavailable for mineral leasing. **STANDARD**

1520. Surface management for private oil and gas minerals will be negotiated with the owner and operator to be as close as possible to the standards used for Federal minerals; prohibiting such development is not an alternative. **STANDARD**

### **Mineral Materials**

1521. Withdrawals of lands from operations of the mineral leasing acts will be requested only in exceptional situations. Normally, withdrawals from disposal of common variety mineral materials are unnecessary. The Forest Service has total discretionary authority for such disposal. **STANDARD**



## Paleontology

### General

1601. Provide permits for appropriate prospecting and collecting of paleontological resources by commercial, non-commercial, scientific, or educational institutions, and provide appropriate opportunities for recreational collection of paleontological resources, where consistent with Forest Plan goals and objectives. **STANDARD**

# BIOLOGICAL ENVIRONMENT - FLORA



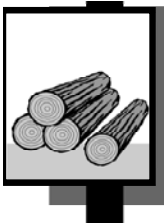
**Forested Landscapes**



**Hardwoods and Shrubs**



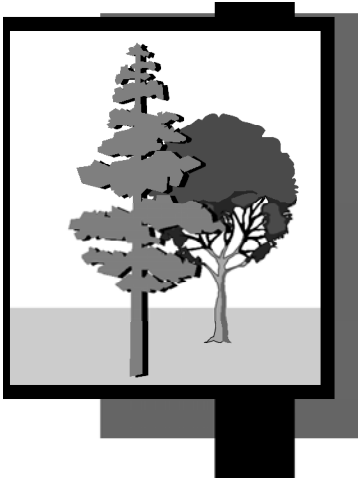
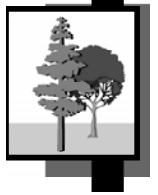
**Snags and Down Woody Material**



**Silviculture and Timber Harvest**



**Rangeland**



## Forested Landscapes

### Structural Diversity

2101. The maximum size of openings created by even-aged management will be 40 acres, regardless of forest type, with the following exceptions:

- a. Where proposals for larger openings are approved by the Regional Forester after a 60-day public review;
- b. Where larger openings are the result of natural catastrophic conditions of fire, insect or disease attack, or windstorm; and
- c. Where the area that is cut does not meet the definition of created openings.

**STANDARD** (Amended Regional Guide Silviculture Standards)

2102. The maximum width of openings created by the application of uneven-aged silviculture will be no greater than one to two-tree heights regardless of forest cover type. **GUIDELINE**

2103. The size of the uncut forest areas between openings must be based on the management objectives for the landscape unit being analyzed. If these objectives include creating a mix of vegetation types to benefit the kinds of wildlife associated with early successional stages and edges, the uncut units can be small. If the objectives include provisions for late successional associated species, the uncut units should be large enough to function as an ecological system not overly influenced by the edge. **STANDARD** (Amended Regional Guide Silviculture Standard)

2104. Artificially created openings, as discussed in Standards 2101, 2103 and 2106, will no longer be considered openings when they no longer meet the definition of structural stage 1, the grass/forb stage. However, this criteria



will be validated or modified based upon local conditions encountered during implementation. Criteria to consider in determining when an opening is no longer an opening include:

- a. The desired future conditions planned for the management area;
- b. Visual sensitivity of the area;
- c. The character of the landscape, abundance, quality, and need for cover for big game animals;
- d. Other vegetation that may be present (such as tall shrubs);
- e. Forest health;
- f. Need for seed sources;
- g. Need for interior forest area;
- h. Production of wood fiber; and
- i. Watershed and riparian area protection.

**STANDARD** (In Accordance with Amended Regional Guide Silviculture Standards)

2105. When developing openings in vegetative communities, copy naturally shaped edges. **GUIDELINE**

2106. Avoid altering more than one-third of the edge of a natural opening whenever an artificially created opening is adjacent to a natural opening. Additional edge should not be created until previously treated areas are considered closed, according to Standard 2104. This guideline does not apply to treatments intended to restore meadows to historic conditions. **GUIDELINE** (Amended Regional Guide Silviculture Guideline)

2107. \*Conifer encroachment on areas that have formed over grass, meadow, or hardwood vegetation may be treated (e.g., to conserve habitat for threatened, endangered, and sensitive species, management indicator species and species of local concern, maintain forage base, and landscape diversity). Consider soils that formed under grass or meadow plant communities and other factors in determining extent of pine-encroachment removal. **GUIDELINE**

2108. Consider the landtype association information in Appendix K in designing projects. **GUIDELINE**

2109. Where patch cuts are used to create the grass/forb structural stage on suitable lands, design their size, shape, and location to promote regeneration within five years of the harvest. **GUIDELINE**



## Hardwoods And Shrubs

### Hardwoods

2201. \*DELETED

2202. In landscapes with multiple aspen clones, manage for a mix of structural stages. Conserve the structural diversity of multi-storied stands. **GUIDELINE**

2203. \*An aspen stand shall be considered regenerated when it has yielded per acre 2,000 stems at least 6-feet tall with unbrowsed terminal leaders. **GUIDELINE**

2204. Conserve live aspen with signs of cavity nesting, where this will not conflict with clone regeneration. **GUIDELINE**

2205. \*When treating mixed conifer/hardwood stands to meet the hardwood restoration objective (201), remove all conifers. **STANDARD**

2206. Allow no new developed recreation sites in aspen/birch stands. Improvements to existing sites should be made by carefully considering safety and aesthetics. **GUIDELINE**

2207. \*Locate new livestock/wildlife water sites (e.g., drinking structures) outside of hardwood communities, except when no other option is available. **STANDARD**

2208. \*DELETED



## Snags And Down Woody Material

### Snags

2301. \*DELETED

a. \*Retain all snags greater than 20-inch dbh unless a safety hazard. If snag densities within a project area are below Objective 211, retain all snags unless they are a safety hazard. If large snags (>14 in dbh) are not available, retain snags in the largest size class available. This standard does not apply to areas salvaged under Objective 11-03. **STANDARD**

b. \*Retain at least six hardwood snags per acre in hardwood stands. Retain all snags in hardwood stands with snag density of less than six per acre. **STANDARD**

c. \*DELETED

d. \*DELETED

e. \*DELETED

2302. \*DELETED

2303. \*DELETED

2304.

a. Prohibit cutting of standing-dead trees for fuelwood, except in designated areas. **STANDARD**

b. \*DELETED



2305. All soft snags should be retained unless they are a safety hazard. **STANDARD**

2306. **\*DELETED**

### **Down Woody Material**

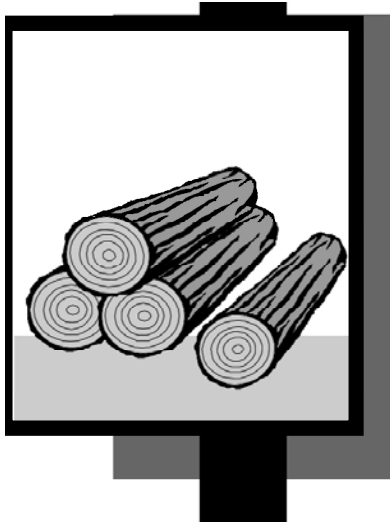
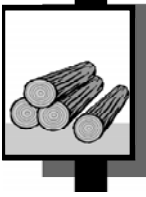
2307. Leave large woody debris on harvested or thinned sites to help retain moisture, trap soil movement, provide microsites for establishment of forbs, grasses, shrubs, and trees, and to provide habitat for wildlife. **GUIDELINE**

2308.

a. \*During vegetation management activities on ponderosa pine forested sites, retain an average of at least 50 linear feet per acre of coarse woody debris with a minimum diameter of 10 inches. On white spruce forested sites retain an average of at least 100 linear feet per acre of coarse woody debris with a minimum diameter of 10 inches.

**STANDARD**

b. **\*DELETED**



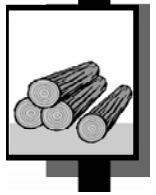
## Silviculture and Timber Harvest

### Allowable Sale Quantity and Suitable Lands

2401. For the decade beginning for the fiscal year the Record of Decision is signed, do not offer more than the allowable sale quantity (ASQ) of 181 million cubic feet of sawtimber and 21 million cubic feet of products other than logs (POL). Deviation from this standard is permitted in accordance with 36 CFR 219.27(c)(2). **STANDARD**

2402. \*After the first decade, until the plan is revised, do not offer more than 181 million cubic feet of sawtimber and 21 million cubic feet of POL in the second decade. **GUIDELINE**

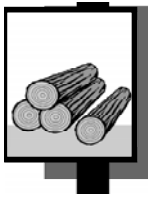
2403. Do not substitute or interchange volume allowed to be sold in the Norbeck Wildlife Preserve with volume outside of Norbeck. **STANDARD**



2404. Volume which is chargeable to the ASQ is all material on suitable and available land (summarized below) within utilization Standard 2405. **STANDARD**

**Suitable and Available Land by Management Area**

MANAGEMENT AREA	AVAILABILITY
1.1A Black Elk Wilderness	Not Available
3.1 Botanical Areas	Not Available
3.2A Inyan Kara Mountain	Not Available
3.31 Backcountry Motorized Recreation Emphasis	Not Available
3.32 Backcountry Non-motorized Recreation Emphasis	Not Available
3.7 Late Successional Forest Landscapes	Not Available
4.1 Limited Motorized Use and Forest Product Emphasis	Portions Suitable and Available
4.2A Spearfish Canyon	Not Available
4.2B Peter Norbeck Scenic Byway (Within Norbeck Wildlife Preserve)	Portions Suitable and Available
5.1 Resource Production Emphasis	Portions Suitable and Available
5.1A Southern Hills Forest and Grassland Areas	Not Available
5.2A Fort Meade VA Hospital Watershed	Portions Suitable and Available
5.3A Black Hills Experimental Forest	Not Available
5.3B Sturgis Experimental Watershed	Not Available
5.4 Big Game Winter Range Emphasis	Portions Suitable and Available
5.4A Norbeck Wildlife Preserve	Portions Suitable and Available
5.43 Big Game and Resource Production	Portions Suitable and Available
5.6 Forest Products, Recreation and Big Game Emphasis	Portions Suitable and Available
8.2 Developed Recreation Complexes	Portions Suitable and Available



## Utilization

2405. Utilization standards for live and dead material are:

TYPE OF PRODUCT	MINIMUM DBH	MINIMUM TOP DIAMETER	LENGTH (Feet)	MERCHANTABILITY FACTOR
<b>LIVE TREES</b>				
Sawtimber				
Conifers	8"-9"	6"-7"	8'-10'	10.67 (33.3%)
Products Other Than Sawtimber	5"-6"	4"	6.5'-8.3'	Variable
<b>DEAD TREES</b>				
Sawtimber				
Conifers	7"-12"	7"-10"	8'-16'	10.67 (33.3%)
Products Other Than Sawtimber	5"	4"	Variable	Variable

**STANDARD**

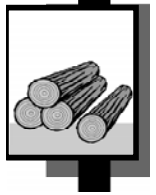
## Silvicultural Prescriptions

2406. The landscape should be the primary unit of analysis for silviculture.

**GUIDELINE** (Amended Regional Guide Silviculture Guideline)

2407. Silvicultural standards and guidelines should be applied at the watershed and landscape level, as well as to individual stands of trees. The standards and guidelines must be applied in such a way as to perpetuate a range of environmental conditions while supplying goods and services to people. **GUIDELINE**

(Amended Regional Guide Silviculture Guideline)



2408. The scientifically defined silviculture systems, shown by forest cover type, which meet the management objectives for the landscape or individual stands of trees within a landscape setting, are acceptable.

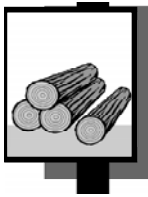
**Acceptable Silvicultural Systems**

FOREST COVER TYPE	EVEN-AGED SYSTEMS	TWO-AGED SYSTEMS	UNEVEN-AGED SYSTEMS
Ponderosa Pine	Shelterwood, Clear-cut and Seed Tree	Irregular Shelterwood	Group Selection and Single-Tree Selection
Aspen/Birch (See Below)	Coppice	Coppice with Standards	Group Selection
White Spruce	Shelterwood and Clear-cut	Irregular Shelterwood	Group Selection and Single-Tree Selection
Lodgepole Pine Douglas-fir	Shelterwood, Clear-Cut and Seed Tree	Irregular Shelterwood	Group Selection

NOTE: For aspen in the above table, “Coppice” is a vegetation reproduction method with clearcutting. Clearcutting stimulates sprouting from the residual roots. “Coppice with Standards” selects overstory trees reserved for a longer rotation at the time each crop of coppice material is cut.

Use of group selection as an appropriate silvicultural system in aspen is currently under study to determine regeneration success, but is authorized on a test basis.

- a. Both even-aged and uneven-aged management systems can be used and applied at scales ranging from a few acres to many hundreds of acres. **STANDARD** (Amended Regional Guide Silviculture Standard)
- b. These silvicultural systems are to be applied in a manner that will promote natural regeneration. **STANDARD** (Amended Regional Guide Silviculture Standard)
- c. Tree stand vegetation management treatments are to be approved by certified silviculturists. **STANDARD** (Amended Regional Guide Silviculture Standard)
- d. The silvicultural systems identified can be used to convert uneven-aged stands to even-aged management and even-aged stands to uneven-aged management. **STANDARD** (Amended Regional Guide Silviculture Standard)
- e. **\*DELETED**
- f. For Two-Step shelterwood system: Residual stocking levels for seed cuts range from 20 to 50 basal area. **GUIDELINE**



2409. For precommercial and commercial thinning:

a. Use thinning practices which consider genetic diversity and competition among the trees for water, nutrients and light. The frequency of thinning should depend upon the tree species, financial efficiency, and the site growing conditions (as commonly measured by site index). **GUIDELINE** (Amended Regional Guide Silviculture Guideline)

b. In general, use the stocking charts in Appendix H to implement intermediate cuttings in even-aged, suitable timberland stands to effectively meet land management direction and as a guideline for individual stand management. **GUIDELINE**

2410. If the silviculture system being applied to a particular area of the landscape is uneven-aged, harvest trees designated for commercial timber production based on the desired density as determined by age class or size, and the objective for the area. **GUIDELINE** (Amended Regional Guide Silviculture Guideline)

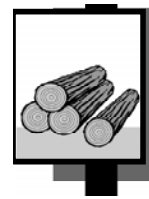
2411. \*Regeneration harvests of even-aged timber stands should not be undertaken until the stands have generally reached (or surpassed 95 percent of the) culmination of the mean annual increment measured in cubic feet. Exceptions may be made where resource management objectives or special resource considerations require earlier harvest. Exceptions include serving specific management objectives such as forest health condition, wildlife diversity, reduction of fuels adjacent to plant species of concern occurrences, and ecosystem restoration and management. **GUIDELINE**

2412. Where appropriate, reduce competition between desired trees and other vegetation. **GUIDELINE** (Amended Regional Guide Silviculture Guideline)

2413. Where disease can be spread from an uncut stand to a newly regenerated stand, it is desirable to cut the adjacent infected stand before the newly regenerated stand reaches a height of 6 feet. **STANDARD** (Amended Regional Guide Silviculture Standard)

2414. \*For travel corridors and other places where scenic quality is emphasized, manage tree stands to enhance the scenic quality and recreational opportunities. Manage for a variety of scenic conditions including areas of large, yellow-barked ponderosa pine in open, park-like conditions, and scattered, young ponderosa pine, hardwoods, open meadows and grassland conditions. **GUIDELINE**

2415. Regulate logging activities in campgrounds so they do not conflict with the managed use season, the ROS class, or the adopted SIO. **GUIDELINE**



## Reforestation

2416. The following restocking requirements apply on lands identified as suitable and available for timber production.

a. When trees are harvested to meet timber production objectives, the cutting should be made in such a way that there is assurance that the technology and knowledge exists to adequately restock these areas with trees within 5 years after final harvest.

**STANDARD** (Amended Regional Guide Silviculture Standard)

b. The minimum level considered adequate for restocking is 150 seedlings per acre for conifers. This represents what is required, considering natural mortality, to produce a merchantable timber stand at rotation age without intermediate treatments.

**STANDARD**

c. \*When intermediate treatments will be done in the future, the minimum level considered adequate for restocking is 300 seedlings per acre for conifers, except where a lower stocking is needed to maintain fire-hazard-reduction objectives.

**GUIDELINE**

d. No minimum seedling height requirements are specified. Seedlings must have survived a minimum of one year and be expected (on the basis of research and experience) to be able to produce the desired future stand conditions as specified in the Forest-wide objectives and management area prescriptions. **STANDARD** (Amended Regional Guide Silviculture Standard)

2417. When trees are to be harvested on other than suitable lands, exceptions to the 5-year restocking standard are appropriate as documented in project decisions when the harvest meets one of the following criteria:

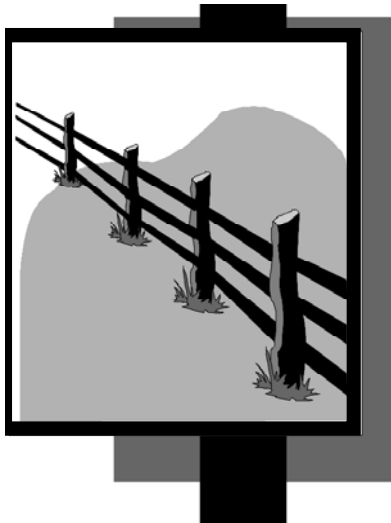
- a. For permanent openings that serve specific management direction;
- b. Where provided for in specific management practices and prescriptions; or
- c. Where it is desirable to delay the onset of regeneration and crown closure to meet specific desired conditions and management objectives.

**GUIDELINE**

2418. In most circumstances, rely on or make primary use of those silviculture systems which ensure regeneration of forest stands through natural seeding and suckering. **GUIDELINE** (Amended Regional Guide Silviculture Guideline)

2419. Use artificial regeneration methods when it is not possible to rely on the natural sequence of events or environmental conditions to regenerate the forests within five years. **GUIDELINE** (Amended Regional Guide Silviculture Guideline)

2420. \*Fuelwood removal permits will be focused within the wildland-urban interface. **GUIDELINE**



## Rangeland

### General

2501. \*DELETED

2502. Convert season-long grazing systems to systems which require more intensive management, such as multiple pasture deferred or rest rotation systems, as opportunities permit. **GUIDELINE**

2503. Developed recreation sites will be closed or restricted to grazing through use of fencing, as opportunities permit. However, grazing may be used as a management tool in these areas. Recreational livestock will normally be fed in designated areas. **GUIDELINE**

2504. The site-specific rangeland analysis necessary for preparation of allotment management plans shall document selected desired conditions and evaluate whether the designated area is at, moving towards, or moving away from the desired conditions.

- a. Satisfactory range conditions occur when the existing conditions are at, or progressing toward the desired conditions identified through the project planning process.
- b. \*When trends toward satisfactory range conditions are not achieved within 5 years by changes in grazing systems, allowable use or residual guidelines, more restrictive use or residual guidelines, changes to the grazing system shall be adopted, or cattle use be removed or relocated for a period of time.

**GUIDELINE**



## Proper Use or Residual Levels - Riparian/Uplands

2505. Livestock and wild herbivore allowable forage use or residual levels on rangelands by grazing system and range condition are as follows:

**Proper Allowable Use Guidelines**  
(Percent Utilization by Weight Each Year)

SEASON OF USE	SATISFACTORY CONDITION	UNSATISFACTORY CONDITION
Continuous Use Spring/Summer	0-45%	0-40%
Continuous Use Fall/Winter	55-60%	0-55%
Deferred Rotation	0-50%	0-45%
Rest Rotation	0-55%	0-50%

## Residual Levels For Wetlands And Riparian Areas

\*Residual levels (or remaining height of key plant species) will be prescribed for riparian areas in the allotment management plan (AMP) or the annual letter of operating instructions (AOI) to the livestock permittee. Residual levels will be based upon specific objectives for the location in question and will consider season of use and range conditions. **STANDARD**

Allowable use and/or residual levels:

a. ~~\*DELETED~~

b. ~~\*DELETED~~

c. Utilization of willows, shrubs, woody vines or young deciduous trees (such as aspen, birch and oak) in any year by livestock or wildlife is limited to browsing 40 percent of the total individual leaders produced in that year (not to be confused with 40 percent use on each and every leader produced).

d. Remove livestock from the grazing unit or allotment when further utilization on key areas in that year will exceed proper allowable use or prescribed residual level in the Forest Plan, AMP, or AOI for either grass and forbs or shrubs.

e. \*No authorized utilization will be allowed by domestic livestock on known occurrences of willow emphasis species (e.g., *Salix candida*, *Salix serissima*, *Salix lucida*).

f. \*Implement additional measures to assure avoidance of livestock use on *Carex alopecoidea*. Restrict livestock use of all or portions of 5 of the largest geographically spaced occurrences at site numbers: CAAL8-19, CAAL8-20, CAAL8-22, CAAL8-30, CAAL8-31.

**STANDARD**



2506. Develop site-specific vegetation utilization or residual guidelines during rangeland planning, and document them in allotment management plans (AMPs). In the absence of updated planning, the utilization guidelines as shown or residual guidelines documented in the AOI will apply. **GUIDELINE**

### **Use of Forage in Fenced Riparian Pastures**

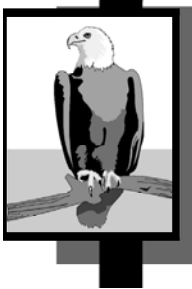
2507. \*Allow use of forage by livestock and wildlife in fenced riparian pastures so long as it meets the objectives of maintaining, enhancing, or conserving the riparian ecosystem and emphasis species persistence. **STANDARD**

2508. \*DELETED

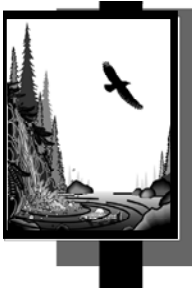
# BIOLOGICAL ENVIRONMENT - FAUNA



## Management Indicator Species



## Endangered, Threatened, or Sensitive Species - Protection and Management



## General Wildlife and Fish Direction



## Management Indicator Species

\*The following species should be used as management indicator species (MIS). The indicators or their habitats will be monitored to indicate overall changes in the forest ecosystem. MIS will generally be monitored using trends in habitat; however, when available, population trends may be used as a strong indicator of management response. Population monitoring will be discretionary as provided by 36 CFR 219.14.f.(2005).

- Black-backed woodpecker (*Picoides arcticus*)
- Brown creeper (*Certhia americana*)
- Golden-crowned kinglet (*Regulus satrapa*)
- Grasshopper sparrow (*Ammodramus savannarum*)
- Ruffed grouse (*Bonasa umbellus*)
- Song sparrow (*Melospiza melodia*)
- Beaver (*Castor canadensis*)
- White-tailed deer (*Odocoileus virginianus*)
- Mountain sucker (*Castostomus platyrhynchus*)



## Endangered, Threatened or Sensitive Species - Protection and Management

### Endangered and Threatened Species

3101. To protect endangered and threatened species:

- a. \*Organochlorine pesticides will not be used as chemical agents on the Black Hills National Forest.
- b. \*Prohibit new disturbances not existing at the time of bald eagle nest initiation, that may detrimentally influence nest success within one mile of bald eagle nests during the nesting season (February 1 through September 1). The distance may be reduced where forest characteristics or topography reduce the line-of-site distance from the nest, based on site-specific analysis.
- c. \*Protect traditional communal bald eagle winter roost sites. Restrict activities that may disturb bald eagles within one mile of communal roosting areas from November 1 through April 1.
- d. In stands being used by bald eagles on a transitory basis, avoid timber harvest activities when in use. Harvest may resume when birds have vacated the stands.

**STANDARD**

### Sensitive Species

3102. \*Where caves are important nurseries or hibernacula for sensitive and local concern bat species protect the caves and maintain their microclimates when designing management activities (e.g., timber harvest, road construction, recreation facilities). Protect known bat day and night roosts. **STANDARD**



3103. \*Manage known sensitive species and species of local concern snail colonies to:

- a. \*Retain overstory sufficient to maintain moisture regimes, ground level temperatures and humidity.
- b. \*Retain ground litter, especially deciduous litter.
- c. \*Avoid burning, heavy grazing, off-highway vehicles (OHVs), heavy equipment and other activities that may compact soils or alter vegetation composition and ground cover.
- d. \*If prescribed burning is unavoidable, burn when snails are hibernating, usually below 50 degrees Fahrenheit, and use fast-moving fires to minimize effects to snails.
- e. \*Control invasive weeds, but use herbicides when snails are not on the surface, and treat individual plants rather than broadcast application.

**STANDARD**

3104. \*Do not develop springs or seeps as water facilities where sensitive species or species of local concern exist unless development mitigates an existing risk.

**STANDARD**

3105. \*Consider habitat needs (survey as appropriate) of regal fritillary and Atlantis fritillary butterflies prior to prescribed burning on prairies or meadows. This is especially important for prescribed burns scheduled from September through April. Design the project to conserve important habitat components of known sightings. **GUIDELINE**

3106. \*Riparian areas or wetlands where populations of sensitive species are located are to be avoided during ground disturbing activities. Use one or more of the following (or other mitigation measures) tied to the site-specific conditions for disturbances adjacent to known occurrences:

- a. \*Avoid removing riparian or wetland vegetation; filling or dredging the riparian area or wetland; diverting stream flow from the current channel.
- b. \*Prevent storm runoff from washing silt into the stream or wetland.
- c. \*Reseed and/or replant cut and fill slopes with native seed and/or native plants promptly to control erosion and for prevention of noxious-weed infestations. Use appropriate measures to control erosion on disturbed areas that are steep, are highly erosive, and/or adjacent to the riparian area.
- d. \*Timing, placement, and installation of temporary stream diversions shall allow passage of aquatic life and protect sensitive and species of local concern.

**STANDARD**

3107. \*DELETED



## Sensitive Species - Goshawks

3108. \*The following additional protective measures will apply relative to the northern goshawk for all projects involving the removal of trees in suitable habitat, except those done for the express purpose of enhancing goshawk habitat:

a. \*Identify nest areas around historically active nests. Nest areas shall consist of 180 acres best suited for nesting habitat within one-half mile of the nest and greater than 300 feet from buildings. Nest areas need not be contiguous but must occur in 30-acre units or larger. Nest areas shall include alternate nests if known. If these conditions cannot be met, then nest areas will include stands that are not currently suitable but that could be managed to meet nesting conditions over time. Vegetation management activities within nest areas shall be limited to those that maintain or enhance the stand's value for goshawk.

b. \*If a nest area described above occurs within one-half mile of the project area and a protected area has not yet been identified for that nest, the project analysis will determine whether some of the protected acreage should occur within the project area.

### STANDARD

c. \*DELETED

d. \*DELETED

3109. \*DELETED

3110. \*DELETED

3111. \*From April 1 through August 15, minimize additional human-caused noise and disruption beyond that occurring at the time of nest initiation (e.g., road traffic, timber harvests, construction activities) within one-half mile of all active goshawk nests up until the nest has failed or fledglings have dispersed. **STANDARD**

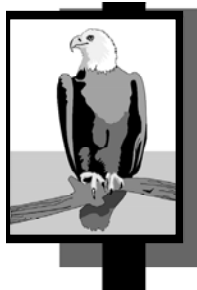
3112. \*DELETED

3113. \*DELETED

3114. \*DELETED

## Sensitive Species and Contractual Obligations (SSC)

3115. \*A R2 sensitive species or species of local concern located after contract or permit issuance will be appropriately managed by active coordination between permittee, contractor or purchaser, Forest Service line officer, project administrator, and biologist and/or botanist. Solutions need to be based on the circumstances of each new discovery and must consider the species need, contractual obligations and costs, and mitigation measures available at the time of discovery. **STANDARD**



3116. Avoid creating barriers (e.g., new open roads) between red-bellied snake hibernacula and wetlands. **STANDARD**

3117. In vegetation treatment units, leave 1 pile of woody material per 2 acres to create near-ground structure for small mammal species, except within 300 feet of buildings. **STANDARD**

3118. **\*DELETED.**

3119. **\*NEW.** Issue permits to collect sensitive or species of local concern plants or plant parts only for scientific or educational purposes, but not for commercial or personal use except for the provisions of Standard 7103. Such collection must not jeopardize the continued vigor or existence of a plant population. Collecting of plants or plant parts in Management Areas 1.1A Black Elk Wilderness, 2.2 Research Natural Areas, 3.1 Botanical Areas, or at the Cascade Complex in Management Area 8.2 Developed Recreation Complexes shall not be allowed except by permit issued by the Forest Supervisor for scientific or educational purposes. **STANDARD**

3120. **\*NEW.** Do not spray grasshoppers within 0.25 mile of known burrowing owl nests. **STANDARD**

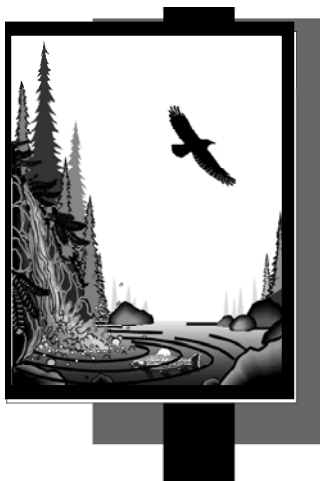
3121. **\*NEW.** Design new structures and facilities in or near prairie dog towns or occupied mountain plover habitat with low profiles and/or perch inhibitors. This does not apply to structures and facilities less than 4 feet in height or those not expected to be used as hunting perches by raptors. **STANDARD**

3122. **\*NEW.** Prohibit development of new facilities within 0.25 miles of known mountain plover nests or nesting areas. This does not apply to pipelines, fences and underground utilities. **STANDARD**

3123. **\*NEW.** Prohibit the following activities in mountain plover nesting areas or within 0.25 miles of plover nests from March 15 through July 31: construction (e.g., roads, water impoundments, oil and gas facilities), reclamation, seismic exploration, gravel mining, well drilling, and prescribed burning. **STANDARD**

3124. **\*NEW.** During aspen restoration treatments, conserve live aspen with cavities. **STANDARD**

3125. **\*NEW.** Prescribe burn no more than 60 percent of any contiguous grassland area at a time and burn in early spring or fall. **STANDARD**



## General Wildlife and Fish Direction

### General

3201. \*DELETED

3202. Structures, such as fences and roads will be designed and built so that they do not create unnecessary or unreasonable barriers or hazards for wildlife and people. **GUIDELINE**

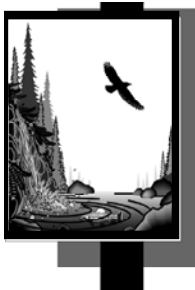
3203. Provide big game screening along at least 20 percent of the edges of arterial and collector roads. Consider vegetation, slopes, landform, etc. in evaluating available screening. **GUIDELINE**

3204. \*Protect known raptor nests. Consider potential effects of disturbance, nesting phenology, human activities existing at onset of nest initiation, species, topography, other R2 sensitive species and plant species of local concern, forest cover, nest protection standards and recommendations used by state or federal agencies, and other appropriate factors when designing protection. **STANDARD**

3205. Provide at least 2 to 6 turkey-roost sites per section, consisting of mature trees with an average diameter at breast height (dbh) of 10 to 14 inches, widely spaced horizontal branches, and basal areas at least 90 square feet per acre. Sites should be at least one-fourth acre in size and not isolated from adjacent forested stands. Emphasis should be on the upper third of east-facing slopes if available.

**GUIDELINE**

3206. \*Work with state wildlife agencies to determine suitability and need for transplanting and re-introducing wildlife and plant species for viability purposes. At a minimum, evaluate the following prior to initiating transplants and reintroductions:



- a. Project goals;
- b. Population objectives;
- c. \*Suitable transplant and reintroduction sites;
- d. Likely extent of habitat;
- e. Species under consideration with respect to existing wildlife populations and land uses;
- f. Historical range;
- g. \*Transplant and reintroduction policy for wilderness areas;
- h. \*Risks to R2 sensitive and species of local concern.

**GUIDELINE**

## **Bats**

3207. \*Where caves or abandoned mines serve as nurseries or hibernacula for bats, vegetative changes within 500 feet of the opening are allowed only if needed to maintain bat habitat or if topography or other features protect the openings from disturbance. **STANDARD**

3208. \*Use seasonal closures in caves or abandoned mines that are known bat nurseries or hibernacula and there are identified conflicts with people. **STANDARD**

3209. Evaluate abandoned mines for bat habitat potential prior to closure. If it is necessary to close mines or caves that function as bat habitat, closures shall be designed so that bat movement is not impeded. **STANDARD**

## **Riparian Areas**

3210. Provide riparian habitat by maintaining or establishing riparian shrub and tree species, and protect riparian habitat from animal damage if needed. **GUIDELINE**

3211. Provide riparian habitat diversity through vegetation treatments or in conjunction with other resource activities designed to maintain or improve wildlife or fisheries habitat and stream stability. **GUIDELINE**

3212. Manage for high quality riparian communities.

- a. Provide stable stream banks.
- b. Retain woody vegetation along streams and lakes to provide shading for aquatic life and habitat for terrestrial species.
- c. Provide large woody material for aquatic life.

**GUIDELINE**



3213. Plan and implement lake- and stream-habitat improvement projects so that they harmonize with the visual setting and incorporate discussions with other federal and state agencies. Include dredging lakes and ponds among potential projects when appropriate and cost-effective to enhance or maintain resources. Plan projects using site-by-site analysis. **GUIDELINE**

### **Animal Damage Control**

3214. \*For animal damage control activities conducted by other governmental entities, the Forest will cooperate by providing mitigation measures to protect national forest resources. Mitigation measures emphasize public safety; threatened, endangered, sensitive species, and species of local concern; water quality; and other resource values. **STANDARD**

3215. \*In areas identified as important connectivity corridors for marten, maintain canopy closure of at least 50 percent. **STANDARD**

3216. \*NEW. Where livestock management conflicts with bighorn sheep lambing areas, preference shall be given to bighorn sheep from April 1 through June 15. **STANDARD**

3217. \*NEW. Utilize species specific control measures (e.g., pheromone confusants, mass trapping, sterile male release, predator/parasite release) where feasible, to control insects. Do not apply insecticides for gypsy moth control within 2 miles of known bat hibernacula and maternity roosts. **STANDARD**

### **Multiple Use Management**

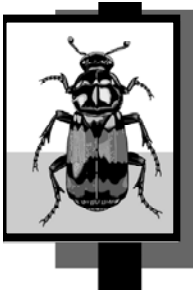
3218. \*NEW. Wildfire suppression camps will not be placed at known, mapped archeological sites or locations of R2 sensitive or plant species of local concern. **STANDARD**

3219. \*NEW. Clearcutting may only be used to meet ecosystem management objectives such as reducing fuels and fire risk adjacent to known R2 sensitive or species of local concern sites, and within the wildland-urban interface, enhancing diversity, providing forage for wildlife, reducing insect-and-disease infestations, regenerating aspen and birch stands, improving visuals or increasing water yield. Patch clearcuts will be limited to 10 acres or less unless this would make achieving the ecosystem management objective unlikely. **STANDARD**

# DISTURBANCE PROCESSES



## Fire and Fuels



## Insects and Disease



## Noxious Weeds



## Fire and Fuels

### Fire Suppression

4101. Use the appropriate suppression response for each management area as shown in the fire management direction summary table on the next page.

**STANDARD**

4102. \*Protect heritage resources, R2 sensitive species and plant species of local concern (SOLC), botanical areas (BAs), research natural areas (RNAs), streams, stream banks, shorelines, lakes and associated vegetation from degradation by wildfire suppression efforts.

- a. \*Avoid the use of earth-moving equipment within national register eligible heritage resource sites, known locations of R2 sensitive species and SOLC plants, BAs, RNAs, or in stream channels, except at designated points and with proper mitigation. Prohibit this use in the Wilderness.
- b. \*Discourage the application of fire-retardant chemicals over riparian areas, wetlands and open waters. Avoid applications in these areas in the Wilderness and RNAs.
- c. \*To prevent soil erosion, re-vegetate burned areas that will not naturally re-vegetate quickly. See Management Area 1.1A for re-vegetation in the Wilderness. No re-vegetation efforts will occur within designated RNAs.

**STANDARD**



## Prescribed Fire

4103. Utilize prescribed fire through planned and natural ignitions to achieve management objectives for each management area as shown in the fire management direction summary table on the next page. **STANDARD**

4104. Visual effects of prescribed fire will comply with the approved scenic integrity objective of the area. **STANDARD**

4105. When feasible and appropriate use broadcast burning to dispose of slash in order to return the inorganic and organic chemicals in the foliage and small woody material to the soil, to reduce fire hazard, and to provide seed beds for natural regeneration. **GUIDELINE** (Amended Regional Guide Silviculture Guideline)

\*Fire Management Direction Summary Table

Fire Management Unit	Management Area Prescription		Appropriate Management Response (AMR)					Prescribed Fire Use
	Area	Primary Resource Emphasis	Confine	Contain	Control	Wildland Fire Use	Restrictions	
Wilderness	1.1A	Black Elk Wilderness *PL = 1 PL = 2 PL =/> 3 7,961 Acres	Yes Yes Yes	Yes Yes Yes	Yes Yes	Yes	***SJ<10 Acres **Restrictions on Mechanical Equip. / Retardant	Yes
Research Natural Areas	2.2	Research and education.	Yes	Yes	Yes	No	Follow direction in establishment record. Use minimum impact suppression techniques.	Yes, if provided for in establishment record for the RNA
Botanical	3.1	Botanical Areas PL=1 PL =/>2	Yes Yes	Yes Yes	Yes	Yes	SJ<5 Acres Use minimum impact suppression techniques.	Yes
Wilderness	3.2A	Inyan Kara Mountain	Same as for Management Area 1.1A					Yes
General Resources	3.31	Back Country Motorized Recreation Emphasis	Yes	Yes	Yes	Yes	SJ<10 Acres	Yes



\*Fire Management Direction Summary Table

Fire Management Unit	Management Area Prescription		Appropriate Management Response (AMR)					Prescribed Fire Use
	Area	Primary Resource Emphasis	Confine	Contain	Control	Wildland Fire Use	Restrictions	
General Resources	3.32	Back Country Non-Motorized Recreation Emphasis	Yes	Yes	Yes	Yes	SJ<10 Acres	Yes
General Resources	3.7	Late Successional Forest Landscapes	Yes	Yes	Yes	Yes	SJ<10 Acres	Yes
General Resources	4.1	Limited Motorized Use and Forest Product Emphasis	Yes	Yes	Yes	No	SJ<10 Acres	Yes
High Use	4.2A	Spearfish Canyon	Yes	Yes	Yes	No	SJ<5 Acres	Yes
Experimental Forest and Scenic Byway	4.2B	Peter Norbeck Scenic Byway (Within Norbeck Wildlife Preserve)	Yes	Yes	Yes	No	SJ<10 Acres	Yes
High Use	5.1	Resource Production Emphasis	Yes	Yes	Yes	No	SJ<5 Acres	Yes
Southern Hills	5.1A	Southern Hills Forest and Grassland Areas	Yes	Yes	Yes	No	SJ<15 Acres	Yes
High Use	5.2A	Fort Meade VA Hospital Watershed	Yes	Yes	Yes	No	SJ<5 Acres No Heavy Equip	Yes
Experimental Forest and Scenic Byway	5.3A	Black Hills Experimental Forest	Yes	Yes	Yes	No	SJ<10 acres	Yes
Experimental Forest and Scenic Byway	5.3B	Sturgis Experimental Watershed	Yes	Yes	Yes	No	SJ<10 acres	Yes
Wildlife	5.4	Big Game Winter Range Emphasis	Yes	Yes	Yes	Yes	SJ<15 Acres	Yes
Wildlife	5.4A	Norbeck Wildlife Preserve	Yes	Yes	Yes	Yes	SJ<15 Acres	Yes
General Resources	5.43	Big Game/ Resource Production	Yes	Yes	Yes	Yes	SJ<10 Acres	Yes



\*Fire Management Direction Summary Table

Fire Management Unit	Management Area Prescription		Appropriate Management Response (AMR)					Prescribed Fire Use
	Area	Primary Resource Emphasis	Confine	Contain	Control	Wildland Fire Use	Restrictions	
General Resources	5.6	Forest Products, Recreation and Big Game Emphasis	Yes	Yes	Yes	Yes	SJ<10 Acres	Yes
High Use	8.2	Developed Recreation Complexes	Yes	Yes	Yes	No	SJ<5 Acres	Yes

\*PL - Preparedness Level as defined in Forest Fire Management Action Plan (FMAP)

\*\* - See Wilderness Fire Suppression in FMAP section 5131 for guidelines on equipment use in wilderness.

\*\*\*SJ - Suppression Object

4106. Promote revegetation of prescribed burned areas.

a. Following broadcast burning, seed to initiate revegetation if ground cover is 60 percent or less and slopes are 30 percent or more.

b. If piled and burned fuel creates ash piles deeper than three inches, scatter the ash, scarify and mix it with mineral soil, or bury it.

**GUIDELINE**

4107. Defer prescribed burned areas from livestock grazing for a portion or all of the following growing season to ensure regrowth of forage species. **GUIDELINE**

4108. \*Prescribed burn plans will identify acceptable levels of tree mortality for seedling/saplings, poles, and sawtimber; burning prescriptions will be established to meet these levels. In planning prescribed burns, consider how the potential loss of trees is offset by the beneficial effects of fire in terms of overall stand health and wood fiber production. Consider value recovery if tree mortality exceeds project objectives. **GUIDELINE**

**Fuel Treatment**

4109. Utilize the Black Hills National Forest Fire Protection Assessment (FPA) for purposes of identifying and prioritizing fire management program activities.

**GUIDELINE**

4110. Base activity and natural fuel treatment on area matrix values within the Black Hills National Forest FPA in accordance with the following treatment options.



- a. In areas identified as having high ratings for risk, hazard or value:
  - (1) Reduce or otherwise treat all fuels (activity fuels within three years of cutting) so the potential fireline intensity does not exceed 200 BTUs/second/foot on 90 percent of the days when fires occur, or break up continuous fuel concentrations exceeding the above intensity into units 30 to 40 acres maximum size, surrounded by fuel breaks.
  - (2) Interim activity fuel treatment will be accomplished by requiring all slash to be lopped to 18 inches or less at the time of cutting.
- b. In areas identified as having moderate ratings for risk, hazard or value:
  - (1) Reduce or otherwise treat all fuels (activity fuels within three years of cutting) so the potential fireline intensity does not exceed 300 BTUs/second/foot on 90 percent of the days when fires occur, or break up continuous fuel concentrations exceeding the above intensity into units 40 to 50 acres maximum size, surrounded by fuel breaks.
  - (2) Interim activity fuel treatment will be accomplished by requiring all slash to be lopped to 18 inches or less at the time of cutting.
- c. In areas identified as having low ratings for risk, hazard or value:
  - (1) Reduce or otherwise treat all fuels (activity fuels within three years of cutting) so the potential fireline intensity does not exceed 400 BTUs/second/foot on 90 percent of the days when fires occur, or break up continuous fuel concentrations exceeding the above intensity into units 40 to 50 acres maximum size, surrounded by fuel breaks.
  - (2) Interim activity fuel treatment will be accomplished by requiring all slash to be lopped to 24 inches or less at the time of cutting

**GUIDELINE**

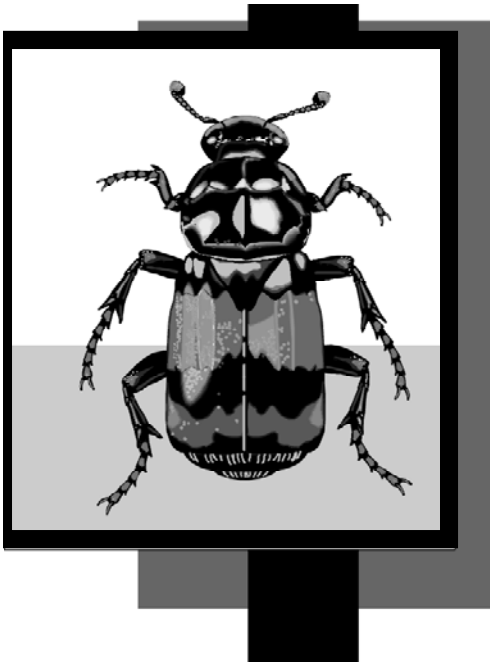
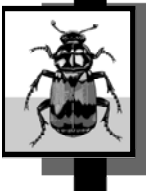
4111. Locate slash piles that are scheduled for burning out of meadows that contribute to Waters of the United States. Use a buffer distance designed to keep sediment, ash and debris out of channels. See Appendix J. **GUIDELINE**

4112. Treat activity fuels adjacent to roads and trails as follows:

- a. For Forest Development Roads classified as collectors, and Forest Development Trails, manage activity fuels to meet adopted SIO.
- b. For federal, state, county and Forest Development Roads classified as arterials, remove 70 to 90 percent of the activity fuels seen from the road's edge up to a maximum distance of 300 feet. Treat debris within one year of harvest completion.

**GUIDELINE**

4113. \*DELETED



## Insects and Diseases

### General

4201. Use the following insect and disease protection measures:

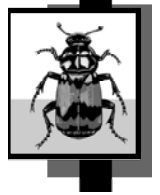
a. Plan management activities with consideration for potential insect or disease outbreaks. Use integrated pest management strategies where insect or disease outbreaks may adversely affect management objectives. Utilize preventive vegetation management practices, including silvicultural treatments, to protect forest stands from insect and disease epidemics. **GUIDELINE**

b. \*During scheduled management activities, minimize susceptibility to mountain-pine-beetle epidemics by reducing average basal area to 70 or less in pine stands, except where denser stands are needed to meet other management objectives.

**STANDARD**

c. \*Use the following insect-and-disease protection measures: Manage vegetation in and adjacent to high-use recreation areas to improve forest condition, as needed to maintain or improve the desired recreation setting(s) or to conserve R2 sensitive or species of local concern and snails. In and adjacent to developed recreation sites actively treat insects and diseases (e.g., sanitation removal, insecticide application, pheromones) to reduce pest populations and tree mortality. **STANDARD**

d. \*Consider spatial array of stand conditions when planning harvests to reduce their potential for mountain pine beetle epidemics. For example, silvicultural treatments may be appropriate within or adjacent to dense mature stands. **STANDARD**



4202. In high use areas identify hazard trees, such as those weakened, damaged, or killed by insects and diseases, that may pose a threat to people, property, and other high value resources, and schedule management activities to remove hazards so as to minimize adverse risks. Prioritize according to risk and values. **GUIDELINE**

4203. Where buildup of *Ips* populations poses a threat to management objectives, especially in developed recreation and dry sites and adjacent to other land ownerships where insect spread may cause concern, avoid leaving concentrations of fresh (green) slash and logging debris greater than 2 inches in diameter during spring (April through June). Lop and scatter promotes faster drying than piling slash, so this method of treatment may be more appropriate for use in high risk *Ips* areas. **GUIDELINE**

4204. Consider potential disease and insect hazards, especially in spruce sites, when designing and developing new recreation, parking, or other high-use areas. **GUIDELINE**

4205. Consider applying preventive silvicultural treatments or other integrated pest management strategies to National Forest System land adjoining other land ownerships to reduce the likelihood of insect and disease epidemics and spread. Plan suppression strategies to reduce mountain pine beetle populations in pine stands during epidemics. Prioritize according to values, risk and management objectives. Priority should be given to areas in which values to be protected exceed the cost of protection (e.g., adjacent to subdivisions, metropolitan areas, recreation sites, or areas of concentrated public use.) **GUIDELINE**

4206. Project plans should consider existing infestations of insects or disease within a project area. Activities should be designed to minimize the risks of spreading the infestation while still providing habitat for those wildlife species dependent upon the presence of insects and disease. **GUIDELINE**

4207. Apply eradication or suppression activities for gypsy moth when needed as determined by surveys and in accordance with the integrated pest management approach (USDA Forest Service, Animal and Plant Health Inspection Service FEIS; Gypsy Moth Management in U.S., 1996). **GUIDELINE**



## Noxious Weeds

### General

4301. \*For all proposed projects or activities, determine the risk of noxious-weed introduction or spread, and implement appropriate mitigation measures and treatment. **STANDARD**

4302. Use biological control methods whenever practical, and whenever protecting other resources is desired, such as water quality. **GUIDELINE**

4303. Develop a noxious-weed management program that addresses the following components: awareness, prevention, inventory, planning, treatment, monitoring, reporting, and management objectives. Control noxious weeds using the following priority order:

- a. \*R2 sensitive and species of local concern occurrences of snails and plants;
- b. \*Research natural areas;
- c. \*Botanical areas;
- d. \*New invaders;
- e. \*New areas of infestation;
- f. \*Spreading or expanding infestations;
- g. \*Existing infestations.

**GUIDELINE**



4304. \*Treat individual plants or groups of plants in areas where R2 sensitive or species of local concern plants occur. Use a treatment method that is the least risk to the species being protected. **STANDARD**

4305. Apply chemical agents at the lowest effective rates, and as large droplets or pellets to reduce drift. Follow label directions. **GUIDELINE**

4306. \*Use certified noxious-weed-free seed, feed and mulch. Seed will be tested for noxious weeds at the time of purchase. **STANDARD**

4307. \***DELETED**

4308. Use buffers around water sources, lakes, wetlands and streams to keep concentrations of chemical agents in water well below those harmful to drinking, irrigation, aquatic life and non-target vegetation. Treatment of individual plants with aquatic-labeled chemical agents may occur in buffers. **STANDARD**

4309. \*Monitor weed treatments used at R2 sensitive and species of local concern plant occurrences and re-treat as needed during the season. **STANDARD**

# RECREATION



**Recreation Opportunity Spectrum**



**Developed Recreation**



**Dispersed Recreation**



**Recreation Special Uses**



**Scenery Management**



## Recreation Opportunity Spectrum

### General

5101. Management activities shall comply with the requirements of the adopted Recreation Opportunity Spectrum class (summarized below). **GUIDELINE**

#### Recreation Opportunity Spectrum by Management Area

MGMT AREAS	NAME	P	SPNM	SPM	RN	RNNM	R
1.1A	Black Elk Wilderness	X					
*2.2	Research Natural Areas	X	X				
3.1	Botanical Areas		X		X		
3.2A	Inyan Kara Mountain	X					
3.31	Back Country Motorized Recreation Emphasis			X			
3.32	Back Country Non-Motorized Recreation Emphasis		X				
3.7	Late Successional Forest Landscapes					X	
4.1	Limited Motorized Use and Forest Product Emphasis					X	
4.2A	Spearfish Canyon				X		
4.2B	Peter Norbeck Scenic Byway (Within Norbeck Wildlife Preserve)				X		
5.1	Resource Production Emphasis				X		
5.1A	Southern Hills Forest and Grassland Areas				X		



## Forest-wide Standards and Guidelines -Recreation Opportunity Spectrum

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MGMT AREAS	NAME	P	SPNM	SPM	RN	RNNM	R
5.2A	Fort Meade VA Hospital Watershed		X		X		
5.3A	Black Hills Experimental Forest				X		
5.3B	Sturgis Experimental Watershed		X				
5.4	Big Game Winter Range Emphasis				X		
5.4A	Norbeck Wildlife Preserve		X				
5.43	Big Game and Resource Production				X		
5.6	Forest Products, Recreation, Big Game Emphasis				X		
8.2	Developed Recreation Complexes				X		

P=Primitive; SPNM=Semi-primitive Non-motorized; SPM=Semi-primitive Motorized; RN=Roaded Natural; RNNM=Roaded Natural Non-motorized; R=Rural.



## Developed Recreation

### General

5201. Construct, reconstruct and maintain developed sites in accordance with the Recreation Opportunity Spectrum (ROS) classification established for the immediate area. See Appendix F for a list of existing facilities and their ROS classification. **GUIDELINE**

5202. Integrated resource management schedules should be prepared prior to rehabilitation, expansion or construction of projects. **GUIDELINE**

5203. Consider the element of cost efficiency and public desires when planning development and operating sites within the complex. **GUIDELINE**

5204. Facilities may dominate, but must harmonize and blend with the adjacent natural landscape. **STANDARD**

5205. \*Design facilities and access to provide site protection, to restrict access or route recreational use away from R2 sensitive and species of local concern plants that are located within or immediately adjacent to developed recreation sites and to provide for efficient maintenance and user convenience. **STANDARD**

5206. Design and locate improvements on winter sport sites to provide safety to users and to harmonize with the natural environment. **STANDARD**



5207. In areas of high to moderate potential for valuable mineral deposits, perform site-specific mineral evaluations prior to making substantial capital investments, such as recreational developments. High and moderate mineral potentials are described in U.S. Geological Survey Bulletin 1580, Mineral Resource Potential and Geology of the Black Hills National Forest, South Dakota and Wyoming. **STANDARD**

5208. All new or reconstructed developed recreation sites will provide a range of universally accessible opportunities within the limits of the site characteristics. **STANDARD**

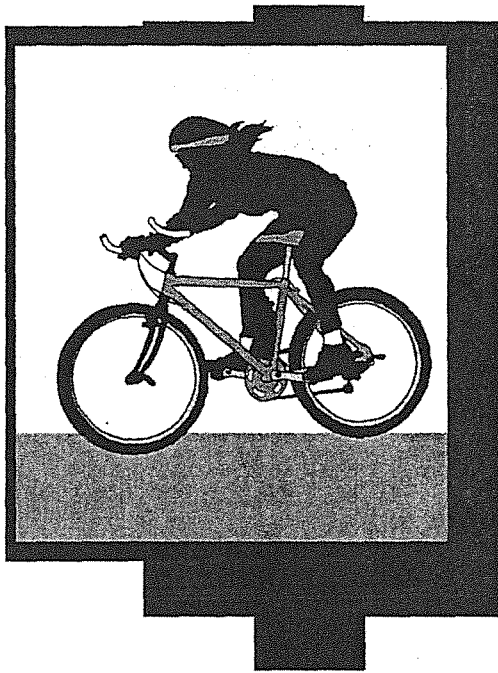
5209. Stands should be managed in campgrounds to provide a variety of species, size classes and age classes to perpetuate forest cover, add diversity in the forest setting, and complement recreation and visual values. **GUIDELINE**

5210. The adopted Scenic Integrity Objective (SIO) varies from High in primitive, relatively low-use sites, Development Levels 1 and 2; Moderate in moderately developed sites, Level 3; and Low in intensively developed sites, Levels 4 and 5. **GUIDELINE**

5211. Do not issue special-use permits that will preclude future recreational developments. **STANDARD**

5212. Emphasize signing for recreational purposes that comply with site-development scale and Recreation Opportunity Spectrum (ROS). **GUIDELINE**

5213. \*Do not locate any new developed recreation sites in or immediately adjacent to known locations of R2 sensitive or species of local concern plants. **STANDARD**



## Dispersed Recreation

### General

◇ 5301. Discourage dispersed camping within a minimum of 100 feet from lakes and streams unless exceptions are justified by terrain. Motorized dispersed camping is allowed only as shown on the MVUM. GUIDELINE

5302. Use the following criteria when evaluating campsites for closure, rehabilitation or mitigation of damage:

- a. Campsite condition reaches Frissell class “heavy” or “severe”;
- b. Site occupancy exceeds the adopted scenic integrity objective;
- c. There are social use conflicts; and
- d. Unacceptable environmental damage is occurring.

STANDARD

◇ Amendment #10 - May 2010 ◇



5303. If use exceeds the area capacity or limit of acceptable change for a given recreation opportunity spectrum (ROS) class, the following management actions, in order of priority, should be employed to address the impacts or effects to the recreation setting:

- a. Inform the public and restore or rehabilitate the site;
- b. Reroute use or focus use elsewhere;
- c. Regulate use;
- d. Restrict the number of users; and
- e. Close the site.

**STANDARD**

5304. Different accessibility challenge levels will be planned, depending on the nature of the improvement and the principal form of recreation being provided.

**GUIDELINE**



## Recreation Special Uses

### General

5401. Outfitter guide use may be authorized up to the listed maximum service days for the following recreation activities:

RECREATION ACTIVITY	MAXIMUM SERVICE DAYS	(RECREATION VISITOR DAYS)
Hunting	9,000	(6,000)
Fishing	3,000	(1,100)
Trailrides:		
Mechanized (Mtn.Bikes, Wagons, ATVs)	58,000	(14,500)
Non-mechanized (Hiking, horse, llama)	80,000	(26,700)
Rock Climbing	5,000	(2,500)
Snowmobiling	8,000	(2,300)

Outfitter guide use for other kinds of recreation activities will be allocated on a case-by-case basis until capacity studies are completed. **STANDARD**

5402. When capacity has been met for a certain special use activity, no further permits will be issued. **STANDARD**



5403. Avoid issuance of outfitter and guide permits that result in exclusive use of National Forest System lands by a special segment of the public. **STANDARD**

5404. Encourage the dispersion of outfitter and guide camps away from popular sites receiving capacity use. **GUIDELINE**

5405. Keep a minimum distance of one-half mile between hunting-season outfitter and guide camps except at staging areas, unless there are adequate natural buffers to permit closer distances. **STANDARD**



## Scenery Management

### General

5601. The existing scenic integrity, based on current landscape character, is usually accepted as the scenic integrity objective (SIO) unless special, documented circumstances warrant a change. Scenic integrity objectives are summarized below and displayed on the accompanying Scenery Management Map. **GUIDELINE**

**Scenic Integrity Objective by Management Area (Acres)**

MGMT AREAS	NAME	VERY HIGH	HIGH	MOD	LOW	VERY LOW
1.1A	Black Elk Wilderness	13,543 <sup>1</sup>				
*2.2	Research Natural Areas		2,277			
3.1	Botanical Areas		7,348			
3.2A	Inyan Kara Mountain	1,304				
3.31	Back Country Motorized Recreation Emphasis		1,126	10,577	167	
3.32	Back Country Non-Motorized Recreation Emphasis		11,563			
3.7	Late Successional Forest Landscapes		3,397	12,508	7,982	
4.1	Limited Motorized Use and Forest Product Emphasis		6,722	23,097	13,965	
4.2A	Spearfish Canyon		5,575	2,972	1,222	



MGMT AREAS	NAME	VERY HIGH	HIGH	MOD	LOW	VERY LOW
4.2B	Peter Norbeck Scenic Byway (Within Norbeck Wildlife Preserve)		1,694			
5.1	Resource Production Emphasis		58,130	247,384	258,384	
5.1A	Southern Hills Forest and Grassland Areas		1,796	17,208	70,702	
5.2A	Fort Meade VA Hospital Watershed		3,308			
5.3A	Black Hills Experimental Forest					3,393
5.3B	Sturgis Experimental Watershed					1,079
5.4	Big Game Winter Range Emphasis		50,626	163,454	182,436	
5.4A	Norbeck Wildlife Preserve		6,823	4,262	1,151	
5.43	Big Game and Resource Production		276	6,520	3,366	
5.6	Forest Products, Recreation and Big Game Emphasis		1,378	19,539	6,259	
8.2	Developed Recreation Complexes		6,908	3,726	734	
	Total	14,847	168,947	511,247	546,368	4,472

<sup>1</sup> Includes Upper Pine Creek Research Natural Area

5602. Management activities which are inconsistent with the scenic integrity objectives will be prohibited unless a decision is made to change the scenic integrity objective. Such decisions will be documented in a site-specific decision document. **GUIDELINE**

5603. Use the following priorities for rehabilitating areas that do not meet scenic integrity objectives (SIO):

- a. Relative importance of the area and the amount of deviation from the scenic integrity objectives. “Foreground” of high public use areas has highest priority;
- b. Length of time it will take natural processes to reduce the visual impacts so that they meet the scenic integrity objective(s);
- c. Length of time it will take for rehabilitation measures to meet the scenic integrity objective; and
- d. Benefits to other resource management objectives to accomplish rehabilitation.

**GUIDELINE**

5604. Achieve enhancement of landscapes where determined appropriate.

**GUIDELINE**

5605. \*Plan, design, and locate vegetation manipulation in a scale that retains the color and texture of the landscape character, borrowing directional emphasis of form and line from natural features. However, the scale of vegetation manipulation around at-risk communities will be on a landscape scale. The design



will borrow from the prairie-forest-edge character to create an open landscape with trees scattered across it. **GUIDELINE**

5606. \*Where the scenic integrity objectives (SIO) criterion is high or moderate, meet the criterion within 1 full growing season after completion of a project. In the wildland-urban interface (WUI) areas, the moderate SIO should be met within 2 to 4 years after the fire-hazard objective is met. Future management activities in WUIs shall meet SIO within 1 year of treatment. Where it is low or very low, meet the criterion within 3 full growing seasons after completion of a project.

**GUIDELINE**

5607. Choose facility and structure design, color of materials, location and orientation to meet the scenic integrity for the management area. **GUIDELINE**

5608. Integrate the protection of aesthetic values with all resource planning.

**GUIDELINE**

5609. Highest priority for protection of scenic quality are those areas of heavy public use, such as scenic byways, major roads or trails, developed recreation sites, administrative sites, and backdrops for cities and towns. **GUIDELINE**

5610. \*Within the immediate foreground of primary travelways/use areas, manage tree stands to enhance the scenic quality and recreational opportunities. Manage for a variety of scenic quality and recreation opportunities. Manage for a variety of scenic conditions including areas of large, yellow-barked ponderosa pine, areas of hiding cover for wildlife, and areas with open park-like conditions, except as needed to meet Objective 10-02. **GUIDELINE**

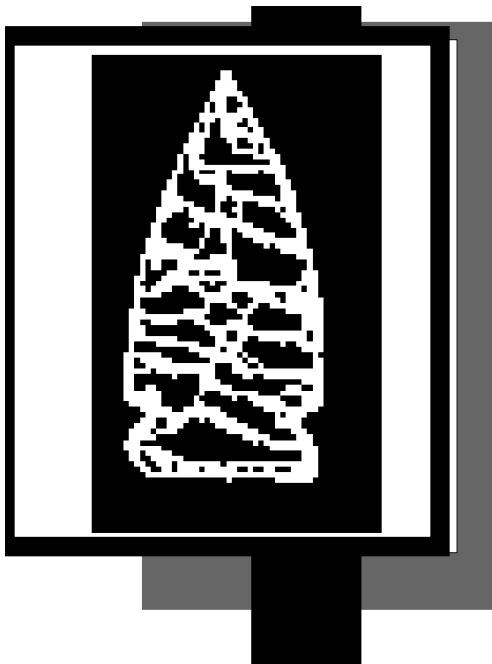
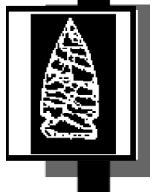
5611. Vary stand densities to create vegetative diversity in areas with an adopted scenic integrity objective of Moderate or High. **GUIDELINE**

5612. Large facilities, such as power lines, should not be noticeable features within travel corridors. **GUIDELINE**

# HERITAGE RESOURCES



## Heritage Resources



## Heritage Resources

### General

6101. Consider long-term Forest management needs in determining appropriate use of mitigation of effects to, or avoidance of, heritage resources during project planning. **GUIDELINE**

6102. Issue appropriate authorizations to qualified persons or entities for the study, research, interpretation, tourism, adaptive use, other cultural activities, or mitigation of effects at National Register listed or eligible heritage sites. **GUIDELINE**

6103. Use cooperative programs, agreements and other partnerships to further the goals of heritage resource management. **GUIDELINE**

6104. Utilize heritage resources for a variety of public uses and enjoyment. **GUIDELINE**

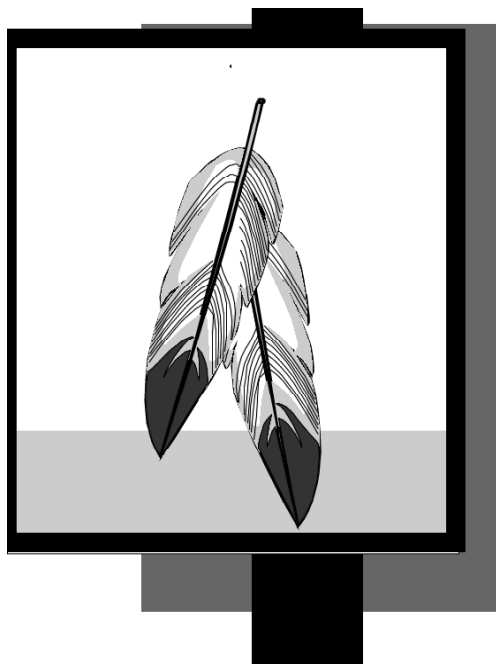
6105. Support Windows on the Past, Passport in Time, or other Forest Service heritage management emphasis programs whenever possible. **GUIDELINE**

6106. During all planning and implementation activities, incorporate information, data and ideas in the Black Hills Heritage Resources Overview and the Forest Heritage Resources Database. **GUIDELINE**

# AMERICAN INDIAN USES



## American Indian Uses



## Indian Uses

### General

7101. Sensitive information about American Indian religious sites and sacred areas will be kept confidential. **STANDARD**

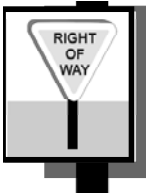
7102. Recognize American Indian religious and spiritual beliefs regarding the disposition of human remains and make provisions for their proper reburial and treatment according to applicable FSM. **STANDARD**

7103. \*Recognize American Indian traditions of gathering herbs, medicinal and edible plants, and other materials for religious purposes and make provisions for those who wish to gather such plants and materials. Where conflicts occur over traditional plant use and R2 sensitive and species of local concern plants, the Forest will consult with Tribes to maintain species viability and recognize traditional plant use. **STANDARD**

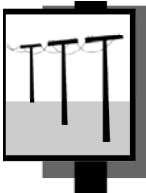
# ADMINISTRATION



**Real Estate**



**Rights-of-Way**



**Corridors**



**Administrative Sites**



**Special Land Uses**



## Real Estate

### Landownership Adjustments

8101. Classify lands or interest in lands for acquisition where lands are valuable for National Forest System purposes based on the following:

- a. In designated wilderness areas and other Congressionally classified areas;
- b. Where lands or rights-of-way are needed to meet resource management goals and objectives;
- c. Lands that provide habitat for threatened, endangered or sensitive species of animals and plants;
- d. Lands that include floodplains, wetlands or riparian areas;
- e. Place high priority on acquiring lands with riparian areas that will protect or improve water quality, channel stability, and aquatic habitat;
- f. On lands having historical or significant heritage resources, outstanding scenic values or critical ecosystems, when these resources are threatened by change of use or when management may be enhanced by public ownership; and
- g. Lands that will improve administration and reduce trespass.

#### GUIDELINE



8102. The following characteristics further define the acquisition priorities:

- a. Lands with water frontage, such as lakes, streams, floodplains, wetlands and associated riparian ecosystems;
- b. Key wildlife and fishery management areas;
- c. Lands primarily of value for outdoor recreation purposes and lands needed for aesthetic protection;
- d. Lands needed to protect resource values by eliminating or reducing fire risks, soil erosion and potential future trespass occupancies;
- e. Lands needed to reduce the potential for future administrative costs of special uses, road and trail right-of-way grants and easements;
- f. Lands needed to block or consolidate existing National Forest System lands and reduce the miles of boundaries and number of corners;
- g. Lands that maintain or stabilize the economics of local government;
- h. Lands that will add significantly to available National Forest goods and services;
- i. Lands where conflicting uses would impact National Forest land or land management;
- j. Lands in a municipal supply watershed, where,
  - (1) The community does not have the capability to acquire the essential tract,
  - (2) The National Forest program will provide the best insurance against existing or potential uses that are incompatible with effective watershed management, and
  - (3) The lands are suitable and will be used for other National Forest programs in addition to watershed protection;
- k. Lands essential to public management of recreation and other resources, and contiguous to a proposed impoundment to be constructed by a public agency; (These lands will be acquired at the earliest possible stage of project planning.)
- l. Lands with improvements suitable for National Forest purposes;
- m. Acquire only those Non-National Forest System lands in mineralized areas that have low potential for future mineralized patents and where the minerals will be donated to the United States; and
- n. Identify as desirable for acquisition those private lands that have traditional cultural properties and are contiguous to National Forest System land.

**GUIDELINE**



8103. Classify lands for conveyance based on the following:

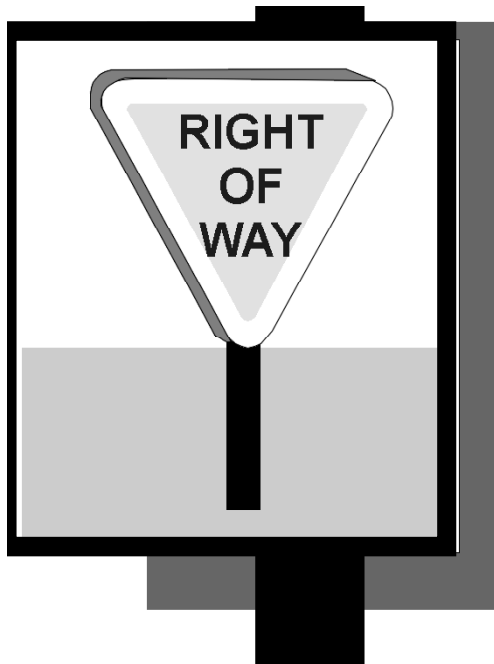
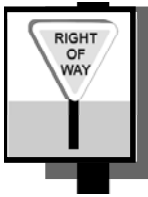
- a. To states, counties, cities or other federal agencies when conveyance will serve a greater public interest;
- b. In small parcels intermingled with mineral or homestead patents;
- c. Those lands suitable for development by the private sector, if development (residential, agricultural, industrial, recreational, etc.) is in the public interest; and
- d. When critical or unique resources exist (wetlands, floodplains, essential big-game winter range, threatened endangered or sensitive species habitat, historical or heritage resources, critical ecosystems, etc.) but only when effects are mitigated by reserving interests to protect the resource, or by exchange where other critical resources to be acquired are considered to be of equal or greater value on a Forest-wide basis.

**GUIDELINE**

8104. The following characteristics further define the conveyance priorities:

- a. Parcels isolated from other National Forest System lands;
- b. Lands encumbered by special-use permits and occupied by substantial structural improvements for which there is no greater need;
- c. Lands encumbered with occupancy trespass cases and encroachments involving substantial structural improvements;
- d. Lands within and immediately adjacent to expanding communities to assist public and private projects that have the mutual concurrence of federal, state, and local governments;
- e. Lands encumbered with summer home groups or cabins that are no longer desirable for semi-exclusive use;
- f. Lands in developed areas that have lost or are losing their National Forest character; and
- g. Reserved or acquired road right-of-way parcels that are substantially surrounded by lands not owned by the United States and that are no longer needed for right-of-way purposes.

**GUIDELINE**



## Rights-of-Way

### Grants for Public Roads

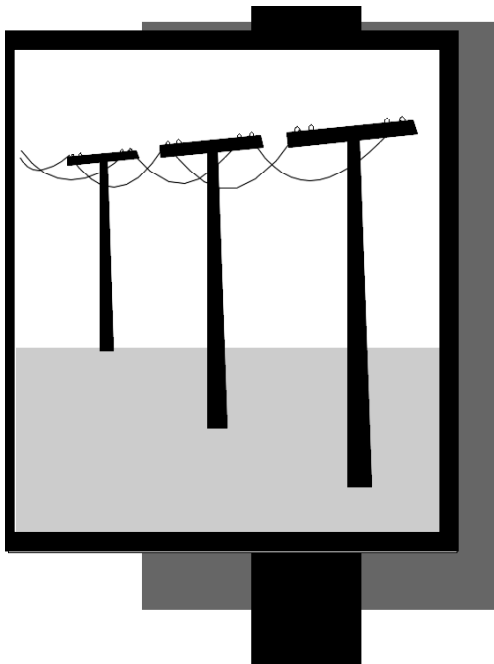
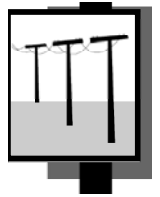
8201. Grant National Forest Road and Trails Act Easements to a public road management authority for roads across National Forest System lands that access subdivisions. **STANDARD**

- a. Do not approve easement applications for ingress/egress or escape routes across National Forest System land that can be met on private or other ownerships. **STANDARD**
- b. Accommodate county requirements for planning and zoning, and fire prevention and suppression. **GUIDELINE**
- c. Escape routes will be designated undeveloped corridors, maintained by the public road management authority. **GUIDELINE**

8202. Issue Federal Land Policy and Management Easements to individuals for access.

- a. Do not approve easement applications across National Forest System land that can be met on private or other ownerships. **STANDARD**
- b. Allow only one access route across National Forest per tract of unsubdivided private land. **GUIDELINE**

8203. Retain existing access rights where needed to meet plan goals and objectives. **STANDARD**



## Corridors

### Travel Corridors

8301. Conserve existing and inventoried rights-of-way corridors to protect them for future construction and occupancy. **STANDARD**

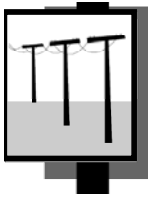
8302. Coordinate rights-of-way fencing needs with appropriate transportation agencies. **GUIDELINE**

### Utility Corridors

8303. Bury new or reconstructed electrical utility lines of 33 kilovolts (KV) or less and telephone lines, unless one or more of the following applies:

- a. Scenic integrity objectives of the area can be met using an overhead line;
- b. Burial is not feasible due to geologic hazard or unfavorable geologic conditions;
- c. It is not technically feasible; or
- d. Greater long-term site disturbance would result.

**GUIDELINE**



8304. Reduce effects of utility corridors.

- a. Locate new and rebuilt (greater than 33 KV) utility lines so they are not highly visible from the highways;
- b. Locate new and rebuilt (greater than 33 KV) utility lines to cross at right angles to the travel corridor; and
- c. Use non-reflective material in construction of overhead utility lines within travel corridors.

**GUIDELINE**

8305. Consolidate occupancy of transportation or utility corridors and sites wherever possible and compatible. **GUIDELINE**

8306. New proposals to utilize existing utility corridors will be authorized without alternative route analysis, subject to site-specific environmental analysis.

**STANDARD**

8307. Do not authorize conflicting uses or activities within utility corridors.

**STANDARD**

8308. \*Existing powerline poles with unsafe raptor configurations should be replaced or reconfigured with raptor-safe designs during normal pole and line replacement schedules. In areas with identified raptor electrocution problems, power poles will be replaced or reconfigured with raptor-safe designs as soon as possible. **STANDARD**

8309. For new construction of electric lines and poles, protect raptors by use of Suggested Practices for Raptor Protection on Power Lines - State of the Art in 1981 (Olendorff 1981) (or any updated version) for single-phase, dead-end, intersection, transformer configurations and under-ground takeoff poles. **STANDARD**

8310. Management activities within linear corridors should be compatible, to the extent possible, with the goals of the individual management areas through which the corridors pass. **GUIDELINE**



## Administrative Sites

### General

8401. Keep natural and activity fuels to a minimum in timber stands to reduce the threat of wildfire to the public and to reduce potential fire damage to facilities.

**GUIDELINE**

8402. \*Manage vegetation to improve scenic integrity. Re-vegetate with native species where available. **GUIDELINE**

8403. Prioritize buildings and related capital improvements to Forest Administration Sites over a 10-year period. **GUIDELINE**

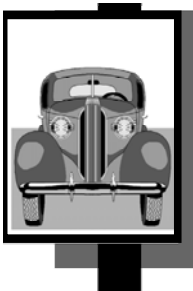


## Special Land Uses

### General

8501. Do not approve new uses, and phase out current uses, where the primary use is storage or disposal of hazardous materials, including landfills, when the permits expire. **STANDARD**

# TRANSPORTATION AND TRAVEL



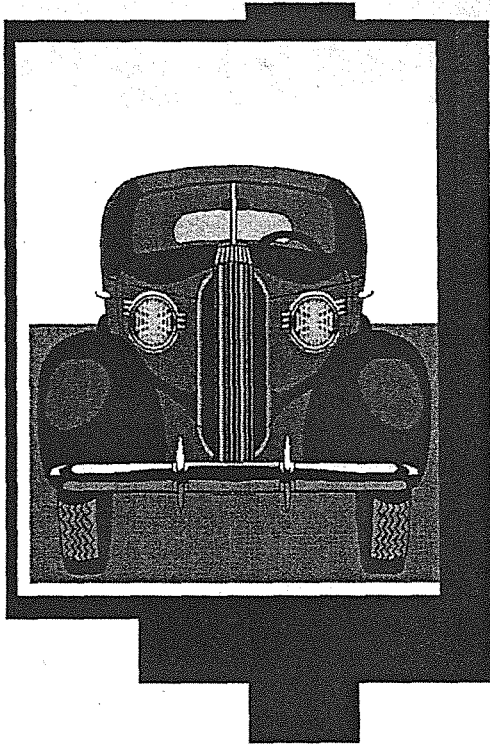
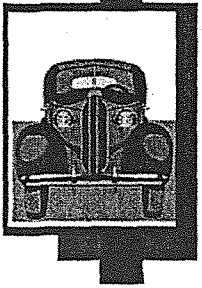
**Transportation System Management**



**Forest Development Roads**



**Trails**

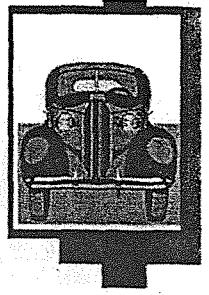


## Transportation System Management

### General

◇ 9101. Any new road will be closed to public use unless the project decision approving its construction specifically designates it as open to public use, and until it is so designated on the MVUM.

◇ Amendment #10 - May 2010 ◇



g. Seasonal travel restrictions are required:

- (1) To avoid unsafe conditions or to prevent unacceptable damage to soil and water resources due to weather or seasonal conditions;
- (2) To prevent unacceptable wildlife conflict or habitat degradation;
- (3) To meet a seasonal public and administrative need; or
- (4) For area protection or non-use.

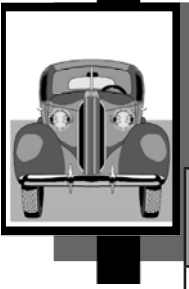
**STANDARD**

◇ 9102. With regard to management of motorized travel, management areas are designated as allowed, restricted, or prohibited for road, off-road and snow travel. The need for modifying motorized travel opportunities within management areas may be identified during project planning and will be accomplished through project decisions. Existing travel orders will continue in effect as part of the Revised Forest Plan unless changed by management area direction. Motorized off-highway vehicle travel opportunities and restrictions, both those listed in the table below and any modified through project decisions, will be displayed on the MVUM or contained in a Forest Travel Order. Implementation of Forest Travel Orders on the ground shall be in compliance with the Forest Access Management Guide. **STANDARD**

◇ 9103. Management of motorized vehicle travel is summarized in the following table. Motorized off-road travel is allowed only for purposes of game retrieval and dispersed camping, as shown on the MVUM (except for specific exceptions specified in the Travel Rule). **GUIDELINE**

MGMT AREA NUMBER	MANAGEMENT AREA	MOTORIZED ROAD TRAVEL	MOTORIZED OFF-ROAD TRAVEL	SNOWMOBILE ON SNOW
1.1A	Black Elk Wilderness	Prohibited	Prohibited	Prohibited
*2.2	Research Natural Areas	Prohibited	Prohibited	Prohibited
3.1	Botanical Areas	Restricted*	Prohibited	Restricted*
3.2A	Inyan Kara Mountain	Prohibited	Prohibited	Prohibited
3.31	Backcountry Motorized Vehicle Recreation Emphasis	Allowed	Restricted**	Allowed
3.32	Backcountry Non-motorized Recreation Emphasis	Prohibited	Prohibited	Restricted*
3.7	Late Successional Forest Landscape (Formerly Old Growth)	Restricted*	Prohibited	Restricted*
4.1	Limited Motorized Use and Forest Product Emphasis	Restricted*	Prohibited	Restricted*
4.2A	Spearfish Canyon (Formerly Spearfish Canyon Scenic Byway)	Restricted*	Prohibited	Restricted*
4.2B	Peter Norbeck Scenic Byway (Section within the Norbeck Wildlife Preserve)	Restricted*	Prohibited	Restricted*

◇ Amendment #10 - May 2010 ◇



MGMT AREA NUMBER	MANAGEMENT AREA	MOTORIZED ROAD TRAVEL	MOTORIZED OFF-ROAD TRAVEL	SNOWMOBILE ON SNOW
5.1	Resource Production Emphasis (Formerly Forest Products)	Allowed	Allowed	Allowed
5.1A	Southern Hills Forest and Grassland Areas	Allowed	Allowed	Allowed
5.2A	Fort Meade VA Hospital Watershed	Restricted*	Prohibited	Restricted*
5.3A	Black Hills Experimental Forest	Allowed	Allowed	Allowed
5.3B	Sturgis Experimental Watershed	Restricted*	Prohibited	Restricted*
5.4	Big Game Winter Range Emphasis (Formerly Low-Elevation Wildlife Habitat)	Restricted***	Restricted***	Restricted*
5.4A	Norbeck Wildlife Preserve	Restricted*	Prohibited	Restricted*
5.43	Big Game and Resource Production (Formerly Elk Habitat)	Restricted*	Prohibited	Restricted*
5.6	Forest Products, Recreation and Big Game Emphasis	Allowed	Allowed	Allowed
8.2	Developed Recreation Complexes (Formerly Concentrated Public Use Areas)	Restricted*	Prohibited	Restricted*

\* To Designated Routes

\*\* To Designated Trails

\*\*\* Seasonal or Year Long Restrictions May Apply

9104. Motorized vehicles may be used on restricted areas and roads to accomplish administrative purposes. **GUIDELINE**

9105. Construct temporary roads when there is a one-time need for a transportation facility. Return the road to vegetative production when the one-time need is fulfilled. **STANDARD**

9106. Obliterate forest development roads when project decisions indicate they are no longer needed to achieve management activities, or where resource damage cannot be mitigated. Inventory and obliterate non-forest development road travelways during project planning and implementation. **STANDARD**

## Transportation and Travel Management in Riparian Areas and Wetlands

9107. Prohibit land vehicles from entering perennial streams where resource damage would occur except to cross at specified points. **GUIDELINE**

9108. Vehicular traffic, except for snowmobiles, will be restricted to roads and trails in riparian areas. **GUIDELINE**

9109. Walk-in fisheries are closed to motorized travel. **GUIDELINE**



## Forest Development Roads

### Construction and Reconstruction

9201. Develop roads for resource management according to the following priorities. Minimize the miles of new road by considering the following:

- a. Use of any existing facilities;
- b. If the existing facility is not capable of year-round use, consider restricting use to acceptable seasons or conditions;
- c. If the facility is not suitable for use under any condition, obliterate or reconstruct to a standard capable of seasonal (part-time) use;
- d. If part-time use is not acceptable, reconstruct the facility for year-round use;
- e. If no facility exists that meets the required function, construct the minimum facility that provides utility and adequate resource protection under seasonal or part-time use;
- f. If the existing road is causing unacceptable resource damage that cannot be mitigated in a cost effective manner and there is need for the road for resource management, obliterate and construct the minimum standard road needed in a more acceptable location;



g. If year-round use is needed for a documented purpose, construct the minimum all-weather road; and

h. Use forwarders, cut-to-length harvest, and harvest methods to increase skidding distances.

**GUIDELINE**

9202. Reduce the long-term impact of roads on soils:

a. Revegetate the entire road prism of temporary and local native-surface roads upon completion of project work;

b. Revegetate cut-and-fill slopes of all newly constructed or reconstructed roads;

c. Give roads and trails special design considerations to prevent resource damage on capability areas containing soils with high shrink/swell capacity;

d. Provide permanent drainage and establish protective vegetative cover on all new temporary roads or equipment ways, and all existing roads that are being removed from the transportation system; and

e. Provide adequate road and trail cross drainage to reduce erosion.

**GUIDELINE**

9203. Install cattle guards where fences cross arterial or collector roads. **GUIDELINE**

9204. Reduce the impact of new Forest Development and temporary road construction on wildlife. New roads will generally not be located in meadows. When topography allows, roads should not be within 400 feet of the meadow edge. **GUIDELINE**

## **Maintenance**

9205. When maintaining all roads, use the following requirements:

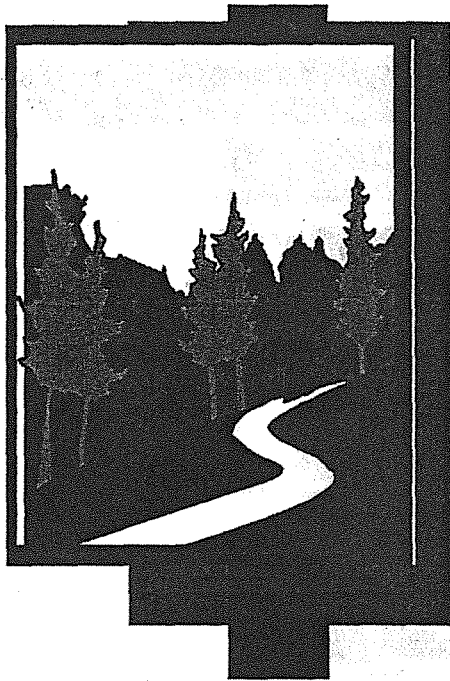
a. All arterial and collector roads -Maintenance Levels 3, 4, 5;

b. Local roads open to low-clearance vehicles -Maintenance Levels 3, 4, 5;

c. Local roads open to high-clearance vehicles -Maintenance Level 2; and

d. Local roads closed between resource management activities -Maintenance Level 1.

**GUIDELINE**



## Trails

### General

9301. When planning and implementing resource management projects, protect or enhance Forest Development Trails and their associated Recreation Opportunity Spectrum experience. **STANDARD**

◇ 9302. The need to modify existing allowable trail uses or to identify use types of new Forest Development Trails will be accomplished through project planning and project decisions. Trail use opportunities, both those listed in the table below, and any added or modified through project decisions will be displayed on the MVUM or contained in the Forest Travel Orders. **STANDARD**

9303. Allowed user types on the Forest Development Trail system are summarized in the table below. Trails specifically designed for persons with disabilities are indicated under allowed uses. Trails not indicated as such are also open to but not designed for persons with disabilities. **GUIDELINE**

◇ Amendment #10 - May 2010 ◇



Trail Use Opportunities

TRAIL NAME	TRAIL NO.	ALLOWED USES
Lost Cabin	2	*
Norbeck	3	*
Cathedral Spires	4	
Willow Creek	5	
Sunday Gulch	6	
Grizzly Bear Creek	7	
Willow Creek Loop	8	
Sylvan Lake/Harney Peak	9	
Willow Creek/Harney Peak	9	
Horsethief Lake	14	
Iron Creek	15	
Iron Mountain	16	
Bear Mountain	23	
Beaver Creek Nature Trail	31	
Hell Canyon Trail	33	
Deerfield	40	



TRAIL NAME	TRAIL NO.	ALLOWED USES
Lake Loop	40L	
Dutchman Loop	47	
Mt. Roosevelt	48	
Flume	50	
Aspen Leaf	52	
Pioneer Discovery	54	
Veterans' Point	56	
Lakeview	58	
Crow Peak	64	
Old Baldy	66	
Eagle Cliff	68	
Big Hill	72	
Roughlock	76	
Rimrock	79	
Little Spearfish	80	
Cook Lake	88	
Carson Draw Trails	87	



**Forest-wide Standards and Guidelines - Trails**

TRAIL NAME	TRAIL NO.	ALLOWED USES
Centennial	89	*
Centennial Dalton to Pilot Knob	89B	
Centennial Bypass	89B	
Bearlodge Fat Tire Trails	90	
Cliff Swallow	91	
Sundance Trails	93	
George S. Mickelson	104	
Mickelson, Deadwood to Rochford	104	
Beaver Creek Trails	111	

\*Mountain bike use is prohibited where the trail passes through the Black Elk Wilderness.

# Chapter Three



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# Chapter Three:

# Management Areas

## Introduction

Management areas spatially define where differing kinds of resource and use opportunities are available to the public and where different management practices may be carried out. They are approximately shown in this chapter for each management area and on the map accompanying this document at 1:200,000 scale. Management area lines are more accurately displayed on maps accompanying the Resource Information System (RIS) database.

Each management area delineated on the map has a multiple-use management prescription to guide management of the area. This management prescription contains the following for each management area:

- (1) Management Area Theme -- A short description of the management direction.
- (2) Management Area Setting -- A short description of the location of the management area.
- (3) Management Area Activities and Opportunities -- Information about the availability of some of the major activities and opportunities within the Forest.
- (4) Management Area Desired Future Condition -- A description of the management area environment as the Forest Plan is implemented. (Forest-wide desired future condition is included in the discussion under each Forest-wide goal.
- (5) Management Area Goals and Objectives -- These are goals and objectives that describe desired resource conditions for the management areas. The other type of objective, which describes levels of goods and service, is only listed on a Forest-wide basis.
- (6) Management Area Standards and Guidelines -- These are standards and guidelines that apply to a particular management area in addition to the Forest-wide Standards and Guidelines.

Goals and objectives and standards and guidelines that changed in the Phase II Amendment are noted with an asterik (\*). Appendix D in the Final EIS explains these changes with Alternative 2 being the current Forest Plan and Alternative 6 being the Phase II Amendment Forest Plan.

Management area direction is applied in addition to Forest-wide direction. Where there is conflict, the more site-specific direction applies, either Forest-wide or management area direction.

### Management Area Categories

Eight general categories, further subdivided into prescriptions are used to display management area direction. The eight categories more or less range along a continuum from little use by humans to extensive use by humans. The categories coincide with those used throughout the Rocky Mountain Region as well as other Regions.

**Category 1:** Ecological processes are allowed to operate relatively free from the influence of humans. Diversity resulting from natural succession and disturbances predominates and non-native vegetation is rare. Late-successional vegetation is common along with earlier seral stages resulting from natural processes and disturbance regimes. Users must be self-reliant and should expect low levels of contact with other people. Few, if any, man-made facilities are present. Travel is non-motorized with rare exceptions. Typical types of areas are designated wilderness and backcountry lands. A minor amount of motorized use may be needed to restore desired conditions in core restoration areas.

#### 1.1A Black Elk Wilderness

**Category 2:** These areas provide for conservation of representative or particularly rare and narrowly distributed ecological settings or components. They help ensure conservation of ecosystems or ecosystem components that may provide important functions ensuring the overall sustainability of larger landscapes. Human influences on the ecological processes are limited to the degree possible, but are sometimes evident. Type of human use varies, but generally is not intensive. Travel is generally non-motorized. Some of these areas help provide an important role under an adaptive management philosophy by providing “natural” reference areas that are intensively managed for a particular objective. These areas are formally designated 2.2 Research Natural Areas.

#### 2.2 Research Natural Areas

**Category 3:** Ecological values are in balance with human occupancy and consideration is given to both. Resource management activities may occur, but natural ecological processes and resulting patterns will normally predominate. Although these areas are characterized by predominantly natural-appearing landscapes, an array of management tools may be used to restore or maintain relatively natural patterns of ecological progress. This will result in some evidence

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of human activities. Users expect to experience some isolation from the sights and sounds of people in a setting that offers some challenge and risk. Restrictions on motorized travel may vary from area to area and from season to season.

**3.1 Botanical Areas**

**3.2A Inyan Kara Mountain**

**3.31 Backcountry Motorized Recreation Emphasis**

**3.32 Backcountry Non-motorized Recreation Emphasis**

**3.7 Late-successional Forest Landscapes**

**Category 4:** Ecological values are managed through a full range of management options to provide recreation use, but are maintained well within the levels necessary to maintain overall ecological systems. Resource use for other values is emphasized where compatible with recreation use, and with little impact on ecological structure, function, or composition. Human use is recreation-oriented. Sights and sounds of people on the site are expected and may even be desired. Motorized transportation is common.

**4.1 Limited Motorized Use and Forest Product Emphasis**

**4.2A Spearfish Canyon**

**4.2B Peter Norbeck Scenic Byway**

**Category 5:** These areas are primarily forested ecosystems that are managed through a full range of management options to meet a variety of ecological and human needs. Ecological conditions will be maintained, while emphasizing selected biological structures and compositions considering the range of natural variability. These lands often display high levels of investment, use and activity, density of facilities, and evidence of vegetative manipulation. Users expect to see other people and evidence of human activities. Facilities supporting the various resource users are common. Motorized transportation is common.

Intensive management is often necessary to move the systems towards the range of natural variability. This management is usually a combination of prescribed fire and timber harvest treatments. These lands would appear similar to natural-appearing landscapes if left to function under natural disturbance processes.

**5.1 Resource Production Emphasis**

**5.1A Southern Hills Forest and Grassland Areas**

**5.2A Fort Meade VA Hospital Watershed**

**5.3A Black Hills Experimental Forest**

**5.3B Sturgis Experimental Watershed**

**5.4 Big Game Winter Range Emphasis**

**5.43 Big Game and Resource Production**

**5.4A Norbeck Wildlife Preserve**

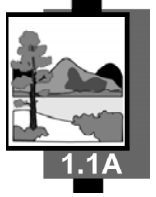
**5.6 Forest Products, Recreation and Big Game Emphasis**

**Category 6:** Non-forested ecosystems (grasslands). This category is not used in this plan.

**Category 7:** Specific intermingled public and private lands. This category is not used in this plan.

**Category 8:** Ecological conditions, including processes, are likely to be permanently altered, beyond the level needed to maintain natural-appearing landscapes and ecological processes, by human activities. These areas are generally small in scale. Ecological values are protected where they affect the health and welfare of human occupancy. Areas such as mines or other concentrated uses are included in this category. Human activities are generally commercial in nature directly or indirectly providing jobs and income. Motorized transportation is common.

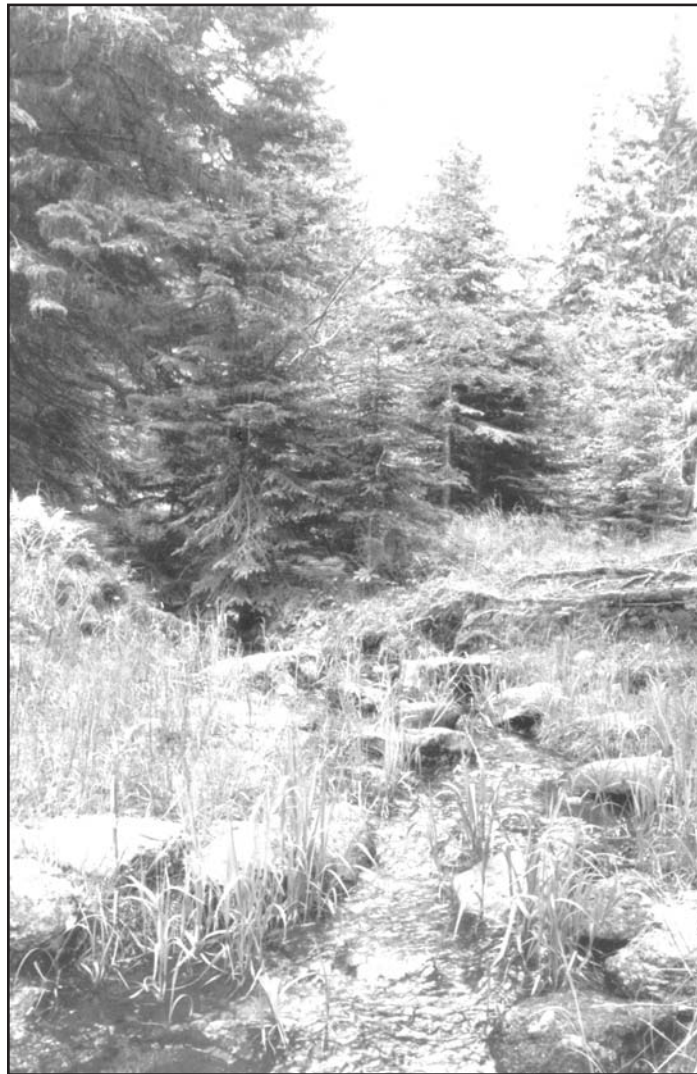
**8.2 Developed Recreation Complexes**

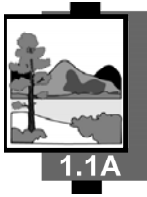


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## Management Area 1.1A Black Elk Wilderness

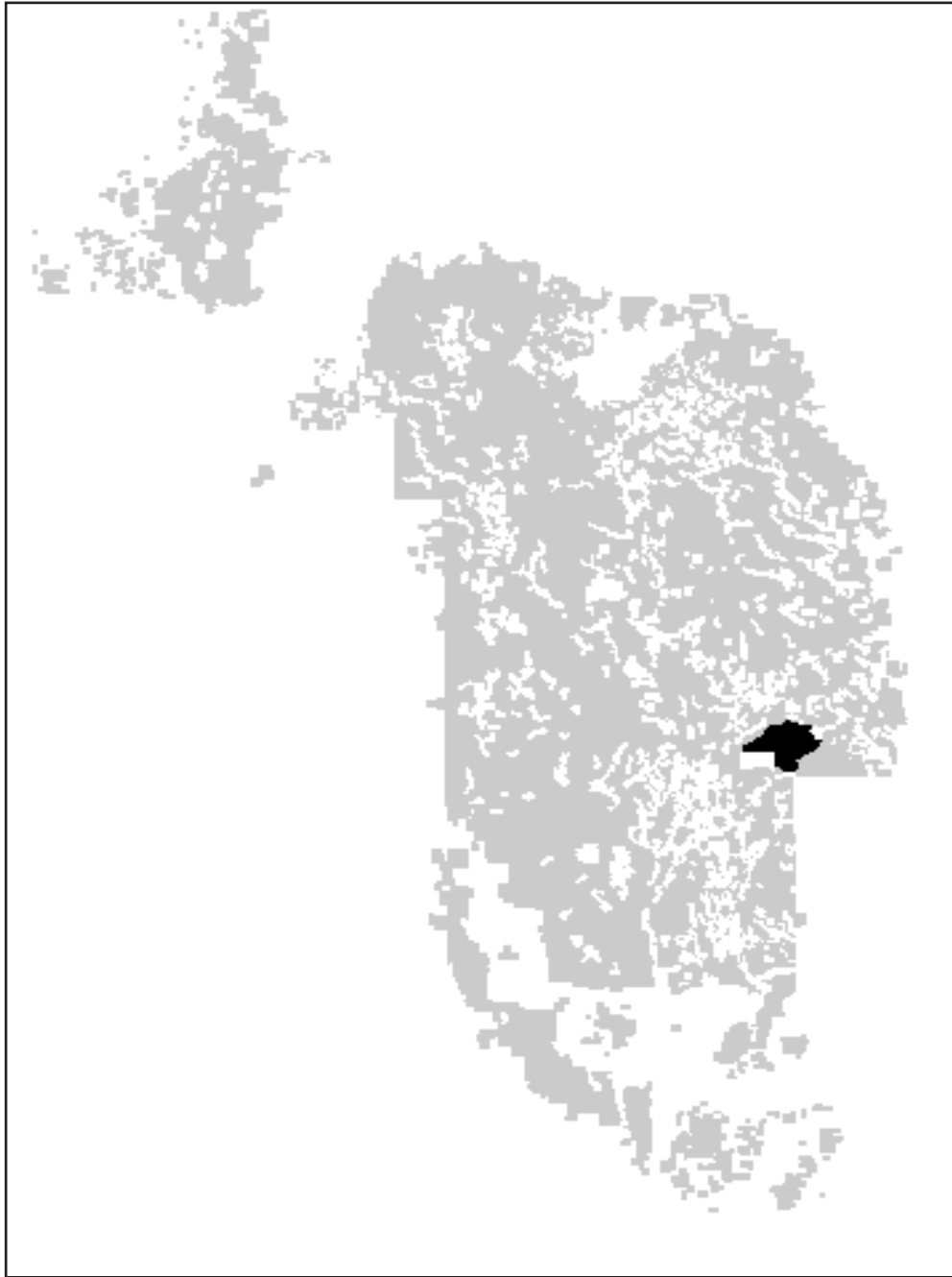
**Theme:** This area is managed to protect and perpetuate natural processes while providing opportunities for solitude and self-reliance.





## Management Area 1.1A

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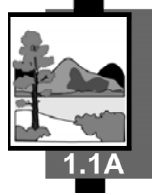
### **Management Area 1.1A**

(Includes Upper Pine Creek RNA of 850 acres)

13,543 acres

1.1 percent of Forest

48.9 Percent of Norbeck Wildlife Preserve



**Setting:** The 13,543-acre Black Elk Wilderness is in the center of the Norbeck Wildlife Preserve. Named for Black Elk, a famous Oglala holy man, this area became a designated Wilderness in 1980. Originally 9,831 acres, an additional 3,712 acres were added in 2002 (P.L. 107-206, Sec. 706(n)). Harney Peak, at 7,242 feet above sea level, is the highest point in the United States east of the Rocky Mountains. From a historic lookout tower atop Harney Peak, one has a panoramic view of four states (South Dakota, Nebraska, Wyoming and Montana), as well as the spectacular granite formations and cliffs of the Black Elk Wilderness. About 38 miles of hiking trails are located in the Wilderness; they lead to the top of Harney Peak from almost every direction. This area includes the Upper Pine Creek Research Natural Area (RNA) which was administratively designated in 1932, and contains 883 acres within the Norbeck Wildlife Preserve and Black Elk Wilderness. The area also has 2.5 miles of boundary in common with Mount Rushmore National Memorial and 7.2 miles of boundary in common with Custer State Park.

## Activities and Opportunities:

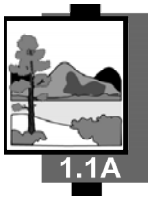
Dispersed Recreation	Yes
On-Road Motorized Vehicles	No Roads
Off-Road Motorized Vehicles	No
Timber Harvesting	No
Livestock Grazing	Yes, Uses Established Prior to Wilderness Designation
Mineral Development	Valid and Existing Rights Only

**Desired Future Condition:** Most people travel along the major trails leading to Harney Peak Lookout. Away from trails and camping areas, signs of people are almost non-existent. Primitive trails are available and cross-country travel is allowed. Encounters on primitive trails are extensive during peak-use seasons but are limited during off-use seasons.

In some areas there is a high chance of seeing the effects of insect and disease infestations. In most areas, forested areas appear mature, though some loss of shrubs and other forage species occurs in the understory as canopies close. In yet other areas, recent burns or blowdowns may dominate the landscape.

Plant communities indigenous to the Black Elk Wilderness are well represented and have evolved under fire disturbance. Primary natural processes are allowed to serve an integral role in the maintenance of the Wilderness ecosystem to the extent possible considering effects to lands outside of the Wilderness.

The most conspicuous tree species is the ponderosa pine. Other areas will exhibit stands of white spruce, aspen and other hardwoods. Some natural openings and meadows interrupt forested stands. Perhaps the most pervasive and dominant



## Management Area 1.1A

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features throughout the Wilderness are the massive granite outcrops and precipices.

Those visiting the area should experience solitude and primitive conditions. Primitive recreational opportunities are emphasized, which require a high degree of isolation, solitude, self-reliance and challenge. Livestock may be seen grazing in parts of the Wilderness. Pets are allowed on the trail system. Recreational stock, like horses and mules, are also allowed in the Wilderness.

Wilderness areas will be managed “to secure the benefits of an enduring resource of Wilderness” as called for in the Wilderness Act. These areas will serve as a foundation for healthy, diverse ecosystems where biodiversity and natural values are protected. They will be places where spiritual and psychological values are maintained and opportunities are provided for people who desire solitude and want primitive recreation in places of primeval character and wilderness influence. Wilderness visitors will have a shared understanding of the role and value of wilderness to society and practice minimum impact recreation activities.

The Black Elk Wilderness will continue to be managed to protect and perpetuate its Wilderness character and values. Although the Wilderness will be available for recreational opportunities, human use may be limited if it impedes the free play of natural forces or interferes with natural successions in the ecosystem. Based upon past use in Black Elk, it appears that the maximum recreation carrying capacity will be reached toward the end of this decade. Recreational use in the Upper Pine Creek Research Natural Area (RNA) will be discouraged, and no managed trails exist or will be built through the area. It is designated unsuitable for livestock grazing and is closed to this use.

Specific management for this Wilderness will be described in the Wilderness Implementation Schedule. The Wilderness Implementation Schedule will incorporate the direction described below.

## Management Area Goals and Objectives

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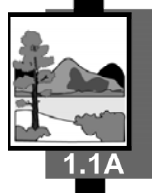
### Social Elements

#### General

1.1A-401. Actively restore Wilderness ecosystems damaged by humans to the degree feasible. Identify the processes needed to access, restore, or mitigate human-induced change. **OBJECTIVE**

1.1A-402. Use Wilderness as a baseline by measuring indicators critical to ecological integrity. **GOAL**

1.1A-403. Restore fire in Wilderness to its natural role in the ecosystem. **GOAL**



1.1A-404. Protect and preserve the social values unique to certain cultures while recognizing them within the context of an enduring resource of Wilderness. **GOAL**

1.1A-405. Permit visitor freedom in Wilderness to the maximum extent feasible while recognizing that restrictions may be necessary to protect the quality of the wilderness experience. Take responsive actions quickly to protect the Wilderness resource. **OBJECTIVE**

1.1A-406. Provide opportunities for solitude in the Wilderness. **GOAL**

1.1A-407. Coordinate with Department of Defense agencies and the Federal Aviation Administration to develop procedures and guidelines to avoid or mitigate low-level flights over the Wilderness. **OBJECTIVE**

1.1A-408. Emphasize opportunities outside Wilderness for recreation activities that are not dependent on a wilderness setting. **GOAL**

## **Management Area Standards and Guidelines**

### **Physical Elements**

#### **Water**

1.1A-1201. Use natural-appearing techniques to protect wetlands if alternate trail locations are unavailable. **GUIDELINE**

#### **Minerals**

1.1A-1501. No recommendations favorable to mineral leasing will be made nor will common variety mineral exploration, development or production be authorized or approved. **STANDARD**

### **Biological Elements -- Flora**

#### **Vegetation**

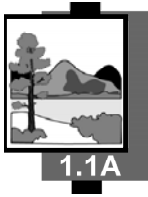
1.1A-2101. Provide for natural plant succession. **STANDARD**

1.1A-2102. Vegetative restoration projects may be needed where human activities have altered natural ecosystems and there is no reasonable expectations of natural revegetation. Species native to the ecosystem should be planted. Where non-native species must be used, they should be selected based on the likelihood that they will not persist beyond the rehabilitation period. **GUIDELINE**

1.1A-2103. Manage wilderness within the context of larger landscapes to ensure the protection and integrity of natural and biological processes. **GUIDELINE**

#### **Rangeland**

1.1A-2501. Livestock grazing activities shall be permitted in accordance with guidelines in House of Representatives Report No. 96-617. **STANDARD**



## Management Area 1.1A

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1.1A-2502. Wildlife and livestock habitat will be managed to maintain the desired plant communities. Range improvements are limited to those necessary to maintain the potential natural plant communities and to resolve grazing and wilderness use conflicts. **GUIDELINE**

1.1A-2503. Existing livestock grazing may continue. Do not permit any increase in livestock numbers (head or animal months). **STANDARD**

1.1A-2504. The Palmer Gulch Allotment is designated suitable to graze livestock; the remainder of the Wilderness is designated as unsuitable to graze livestock. However, because the unsuitable area is not fenced, occasional livestock use may take place. **STANDARD**

1.1A-2505. Livestock grazing in the area designated unsuitable within the Wilderness may occasionally be used as a tool to achieve management objectives. These uses could include noxious weed control, hazard reduction of fine fuels, and grass/shrub health, etc. **GUIDELINE**

1.1A-2506. \*See 2.2-2502.

## **Disturbance Processes**

### **Fire and Fuels**

1.1A-4101. Manage fire and fuels to promote the fire regime ecosystem. **STANDARD**

1.1A-4102. Emphasize the use of prescribed fires through management and natural ignitions under approved prescribed burn plans to reduce unnatural buildups of fuels and to simulate conditions representative of a ponderosa pine fire regime. A fire management strategy will be prepared to describe the procedures and conditions needed to meet this guideline. **GUIDELINE**

1.1A-4103. The use of natural control features and hand tools are the preferred means to confine, contain and/or control wildfires. **GUIDELINE**

### **Noxious Weeds**

1.1A-4301. Control noxious weeds by grubbing, chemicals or biological agents when they threaten lands outside Wilderness or when they are spreading within the Wilderness, provided that it is possible to effect control without causing serious adverse impacts on Wilderness values. **GUIDELINE**

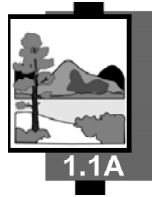
## **Social Elements**

### **Recreation**

1.1A-5101. Human influences will be managed to preserve Wilderness values, physical characteristics and natural processes. **STANDARD**

1.1A-5102. Wilderness will be managed to prevent degradation. Improve conditions in situations where natural processes are not operating freely, and where any of the values for which a wilderness was created are impaired.

**GUIDELINE**



1.1A-5103. Utilize a permit system to manage use levels and patterns if needed to protect the Wilderness. The estimated Wilderness carrying capacity is 32,100 recreation visitor days (RVD). **GUIDELINE**

1.1A-5104. Maximum party size in Wilderness is 25 (any combination of people and recreation stock). This size limit will apply yearlong. Smaller party-size limits for people and stock will be established where biological and physical resource capabilities cannot support that level of use. **STANDARD**

1.1A-5105. Pets allowed in the Wilderness must be under control (either by voice or by physical constraint, such as a leash). **GUIDELINE**

1.1A-5106. Recreational livestock is prohibited within 100 feet of lake shores and stream banks, except during watering and through travel. **STANDARD**

1.1A-5107. Require users camping overnight with recreational livestock to provide processed feeds that are free of viable noxious weed seeds. **STANDARD**

1.1A-5108. Evidence of management should vary by opportunity class as described below:

DESCRIPTION	PRISTINE (UPPER PINE CREEK RNA)	PRIMITIVE (IN BETWEEN)	TRANSITION (TRAIL CORRIDORS)
Physical	Unmodified natural environment	Unmodified natural environment	Predominately unmodified environment.
Social	Slight contact with other users. No evidence of use. 80% chance of 2 or fewer encounters per day. Potential for user conflicts is less than 50% on a daily basis.	Minimum contact with other users. Minimum evidence of use. 80% chance of 6 or fewer encounters per day. Potential for user conflicts is less than 50% on a daily basis.	Highest contact with other users. Greatest evidence of use. 80% chance of 20 or fewer encounters per day. Potential for user conflicts is close to 100% on a daily basis.
Management Action	Virtually no management	Minimum management presence.	Moderate management presence.

**GUIDELINE**

1.1A-5109. The recreation opportunity spectrum (ROS) class is Primitive.

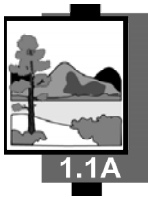
**GUIDELINE**

### Scenery Management

1.1A-5601. The adopted scenic integrity objective is very high. **GUIDELINE**

### Heritage Resources

1.1A-6101. Do not provide interpretive facilities at heritage resource sites, and do not restore or enhance heritage resources for recreational purposes; however, authorize continued maintenance of the Harney Peak Lookout Tower, which is listed on the National Register of Historic Places.



## Management Area 1.1A

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- a. The Harney Peak Lookout Tower will be reconstructed to provide public safety and to reduce the threat of vandalism.
- b. One interpretive sign will be placed inside the Lookout Tower, explaining the significance of this National Register of Historic Places site.

### GUIDELINE

1.1A-6102. Provide for heritage resource inventory. **GUIDELINE**

## Administrative Elements

### Lands

1.1A-8101. Maintain the Wilderness boundary location. **STANDARD**

### Utility Corridors

1.1A-8301. Prohibit utility corridors. **STANDARD**

### Special Uses

1.1A-8501. Permit only those uses authorized by Wilderness legislation that cannot be reasonably met on non-Wilderness lands. **GUIDELINE**

1.1A-8502. Keep outfitter/guide activities harmonious with activities of non-guided visitors. Include outfitter/guide operations in calculations of recreation capacities.

- a. Allow picketed grazing of recreation livestock.
- b. Prohibit overnight grazing of recreation livestock.
- c. Prohibit outfitter/guide camps.
- d. Outfitter/guide permits will be limited to two, each with a limit of 200 visitor-days per year.

### STANDARD

1.1A-8503. Prohibit the collecting of rocks, minerals, and paleontological materials. **STANDARD**

## Transportation and Travel Elements

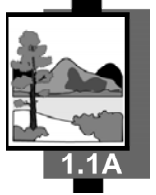
1.1A-9101. Maintain all trails for foot and horse travel unless specifically closed.

### GUIDELINE

1.1A-9102. Construct or reconstruct trails when needed as part of the transportation system. Consider the primitive character of the area in project design and analysis. Trail density will not exceed an average density of 2 miles per square mile over the wilderness area. In trail design and planning, minimize visual impacts of trails and eliminate duplicate routes. **GUIDELINE**

1.1A-9103. Control erosion on trails and travel ways. **STANDARD**

1.1A-9104. Only the minimum signing necessary should be provided for resource protection and directional signs at trail junctions. **GUIDELINE**



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1.1A-9105. Aircraft flights less than 2,000 feet above terrain will be discouraged.

**GUIDELINE**

1.1A-9106. Obliterate existing roads or unneeded trails as opportunities exist.

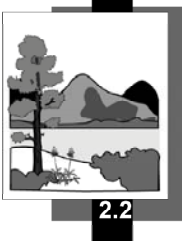
**STANDARD**

1.1A-9107. Prohibit new road construction or reconstruction of existing roads.

**STANDARD**

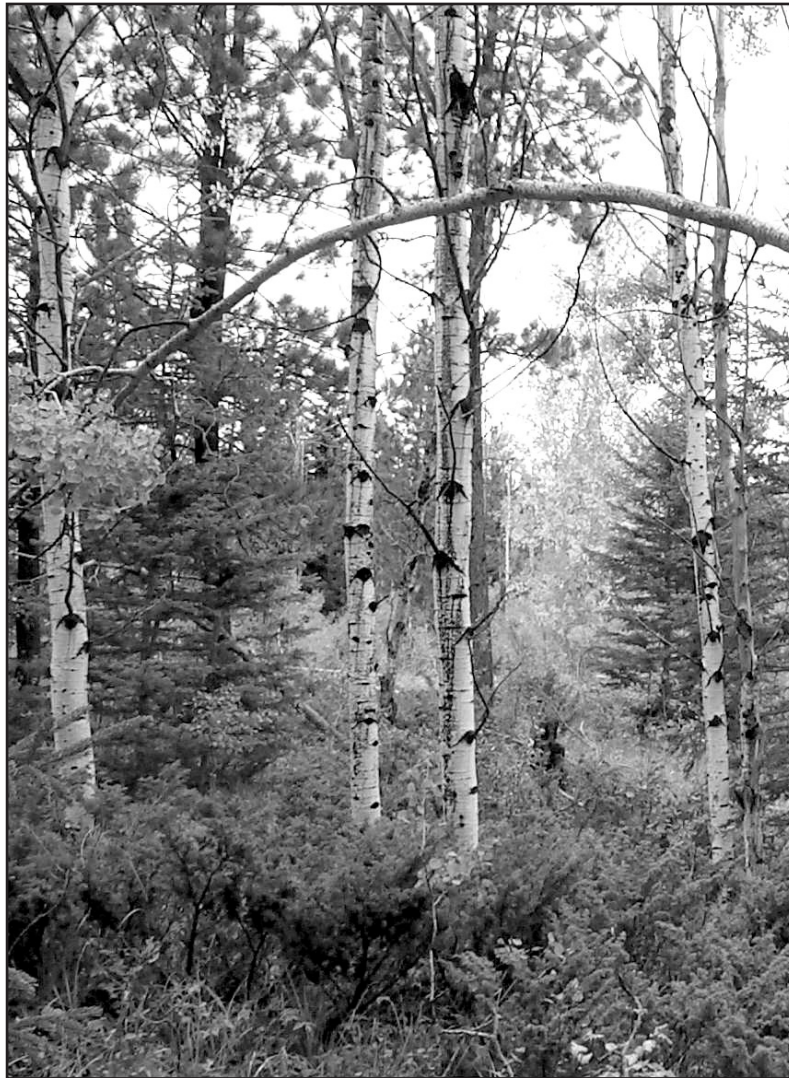
1.1A-9108. Prohibit motorized and mechanized travel. **STANDARD**

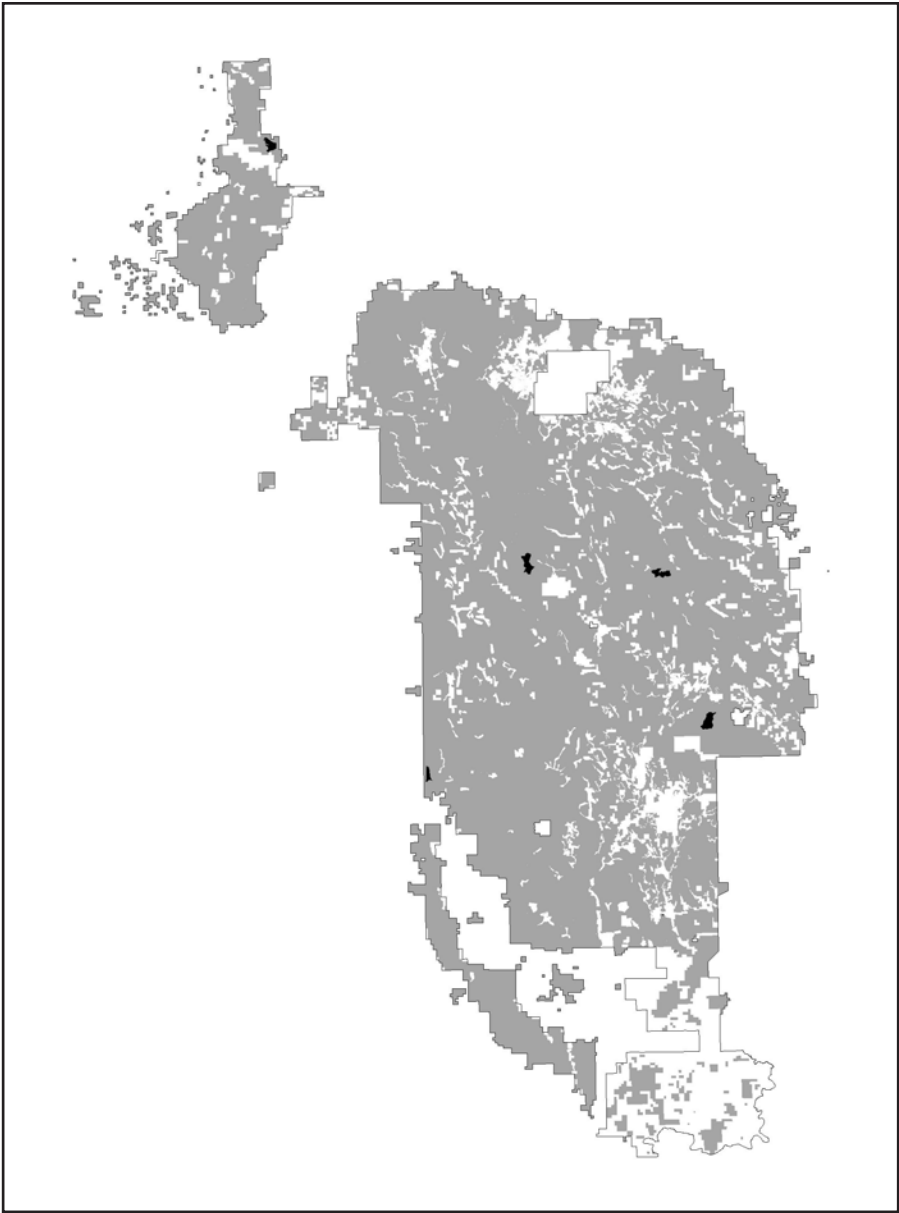
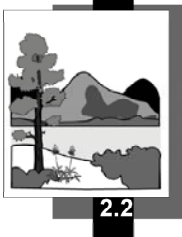
1.1A-9109. \*NEW. If trails are to be constructed or relocated, route them away from R2 sensitive and species of local concern (SOLC) plant occurrences. Do not increase climbing access over what currently exists where R2 sensitive or SOLC plants occur. **STANDARD**



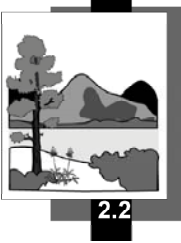
## \*Management Area 2.2 Research Natural Areas

**Theme:** Research natural areas form a national network of ecological areas designated in perpetuity for non-manipulative research, education, and biodiversity conservation. This prescription is applicable to both existing research natural areas and areas pending formal establishment.





<b>Management Area 2.2</b>	
<p><b>Existing Area:</b> Upper Pine Creek (included in M.A. 1.1 Black Elk Wilderness)</p>	<p><b>Establishment Pending:</b> North Fork Castle Creek Canyon City Hay Creek (Analyzed as Geis Spring) Fanny/Boles</p>
<b>TOTAL = 850 acres</b>	<b>TOTAL = 2,276 acres (preliminary)</b>
<b>Total approximately = 3,126 acres (less than 1 percent of Forest)</b>	



**Setting:** Research natural areas (RNAs) are selected to preserve a spectrum of relatively pristine areas that represent a wide range of natural variability within important natural ecosystems and environments (coniferous forest, shrubland, grassland, alpine, aquatic, and geological environments), and areas that have special or unique characteristics of scientific importance.

The setting is natural. The sights and sounds of people or management activities within the area will be infrequent, though they may be common in adjacent areas. There may be some evidence of research or study activities which are conducted using methods that are nondestructive and nonmanipulative. Plants, plant communities and animals rare in the state may be present.

**Activities and Opportunities:**

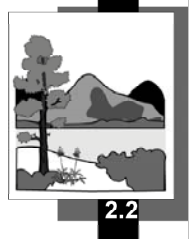
Dispersed Recreation	Non-motorized / Non-mechanized dispersed use including hunting and fishing is allowed without developments such as trails or signs consistent with Guideline 2.2-1002.
Research	Research methods are nondestructive and nonmanipulative.
Education	Opportunities are available to learn about natural processes using methods that are nondestructive and nonmanipulative.
Motorized Vehicles	Foot and horse travel only
Vegetation Management	Vegetation management including livestock grazing is used only as needed to conserve the biological characteristics for which the RNA was established using methods with the least impact on desired RNA ecological processes.
Mineral Development	Withdrawn from mineral entry through BLM process

**Desired Future Condition:** Vegetation, habitat, soil productivity, water quality, and ecological processes are generally expected to be within the range of natural variability and feature the vegetation communities for which the RNA was established.

The objectives of establishing research natural areas are contained in FSM 4063.

**Management Area Goals and Objectives**

2.2-401. \*NEW. Establish research natural areas (RNAs) to form a long-term network of ecological reserves designated for non-manipulative research and education and the maintenance of biological diversity. As specified in the Record of Decision for the Phase II Amendment, include the following areas: Canyon City, Fanny/Boles, Hay Creek, and North Fork Castle. **GOAL**



2.2-402. \*NEW. Prepare establishment records and management plans following Forest Service manual direction for those areas specified for designation as research natural areas within 3 years of the Phase II Amendment Decision.

**OBJECTIVE**

## **Management Area Standards and Guidelines**

### **Physical Elements:**

#### **General**

2.2-1001. \*NEW. Conserve the natural condition of the ecosystem, its processes, and any species or values for which the research natural area was established.

**STANDARD**

2.2-1002. \*NEW. Allow uses that maintain or improve the ecological characteristics for which the research natural area (RNA) was designated. If monitoring reveals that a use begins to affect the ecological characteristic, the use will be removed from the RNA. **GUIDELINE**

#### **Minerals**

2.2-1501. \*NEW. Withdraw from mineral entry in conformance with Section 204 of Federal Land Policy and Management Act of 1976 (PL 94-579). All lease applications will have “no surface occupancy” stipulation. No mineral material permits will be issued. **STANDARD**

### **Biological Elements - - Flora:**

#### **Silviculture**

2.2-2401. \*NEW. Research natural areas will not be included in the suitable timberland base. **STANDARD**

#### **Rangeland**

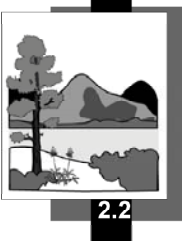
2.2-2501. \*NEW. Do not increase permitted livestock animal unit months or developments pending the research natural area (RNA) management plan in RNAs. Grazing suitability and desired vegetative conditions will be determined by the RNA management plan. **STANDARD**

2.2-2502. \*NEW. The Upper Pine Creek Research Natural Area is designated unsuitable to livestock grazing. However, because the area is not fenced, occasional livestock use may take place. **STANDARD**

### **Biological Elements - - Fauna:**

#### **Wildlife and Fish**

2.2-3201. \*NEW. Allow habitat manipulation only for the protection of threatened, endangered, and sensitive species, or where it is necessary to perpetuate or restore natural conditions. **STANDARD**



## **Disturbance Processes:**

### **Fire and Fuels**

2.2-4101. \*NEW. Use minimum impact suppression tactics when suppressing wildfire. **STANDARD**

2.2-4102. \*NEW. Use management-ignited prescribed fire when necessary to restore a natural fire regime, to achieve resource management objectives, or to reduce unnatural fuel loading. **STANDARD**

2.2-4103. \*NEW. The use of natural control features and hand tools are the preferred means to confine, contain and/or control wildfires. **STANDARD**

### **Insects, Disease, and Non-native Invasive Species**

2.2-4201. \*NEW. Control populations of invasive, non-native plant and wildlife species. Use control measures that minimize threats to native species. **STANDARD**

## **Social Elements:**

### **Recreation Opportunity Spectrum**

2.2-5101. \*NEW. The recreation opportunity spectrum class is “semi-primitive, non-motorized.” **STANDARD**

### **Developed Recreation**

2.2-5201. \*NEW. Use restrictions or closures under 36 CFR 219 Subpart B to protect the area from actual or potential damage due to public use. **STANDARD**

2.2-5202. \*NEW. Allow pre-existing trails to be used for recreational and scientific or educational access except when they are a threat to the values for which the research natural area was established. **STANDARD**

### **Special Uses**

2.2-5401. \*NEW. Do not permit collection of special forest products. **STANDARD**

### **Scenery Management**

2.2-5601. \*NEW. The adopted scenic integrity objective is high. **GUIDELINE**

## **Administrative Elements:**

### **Corridors**

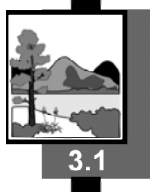
2.2-8301. \*NEW. No new utility corridors or additional development within existing corridors will be permitted. **STANDARD**

## **Transportation System Management:**

### **General**

2.2-9101. \*NEW. Prohibit motorized and mechanized use except when it provides necessary access for research or emergency purposes (e.g., human life, fire). **STANDARD**

2.2-9102. \*NEW. Close or obliterate existing roads. **STANDARD**

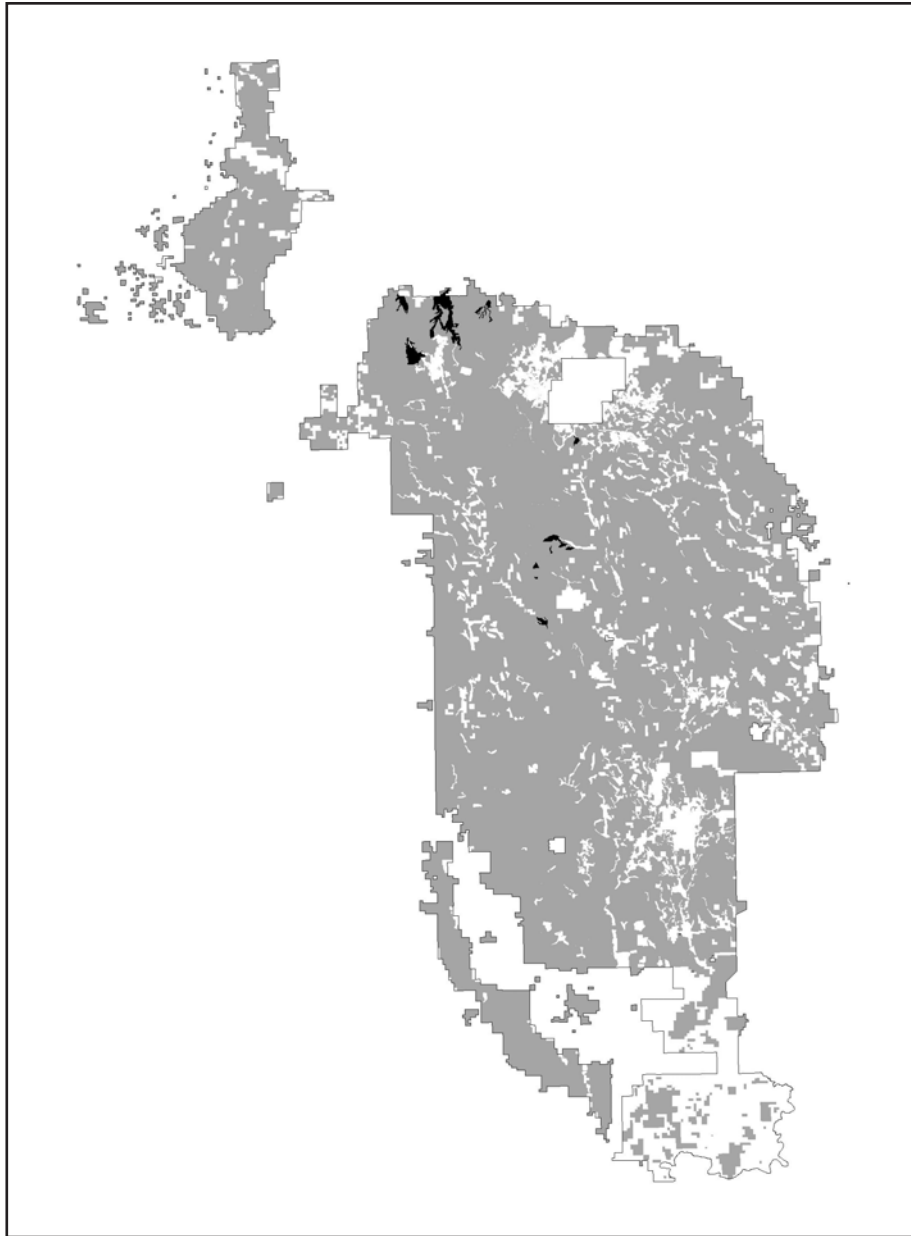


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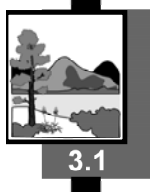
## Management Area 3.1 Botanical Areas

**Theme:** This area is managed for protection of unusual or special characteristics.





<p><b>Management Area 3.1</b></p> <p>7,348 Acres</p> <p>Less than 1 percent of Forest</p>	<p><b>Botanical Areas</b></p> <ul style="list-style-type: none"><li>Upper Sand Creek</li><li>Dugout Gulch Bear/Beaver Gulches</li><li>Higgins Gulch</li><li>Englewood Springs</li><li>Black Fox Valley</li><li>North Fork Castle Creek</li><li>McIntosh Fen</li></ul>
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**Setting:** Botanical management areas or rare natural communities may be located in a number of places throughout the Forest. The environmental conditions in which they exist may differ from each other, such as site-specific climatic conditions, soil types, elevations and precipitation zones; however, the thread common to all of them is that they exhibit plant communities, associations and/or individual species of particular interest

### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Minimal
Livestock Grazing	Yes
Mineral Development	Potential Mineral Withdrawal

**Desired Future Condition:** Management emphasis is on conserving or enhancing areas of botanical interest and, where appropriate, developing and interpreting these areas for public education.

These areas are protected to maintain their botanical interest values. Botanical areas (BAs) provide protection for threatened, endangered or sensitive species, and other elements of biological diversity, or for their scenic and/or public property values. Botanical areas can vary in size from small sites to fairly large sites.

Botanical areas should be studied to try to identify what factors have led to the area's characteristic habitat. This information can be used to conserve and enhance the area.

A management strategy may be developed for botanical areas.

Vegetation, habitat, soil productivity and water quality are usually unaffected by humans. The setting is usually natural, but varies from site to site. Facilities may be present to the extent needed to maintain the area or to facilitate visitor use of the area. Recreational use of these sites is primarily intended for interpretation and educational activities.

Many of the botanical management areas include various recreation opportunities. In addition to activities of flora observations, interpretation and photography, these areas may provide for such opportunities as fishing, hunting, picnicking, birdwatching, and hiking.

Renewable and extractive uses are restricted or prohibited. Livestock grazing is allowed if it does not conflict with the values for which the botanical area was designated. These sites may be closed to public use when needed to protect



## Management Area 3.1

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botanical attributes from disturbances. No new roads are permitted in these areas, and new trails are not constructed, unless they are needed for interpretive or educational purposes or to correct resource damage currently occurring.

## **Management Area Goals and Objectives**

### **Biological Elements -- Flora**

#### **Forest Communities**

3.1-201. \*Maintain or enhance the botanical features of these areas. Monitor to determine if botanical features are being maintained. **OBJECTIVE**

## **Management Area Standards and Guidelines**

### **General**

3.1-1001. \*Protect the unique biological, geological, historical, paleontological, or additional botanical values that may continue to be discovered, along with the botanical values for which the botanical area was designated. No new mineral material permits will be issued for this area. **STANDARD**

### **Physical Elements**

#### **Minerals**

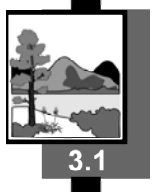
3.1-1501. Withdraw this area from mineral entry in conformance with Section 204 of the Federal Land Policy and Management Act of 1976 (PL 94-579) when withdrawal is necessary to protect the values for which the botanical area was designated. **STANDARD**

### **Biological Elements -- Flora**

#### **Forest Communities**

3.1-2101. Allow logging and wood gathering activities only when necessary to maintain, restore or enhance values for which the botanical area was designated. **STANDARD**

3.1-2102. Tentatively suitable lands within these areas do not contribute to the allowable sale quantity and are not part of the suitable timber land base. **STANDARD**



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## **Rangeland**

3.1-2501. Allow livestock grazing if it does not conflict with the values for which the botanical area was designated. **STANDARD**

3.1-2502. Allow new improvements only when they are necessary to maintain, restore or enhance the values for which the botanical area was designated.

### **GUIDELINE**

3.1-2503. \*Restrict access of domestic livestock to protect the R2 sensitive and species of local concern plant occurrences in designated botanical areas. **STANDARD**

## **Disturbance Processes**

### **Fire and Fuels**

3.1-4101. \*Manage fire and fuels through control practices and prescribed fire to protect the values for which the botanical area was designated. Use minimum impact suppression tactics when suppressing wildfire. **STANDARD**

3.1-4102. Consider opportunities for prescribed natural fire (PNF) and cover under an approved PNF strategy if appropriate. **GUIDELINE**

## **Social Elements**

### **Recreation**

3.1-5101. Allow recreation use with emphasis on interpretation and education when it does not threaten the values for which the botanical area was designated.

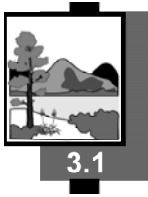
### **STANDARD**

3.1-5102. Protect the area from actual or potential damage due to public use. Utilize closures under 36 CFR 261.53 Subpart B when necessary. **STANDARD**

3.1-5103. The Recreation Opportunity Spectrum (ROS) classes are listed below.

- a. Upper Sand Creek - Semi-primitive Non-motorized.
- b. Dugout Gulch - Semi-primitive Non-motorized.
- c. Bear/Beaver Gulches - Semi-primitive Non-motorized.
- d. Higgins Gulch - Roaded Natural.
- e. Englewood Springs - Semi-primitive Non-motorized.
- f. Black Fox Valley - Roaded Natural
- g. North Fork Castle Creek -- Semi-primitive Motorized
- h. McIntosh Fen - Semi-primitive Non-motorized (except snowmobiles operating on snow).

### **GUIDELINE**



## Management Area 3.1

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### **Scenery Management**

3.1-5601. The adopted scenic integrity objectives (SIO) is high. **GUIDELINE**

### **Administrative Elements**

#### **Special Uses**

3.1-8501. Allow authorization that protects or enhances the area. **STANDARD**

### **Transportation and Travel Management**

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

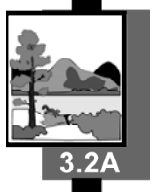
3.1-9101. \*Travel is restricted to designated routes except for emergency and administrative use. **STANDARD**

3.1-9102. \*Off-road motorized travel is prohibited except for emergency and administrative use. **STANDARD**

3.1-9103. \*Over-the-snow motorized travel is restricted to designated routes and areas except for emergency and administrative use. **STANDARD**

3.1-9104. Construct new roads or trails only when they are necessary for interpretive or educational purposes or when they will correct resource damage occurring from existing roads, trails or other uses. Roads may also be constructed if they are needed to maintain, restore or enhance the values for which the botanical area was designated. **STANDARD**

3.1-9105. Do not construct any new System roads in the Upper Sand Creek Botanical Area. **STANDARD**



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## Management Area 3.2A Inyan Kara Mountain

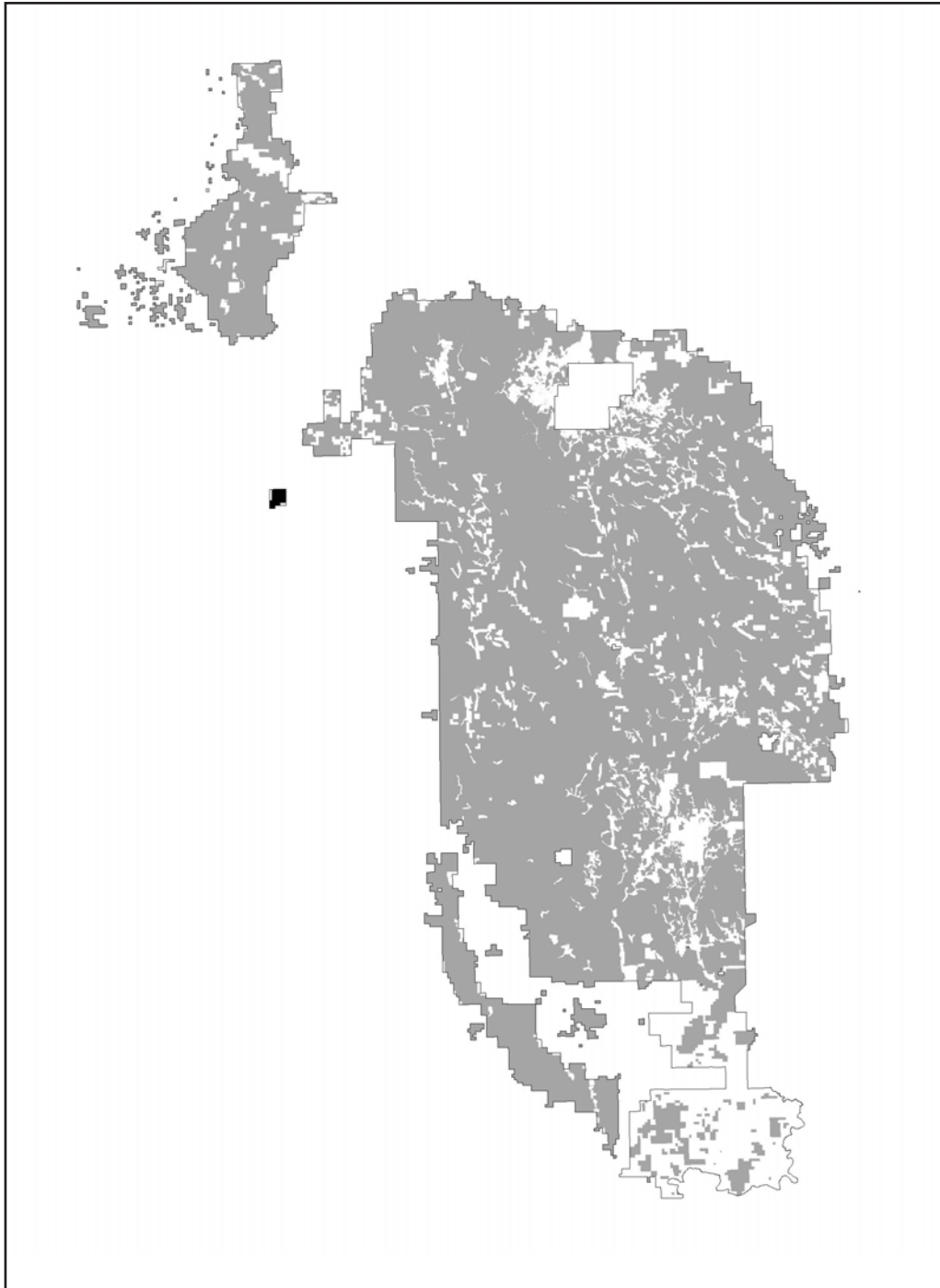
**Theme:** This area is managed for protection of unusual scenic, heritage, historical, cultural, geological, botanical, zoological, paleontological, spiritual and other special characteristics.



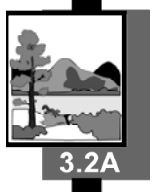


Management Area 3.2A

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**Management Area 3.2A**  
1,304 Acres  
Less than 1 percent of Forest



**Setting:** Inyan Kara is a tree-covered, dome-like upheaval entirely surrounded by a grass-covered prairie. Because it is an isolated mountain, there is no evidence of recent timber harvest or development. The 1,397-acre site is completely surrounded by private land, and the Forest Service has no permanent right-of-way access. Because of its unique characteristics, Inyan Kara is considered a Special Interest Area.

## Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	No Roads
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	No
Livestock Grazing	Yes
Mineral Development	Valid and Existing Rights Only

**Desired Future Condition:** Inyan Kara Mountain offers a primitive setting where natural processes are evident. There may be many dead trees apparent due to fire, insect and disease infestations. There also may be older trees and pockets where the trees are thick. Dog-hair stands occur sporadically. A considerable amount of down, dead woody material occurs throughout the area.

Visitors seldom hear or see any motorized vehicles in this management area. Under the most typical circumstances, users find a sense of solitude. Hiking and wildlife viewing is available. From the top of the mountain, the visitor can see many miles, overlooking prairies mainly to the west and north. Volcanic rock formations are prominently visible, including columns of laccoliths. It is necessary to acquire right-of-way access to these National Forest Lands.

Ponderosa pine is the most conspicuous tree species, although Rocky Mountain juniper, aspen and other hardwoods also occur.

Heritage resources are not restored or enhanced for visitor interpretation, but are protected in accordance with laws and regulations. Wildlife representative of a prairie/forest ecosystem are present on this isolated mountain.



## **Management Area Goals and Objectives**

### **Social Elements**

#### **Heritage Resources**

3.2A-401. Emphasize opportunities for heritage resource research. **GOAL**

### **Administrative Elements**

#### **Lands**

3.2A-501. Acquire permanent access across private lands. **OBJECTIVE**

## **Management Area Standards and Guidelines**

### **Physical Elements**

#### **Minerals**

3.2A-1501. Withdraw from mineral entry in conformance with Section 204 of Federal Land Policy and Management Act of 1976 (PL 94-579). All lease applications will have “no surface occupancy” stipulation. No mineral material permits will be issued. **STANDARD**

### **Biological Elements -- Flora**

#### **Forest Communities**

3.2A-2101. Accept natural succession. **STANDARD**

3.2A-2102. Tentatively suitable lands within these areas do not contribute to the allowable sale quantity and are not part of the suitable timber land base. **STANDARD**

#### **Rangeland**

3.2A-2501. Livestock grazing is permitted at current levels. **STANDARD**

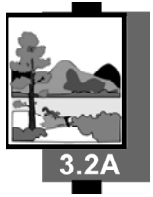
3.2A-2502. Allow new improvements only when they are necessary to maintain, restore or enhance the values inherent in a primitive setting where natural processes are evident. **GUIDELINE**

### **Disturbance Processes**

#### **Fire and Fuels**

3.2A-4101. Protect heritage resources from fire-suppression activities. **STANDARD**

3.2A-4102. Allow natural fuel build up and deterioration through natural processes including prescribed natural fire (PNF) when covered with an approved PNF strategy. **GUIDELINE**



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### **Insect and Diseases**

3.2A-4201. Allow insect and disease infestations to run their course. **STANDARD**

## **Social Elements**

### **Recreation**

3.2A-5101. The recreation opportunity spectrum (ROS) class is primitive.

**GUIDELINE**

### **Scenery Management**

3.2A-5601. The adopted scenic integrity objective (SIO) is Very High. **GUIDELINE**

### **Heritage Resources**

3.2A-6101. Protect significant heritage sites. **STANDARD**

3.2A-6102. Do not provide interpretive facilities at heritage resources sites; do not restore or enhance heritage resources for recreational purposes. **STANDARD**

## **Administrative Elements**

### **Special Uses**

3.2A-8501. Manage surface occupancy to reduce impact on historic values.

**STANDARD**

3.2A-8502. Appropriate authorizations are required for collection of rocks, minerals or paleontological materials. **STANDARD**

## **Transportation and Travel**

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

3.2A-9101. Mitigate resource damage from existing roads. **STANDARD**

3.2A-9102. Prohibit new road construction or reconstruction of existing roads.

**STANDARD**

3.2A-9103. Motorized and mechanized road and off-road travel is prohibited.

**STANDARD**

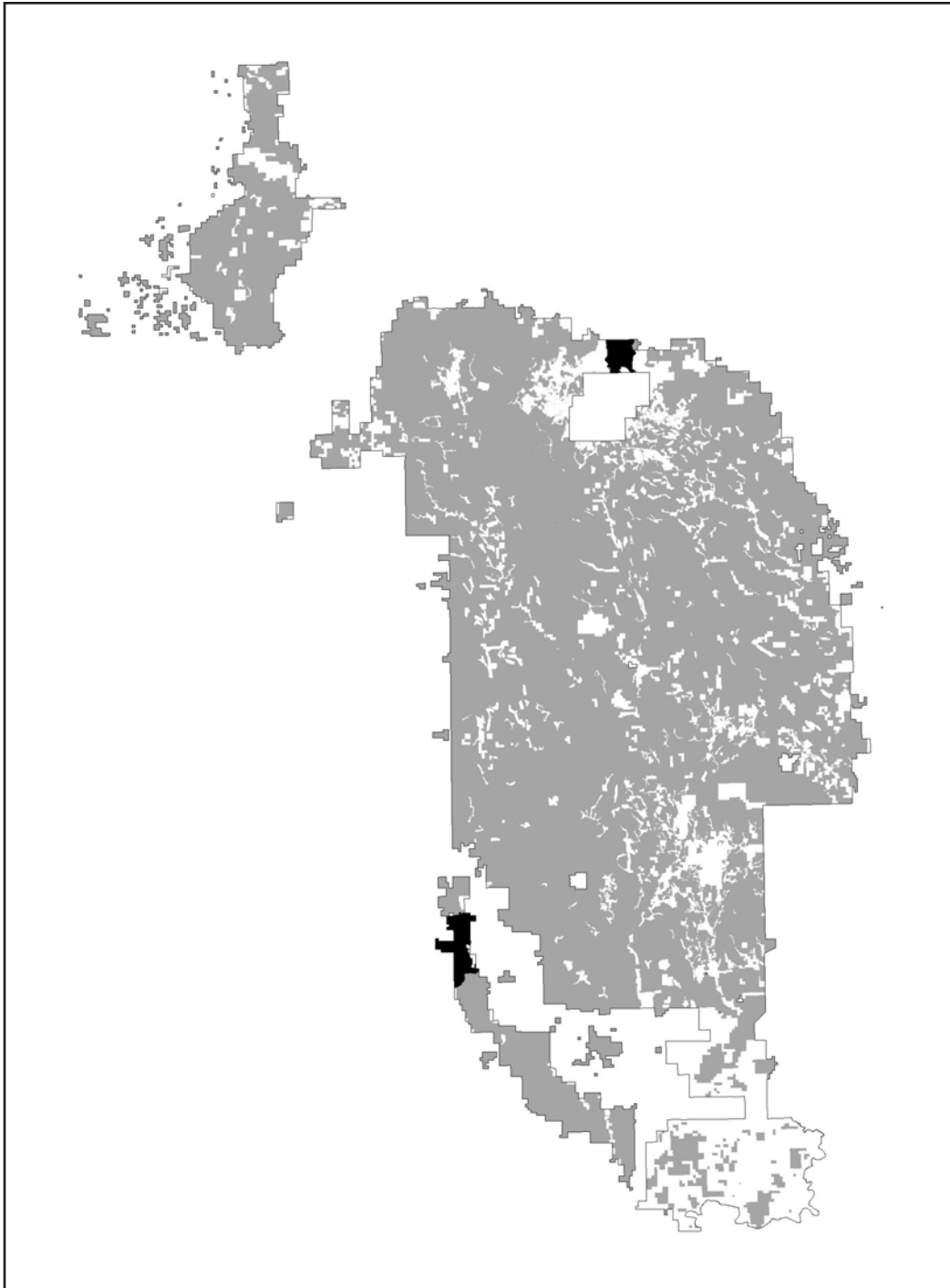
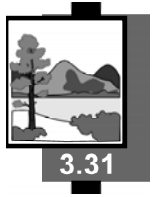
3.2A-9104. Over-the-snow motorized travel is prohibited. **STANDARD**



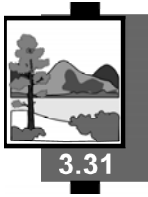
## Management Area 3.31 Backcountry Motorized Recreation Emphasis

**Theme:** These areas are managed to provide recreation opportunities on primitive roads and trails in a semi-primitive setting.





<p><b>Management Area 3.31</b> 11,870 Acres Less than 1 percent of Forest</p>	<p><b>Backcountry Areas</b> Polo Peak Wildcat Peak</p>
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**Setting:** Usually, these areas are 2,500 acres in size or larger and generally have primitive roads and a system of trails that allow motorized use.

**Activities and Opportunities:**

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	Designated Trails Only, except administrative use
Timber Harvesting	Minimal
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** Generally, few signs of people away from roads or trails are evident. There is little or no evidence of recent human activity or development. Overall, the landscapes of these areas are scenic and natural.

Management provides for a variety of uncrowded, motorized recreational activities in areas that appear natural. Challenging off-highway motorized opportunities exist on area trails. This management area also may be suitable for non-motorized uses, such as hiking and photography.

Enhancement of recreational opportunities is provided through improvements to trailheads, trails, signs, bridges, fences and shelters. Trails are designed to provide a range of opportunities for people, horses and vehicles.

Vegetation may be altered through a variety of management activities, including the use of prescribed fire from management and natural ignitions in order to enhance recreational opportunities, to provide vistas for people to view surrounding areas, or to meet objectives for wildlife habitat. Altered areas are small and are not generally evident to people visiting the area.

Snowmobile and cross-country skiing uses are allowed and skiers should expect to encounter snowmobiles.



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## **Management Area Goals and Objectives**

### **Social Elements**

#### **Scenery Management**

3.31-401. Emphasize visually appealing landscapes such as vista openings, rock outcroppings, and diversity of vegetation. **GOAL**

#### **Transportation and Travel**

3.31-402. Management of the area requires trails that are designated for use by motorized off-highway vehicles. Trails will be maintained and occasionally built to provide all levels of difficulty for off-highway use. Trails should not be built if they would encourage resource damage. **GOAL**

3.31-403. Motorized trails should be developed to provide all levels of difficulty using existing roads and trails where possible. Transportation systems should be dispersed rather than concentrated. **OBJECTIVE**

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## **Management Area Standards and Guidelines**

### **Biological Elements -- Flora**

#### **Forested Communities**

3.31-2101. Vegetative management practices are available, usually to meet specific recreation and wildlife objectives, which generally maintain a mature forest appearance. Timber harvest may also be used to prevent or respond to epidemic insect conditions which could threaten resource objectives within or adjacent to the management area. **GUIDELINE**

3.31-2102. Tentatively suitable lands within these areas do not contribute to the allowable sale quantity and are not part of the suitable timber land base. **STANDARD**

### **Biological Elements -- Fauna**

#### **Wildlife**

3.31-3201. Habitat improvement projects to increase the potential for viewing a variety of wildlife species should be encouraged. **GUIDELINE**

3.31-3202. **\*DELETED**



## Disturbance Processes

### Fire and Fuels

3.31-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to achieve resource management objectives. **GUIDELINE**

## Social Elements

### Recreation

3.31-5101. All resource management activities should be compatible with and minimize impacts to recreational resources and opportunities. **GUIDELINE**

3.31-5102. The recreation opportunity spectrum (ROS) class is semi-primitive motorized. **GUIDELINE**

3.31-5103. Concentrated use will be discouraged. **GUIDELINE**

### Scenery Management

3.31-5601. The adopted scenic integrity objectives (SIO) are:

High = 1,189 Acres

Moderate = 10,702 Acres

**GUIDELINE**

## Transportation and Travel

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses,)

3.31-9101. Forest development roads will generally not exist. **GUIDELINE**

◊ 3.31-9102. Off-road motorized travel is allowed on designated trails only.

**GUIDELINE**

3.31-9103. Over-the-snow motorized travel is allowed. **GUIDELINE**

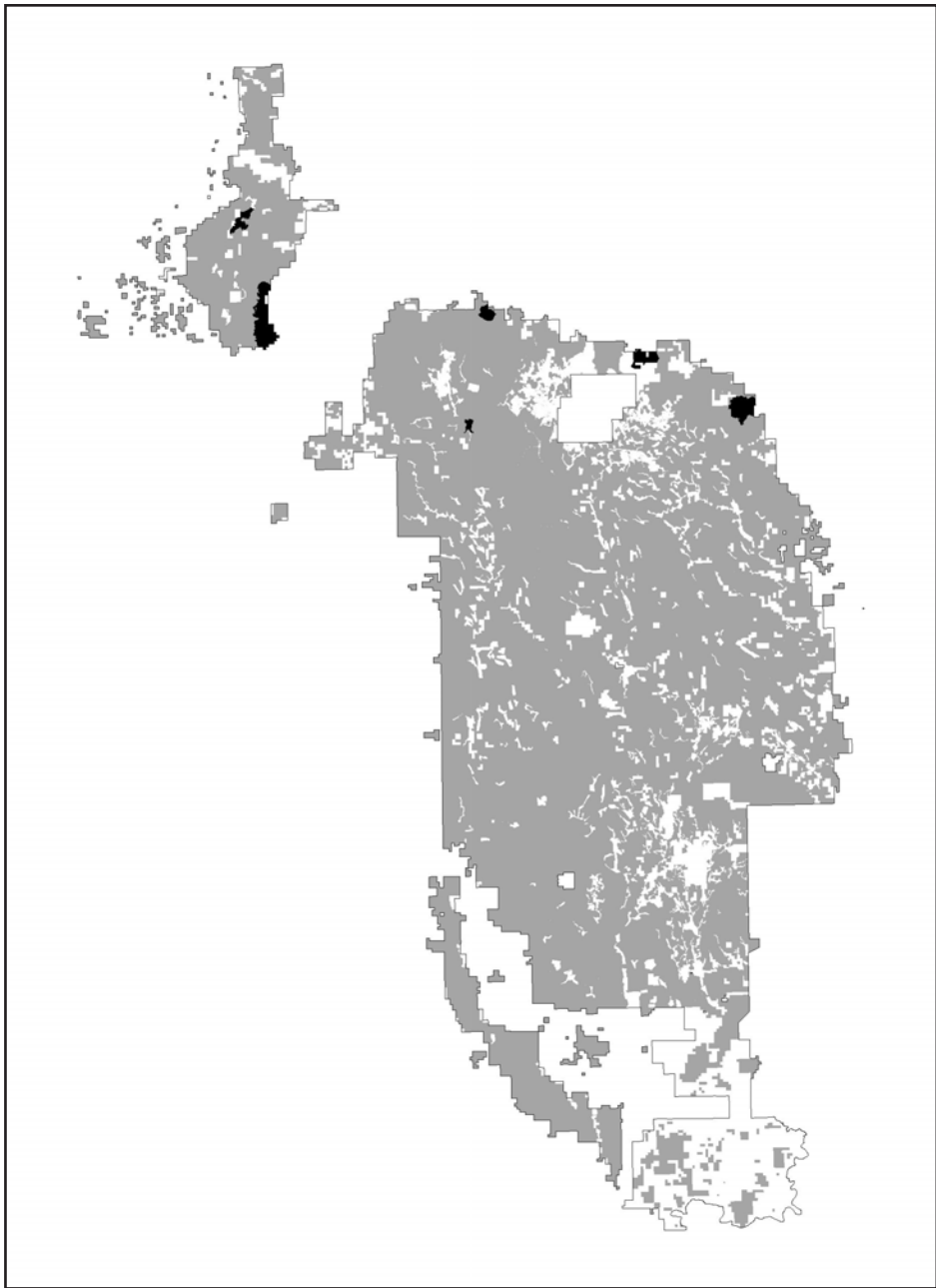


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## Management Area 3.32 Backcountry Non-Motorized Recreation Emphasis

**Theme:** These areas are managed to provide recreation opportunities in a semi-primitive setting. Summer use is non-motorized. Over-the-snow vehicles could be allowed during the snow season.





<p><b>Management Area 3.32</b> 11,563 Acres Less than 1 percent of Forest</p>	<p><b>Backcountry Areas</b> Cook Lake Area Sundance Burn Crow Peak Little Spearfish Creek Crook Mountain Beaver Gulch</p>
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**Setting:** These areas are usually 2,500 acres or larger. They are usually unroaded, but may display some evidence of past roading. There are few signs of recent human disturbance.

### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Case by case
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Minimal
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** This management area provides a backcountry setting with a high likelihood of solitude; at times, however, large groups of people may be present. A variety of uncrowded, non-motorized recreational opportunities are provided. Improvements to this management area include trailheads, trails, signs, bridges, fences and shelters.

Trails provide challenging hiking, horseback riding, oversnow motorized travel, and mountain biking opportunities.

Old road beds may be evident, though rehabilitation efforts are probably underway to change their appearance. Old road beds may be used as part of a trail system. Roads currently maintained at level 3, 4, and 5 will be downgraded to level 2 for administrative use.

Vegetation may be altered through a variety of management activities including the use of prescribed fire from both management and natural ignitions in order to enhance recreational opportunities, to provide for wildlife habitat or to provide vistas from which people can view the natural landscape.

These areas may offer hunting opportunities away from motorized vehicles.



## **Management Area Goals and Objectives**

### **Social Elements**

#### **Scenery Management**

3.32-401. Emphasize visually appealing landscapes such as vista openings, rock outcroppings, and diversity of vegetation. **OBJECTIVE**

## **Management Area Standards and Guidelines**

### **Biological Elements -- Flora**

#### **Forested Communities**

3.32-2101. Management activities should replicate biological processes found in the area and strive to replicate natural vegetative patterns and patch size. **GUIDELINE**

3.32-2102. Vegetative management practices are available, usually to meet specific recreation and wildlife objectives, which generally maintain a mature forest appearance. Timber harvest may also be used to prevent or respond to epidemic insect conditions which could threaten resource objectives within or adjacent to the management area. **GUIDELINE**

3.32-2103. Tentatively suitable lands within these areas do not contribute to the allowable sale quantity and are not part of the suitable timber land base. **STANDARD**

### **Biological Elements -- Fauna**

#### **Wildlife**

3.32-3201. Habitat improvement projects to increase the potential for viewing a variety of wildlife species should be encouraged. **GUIDELINE**

3.32-3202. \*DELETED

### **Disturbance Processes**

#### **Fire and Fuels**

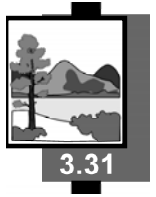
3.32-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to achieve resource management objectives. **GUIDELINE**

### **Social Elements**

#### **Recreation**

3.32-5101. All resource management activities should be compatible with and minimize impacts to recreational resources and opportunities. **GUIDELINE**

3.32-5102. Concentrated use will be discouraged. **GUIDELINE**



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3.32-5103. The recreation opportunity spectrum (ROS) class is semi-primitive non-motorized. The over-the-snow ROS class is semi-primitive motorized.

**GUIDELINE**

### **Scenery Management**

3.32-5601. The adopted scenic integrity objectives is high. **GUIDELINE**

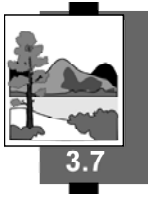
### **Travel and Transportation**

3.32-9101. Motorized road and off-road vehicle travel is prohibited. There may be exceptions for main forest development roads and administrative use. **GUIDELINE**

3.32-9102. Non-motorized trails should be developed providing experiences at all levels of difficulty. **GUIDELINE**

3.32-9103. \*Motorized trails will not be developed except for snow trails and over-the-snow dispersed use in areas where there are no conflicts with non-motorized use, management indicator species, and R2 sensitive and species of local concern. **STANDARD**

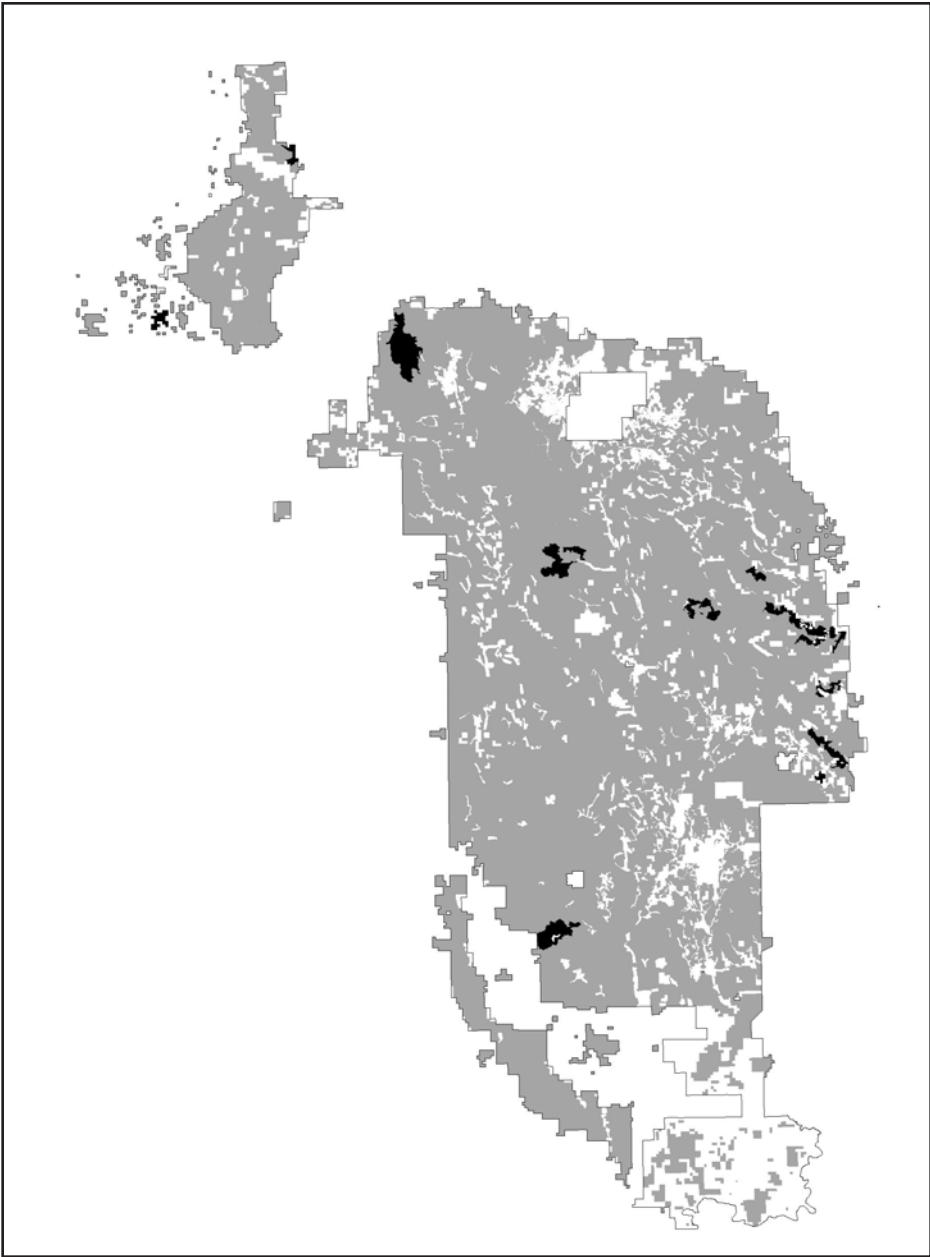
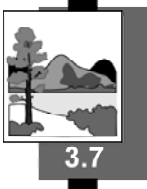
3.32-9104. Adequate access and trail systems should accommodate and disperse use without encouraging concentrated use. **GUIDELINE**



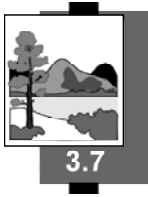
## Management Area 3.7 Late Successional Forest Landscape

**Theme:** These areas feature stands of trees that contain late successional forest structure across a landscape.





<p><b>Management Area 3.7</b>  23,887 Acres  1.9 Percent of Forest</p> <p><b>Areas</b>  Hay Creek  Miller Creek  Sand Creek</p>	<p>Black Fox  Bogus Jim  Upper Rapid Creek  Lower Rapid Creek  Lower Spring Creek  Battle Creek  Iron Creek  Lower Hell Canyon</p>
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**Setting:** This management area may be located throughout the forest. Although the entire area is not in a late-successional structure condition, a significant amount is.

### **Activities and Opportunities:**

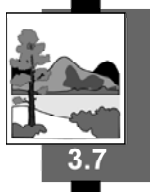
Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Restricted
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Minimal
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** Stands in these areas contain trees that are old and, in many cases, large. Trees in excess of 18 inches in diameter may be present. Stand sizes and densities will vary depending on site conditions and disturbances. Undergrowth appears in clumps, depending upon canopy closure. In some areas, undergrowth may be dense. Ponderosa pine and white spruce are the predominate tree species.

The entire area is managed to emphasize late-successional forest structure. Size of the areas being treated to evolve into a late-successional forest structure may be within the same scale as natural stand-replacement events. Appropriate silviculture treatments are used. Prescribed fire through both management and natural ignitions is utilized where appropriate to achieve late-successional forest elements. Snags and down, dead woody material are likely present.

Recurrent fires, insects and disease all play roles in late-successional landscapes. Late-successional stands may contain large old trees with open branches and irregular crowns in a savannah-like mosaic where low-intensity fires are frequent. Where low-intensity fires are less numerous, stands may have multiple canopy layers, and consist of various ages of trees. These stands may be well stocked with trees and have standing dead and down trees. Insect and disease damage may be evident.

Activities may include hiking, hunting, livestock grazing and mineral development. Generally, however, these areas show few signs of development. Some motorized traffic may be seen, though construction of new roads is limited.




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## Management Area Goals and Objectives

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### **Biological Elements -- Flora**

#### **Forested Communities**

3.7-201. Manage each contiguous unit within this management area as a late-successional landscape, so that late-successional structure is always present within some portion of each unit. **OBJECTIVE**

## Management Area Standards and Guidelines

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### **Biological Elements -- Flora**

#### **Forested Communities**

3.7-2101. Applicable management activities should replicate biological processes found in the areas and strive to replicate natural vegetative patterns and patch size.

**GUIDELINE**

3.7-2102. Tentatively suitable lands within these areas, including the “suitable-not scheduled” lands in the Sand Creek area, do not contribute to the allowable sale quantity and are not part of the suitable timber land base. **STANDARD**

3.7-2103. Timber harvest may be used if necessary to move stands toward late-successional conditions. **GUIDELINE**

### **Disturbance Processes**

#### **Fire and Fuels**

3.7-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to meet management objectives. **GUIDELINE**

### **Social Elements**

#### **Recreation**

3.7-5101. The recreation opportunity spectrum class is roaded natural, non-motorized. **GUIDELINE**

#### **Scenery Management**

3.7-5601. The adopted scenic integrity objectives are:

High = 3,729 Acres

Moderate = 13,606 Acres

Low = 7,802 Acres

**GUIDELINE**



## Administrative Elements

### Special Uses

3.7-8501. Large facilities, such as transmission corridors and electronic sites that permanently alter significant areas of vegetation, should not be permitted.

GUIDELINE

### Transportation and Travel

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

3.7-9101. Manage the road system to facilitate late-successional landscapes.

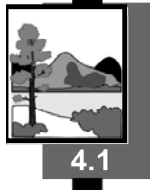
GUIDELINE

3.7-9102. Over-the-snow motorized travel is restricted to designated routes and areas. GUIDELINE

◇ 3.7-9103. Off-road motorized travel is allowed only where designated. GUIDELINE

3.7-9104. Motorized road travel is restricted to designated routes. GUIDELINE

3.7-9105. Do not construct any new System roads in the Sand Creek late-successional area. STANDARD

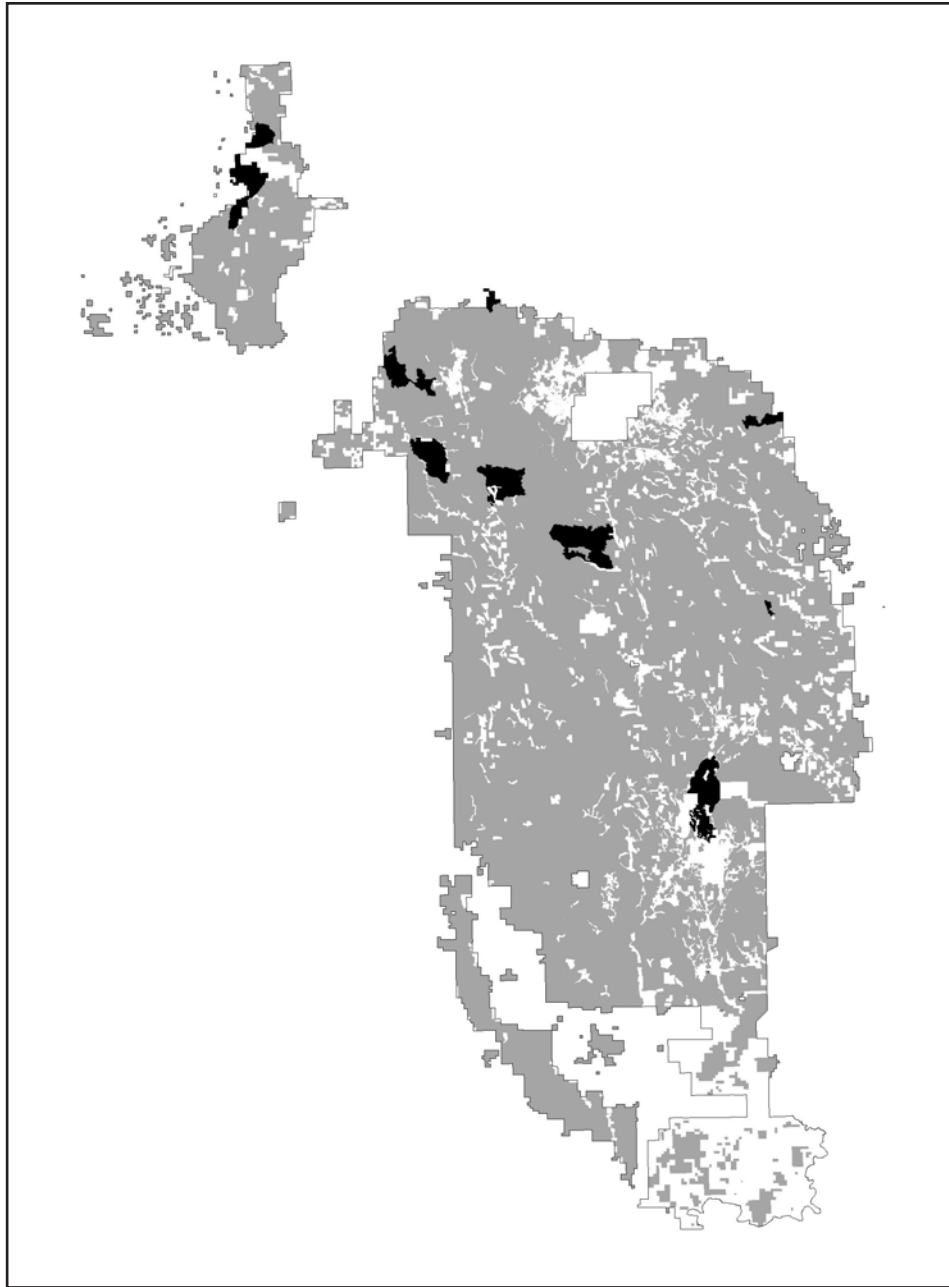
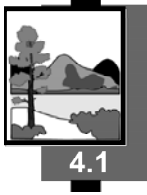


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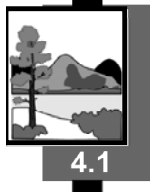
## Management Area 4.1 Limited Motorized Use and Forest Product Emphasis

**Theme:** These areas are managed for non-motorized recreation, while providing for timber production, forage production, visual quality and a diversity of wildlife. Roads provide intermittent commercial access, but are normally closed to other than administrative use.





<p><b>Management Area 4.1</b> 43,784 Acres 3.5 Percent of Forestt</p> <p><b>Areas</b> Crow Peak Surprise Gulch/Bull Hill</p>	<p>Smith Draw Eagle Cliff Swede Gulch Forbes Gulch Pactola Spillway Buckhorn/Bear Gulch Wood Canyon/Bald Mountain</p>
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**Setting:** This management area provides opportunities for non-motorized recreation, while allowing timber harvesting and livestock grazing. Roads used for timber harvesting and wood-fiber production are often used by hikers, mountain bikers, horseback riders and other non-motorized travelers and hunters. Some areas may have trails providing access.

Opportunities for solitude are less prevalent in these areas than in those areas managed for more primitive recreational experiences, like the Black Elk Wilderness. Because management activities, like timber harvests and livestock grazing, occur in this management area, the chance that users will encounter other people remains high. Encounters may include seeing Forest Service personnel preparing the area for management activities. Loggers and logging equipment, logging traffic and range permittees may also be seen.

### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Intermittent
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Yes
Livestock Grazing	Yes
Mineral Development	Yes

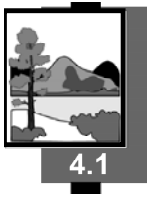
### Desired Future Condition:

An extensive road system is present, which is usually closed to motorized vehicles. Some main Forest Development Roads may be open most of the time for vegetation management activities. Most roads have native surfacing, which often includes grasses or other vegetation, unless they have been recently used by logging traffic. In such a case, the vegetation is likely worn down, and there may be disturbed areas due to maintaining drainage structures.

Ponderosa pine is likely to be the most conspicuous tree species. Areas of white spruce, aspen and other hardwoods also occur. Natural and created openings and meadows of various sizes and shapes interrupt the forested landscape in places.

The overall appearance of this management area is reminiscent of a managed forest, and few signs of damage to trees by insects or diseases should be visible.

Tree groups of different sizes and heights are likely observed. Some recently cut areas show tree stumps, slash and disturbed soil, but within a few years the forest floor is covered with grasses and forbs. A full range of slash treatment options including management ignited prescribed burning are used to maintain forest health and productivity of the area. Other recently cut areas still have a partial canopy of older trees. The boundaries of these cut areas are designed to follow natural landscape patterns.



Less recently cut areas have tree saplings, poles, or young trees 35 to 45 feet in height. Here the forest floor shows only minimal signs of disturbance. Occasionally, small patches of old trees of various heights can be found. Scattered dead trees are visible in openings and in older tree stands.

Non-motorized recreation, like hiking, mountain biking, horseback riding, hunting, cross-country skiing and wildlife viewing, is provided. Although non-motorized opportunities are emphasized, snowmobiles operating on snow may be authorized. Livestock may be encountered.

## Management Area Goals and Objectives

### **Biological Elements -- Flora**

#### **Forest Communities**

4.1-201. Emphasize wood-fiber production, wildlife habitat, and visual quality.

**GOAL**

4.1-202. Manage forest cover types to provide variety in stand sizes, shape, crown closure, age structure and interspersion. **GOAL**

4.1-203. \*NEW. Manage for the following percentages of structural stages in ponderosa pine across the management area in a variety of sizes and shapes.

**OBJECTIVE**

SS1	5%	SS4A	25%*
SS2	5%	SS4B	25%*
SS3A	10%	SS4C	5%*
SS3B	15%	SS5	5%**
SS3C	5%		

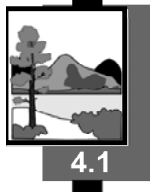
\*10% of the structural stage 4 ponderosa pine acreage in the management area will have an average tree size of "very large". Seek opportunities to increase understory shrubs in open-canopy structural stages.

\*\*Active management is allowed, and may be necessary, to provide desired late-successional characteristics.

### **Social Elements**

#### **Recreation**

4.1-401. Emphasize non-motorized recreational opportunities. **GOAL**




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## **Management Area Standards and Guidelines**

### **Biological Elements -- Flora**

#### **Forest Communities**

4.1-2101. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

#### **Rangeland**

4.1-2501. Prepare livestock management strategies in the allotment management plan that will be compatible with recreation objectives. **GUIDELINE**

4.1-2502. Locate or design structural improvements to meet Scenery Integrity Objectives. **GUIDELINE**

### **Biological Elements -- Fauna**

#### **Wildlife**

4.1-3201. \*DELETED

### **Disturbance Processes**

#### **Fire and Fuels**

4.1-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to meet management objectives. **GUIDELINE**

### **Social Elements**

#### **Recreation**

4.1-5101. The recreation opportunity spectrum class is roaded natural non-motorized. **GUIDELINE**

#### **Scenery Management**

4.1-5601. The adopted scenic integrity objectives are:

High = 6,362 Acres

Moderate = 23,742 Acres

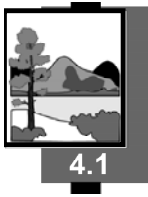
Low = 13,539 Acres

**GUIDELINE**

### **Transportation and Travel**

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

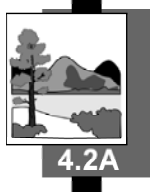
4.1-9101. Off-road motorized travel is prohibited. **STANDARD**



## Management Area 4.1

4.1-9102. Motorized road travel is limited to designated routes. Designated routes will vary over time based on the need to do vegetative management. Generally the road system will be closed to motorized travel. **GUIDELINE**

4.1-9103. Over-the-snow motorized travel is allowed when compatible with recreation and wildlife management objectives. **GUIDELINE**



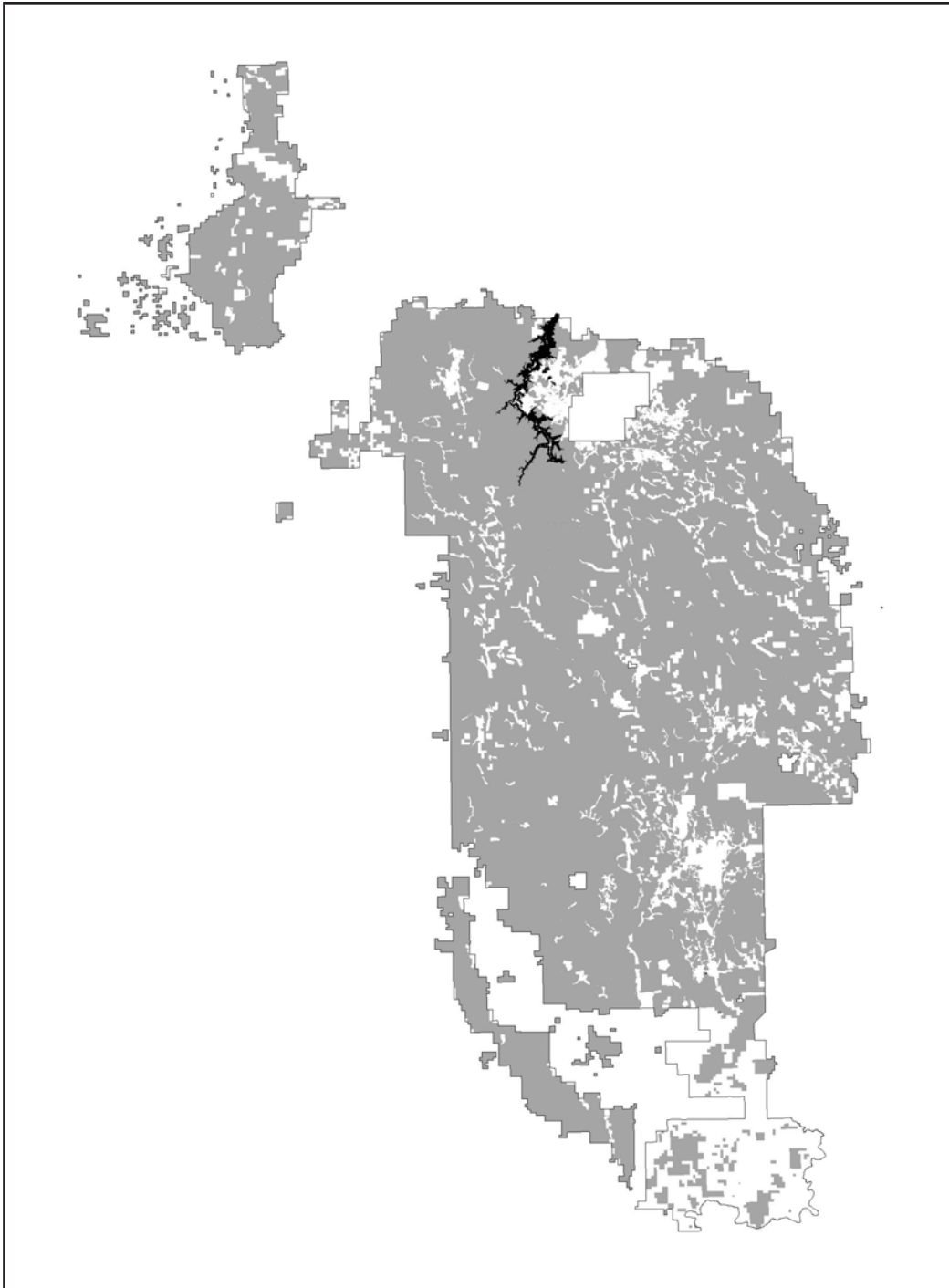
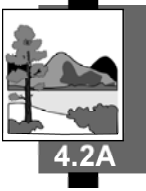
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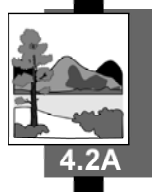
## Management Area 4.2A Spearfish Canyon

**Theme:** This area is managed for recreational opportunities in roaded settings that appear natural.





**Management Area 4.2A**  
9,769 Acres  
Less than 1 percent of Forest



**Setting:** Spearfish Canyon Scenic Byway is a 20-mile drive popular with the traveling public. It provides spectacular scenery, historical mining remnants, and an all-season paved highway. This Byway, approved by the Chief of the Forest Service in 1989, allows public access to numerous outdoor recreational activities. This section of U.S. Highway 14A, from the city of Spearfish to Cheyenne Crossing, receives very high recreational use throughout the year, but especially during the summer and fall.

The scenery along Spearfish Canyon is unique and often spectacular. The narrow canyon walls rise sharply from the stream and highway carved from the bottom of the canyon. A forest of white spruce, ponderosa pine, aspen, birch and oak covers most of the hillsides and parts of the canyon walls. Above these slopes, the skyline is topped with an extensive ridge of vertical limestone cliffs and rimrock.

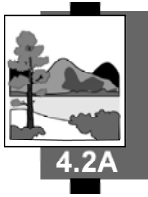
Riparian vegetation grows in abundance near Spearfish Creek. The creek often runs fast, so rapids and waterfalls may be seen within or near the Byway. This area has several plant and animal species of concern, including several rare snail species. Species from the Region 2 sensitive species list have been found within this area.

Spearfish Canyon is historically important to the northern Black Hills because it has provided mineral ore to the local mines, railway passenger transportation, and hydroelectric power and drinking water to nearby communities. Remnants of some of these mines and mining communities are still present and can be viewed from the highway.

## Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Minimal
Livestock Grazing	No
Mineral Development	Valid and Existing Rights Only

**Desired Future Condition:** Landscapes adjacent to the road corridors appear natural. Existing facilities, such as powerlines and roads, may be obvious to the casual observer. Management activities are likely to be less evident, be of short duration and be more natural in appearance than in many other areas of the forest.



## Management Area 4.2A

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While ponderosa pine is usually the most conspicuous tree species, visitors may see large areas of white spruce, aspen, birch, bur oak and other hardwoods. Overall, the forest vegetation is diverse. Interpretation and signing of scenic and historic attributes are provided along the Byway, and describe the Spearfish Canyon environment. Many pull-over areas are provided along the shoulder of the Byway. Day-use facilities, such as picnic grounds, are provided along the Byway.

Hiking trails curl into the woods and above the creek. Opportunities for scenic photography and bird watching exist. Other wildlife representative of the Black Hills may be seen in Spearfish Canyon. Projects to enhance wildlife habitat may be conducted in and along the creek or in forested portions of the byway. Areas of botanical interest will be conserved or enhanced. Areas of botanical interest within the canyon may be studied to try to identify what factors have led to the area's characteristic habitat.

## Management Area Goals and Objectives

### Social Elements

#### Scenery Management

4.2A-401. Emphasize visually appealing landscapes such as vista openings, rock outcroppings, and diversity of vegetation. **GOAL**

## Management Area Standards and Guidelines

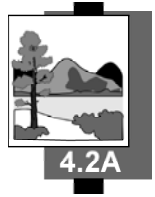
### Physical Elements

#### Minerals

4.2A-1501. Issue no mineral material permits for commercial development of common variety minerals. **STANDARD**

4.2A-1502. For withdrawal from mineral entry or surface occupancy, the Forest will use the rim-to-rim description as listed in Senate Bill No. 111 of the seventieth session of the South Dakota Legislature. **STANDARD**

4.2A-1503. All applications for lease will have the "no surface occupancy" stipulation for this management area. **STANDARD**



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## Biological Elements -- Flora

### Forest Communities

4.2A-2101. Protect unique biological features. **STANDARD**

4.2A-2102. Tentatively suitable lands within this area do not contribute to the allowable sale quantity and are not part of the suitable land base. **STANDARD**

### Rangeland

4.2A-2501. The management area is designated unsuitable to grazing and is closed to this use. **STANDARD**

4.2A-2502. Livestock may occasionally be used as a tool to achieve management objectives, such as noxious weed control, hazard reduction of fine fuels, pre-planting treatment and maintenance of grass/shrub health, etc. **GUIDELINE**

## Biological Elements -- Fauna

### Wildlife

4.2A-3201. Encourage habitat improvement projects that increase the potential for viewing and interpreting a variety of wildlife species without attracting them to roadsides. **GUIDELINE**

## Disturbance Processes

### Fire and Fuels

4.2A-4101. \*Manage fire and fuels through various methods to protect the biological and scenic values, but in the wildland-urban interface the priority will be fuel reduction. **STANDARD**

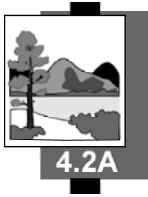
## Social Elements

### Recreation

4.2A-5101. The recreation opportunity spectrum class is roaded natural. **GUIDELINE**

4.2A-5102. Allow recreation use with emphasis on interpretation and education when it does not threaten the biological values, as well as the scenic values, for which the Scenic Byway was designated. **STANDARD**

4.2A-5103. Protect the area from actual or potential damage due to public use. Utilize closures under 36 CFR Subpart B when necessary. **STANDARD**



### **Scenery Management**

4.2A-5601. The adopted scenic integrity objectives (SIO) are:

High = 5,836 Acres

Moderate = 3,461 Acres

Low = 1,406 Acres

#### **GUIDELINE**

### **Administrative Elements**

#### **Facilities**

4.2A-8401. Facilities should be designed, located and managed in compliance with the SIOs of the area and enhance the experience and enjoyment of the users.

#### **GUIDELINE**

### **Transportation and Travel**

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

4.2A-9101. In areas where there are special features, design roads and trails to blend with the landscape and provide opportunities for viewing enjoyment.

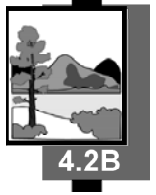
#### **STANDARD**

4.2A-9102. Restrict motorized travel, including over-snow, to designated routes.

#### **GUIDELINE**

4.2A-9103. Prohibit off-road motorized travel. **STANDARD**

the vicinity of Keystone, some evidence of mining can be seen from the corridor for Norbeck.



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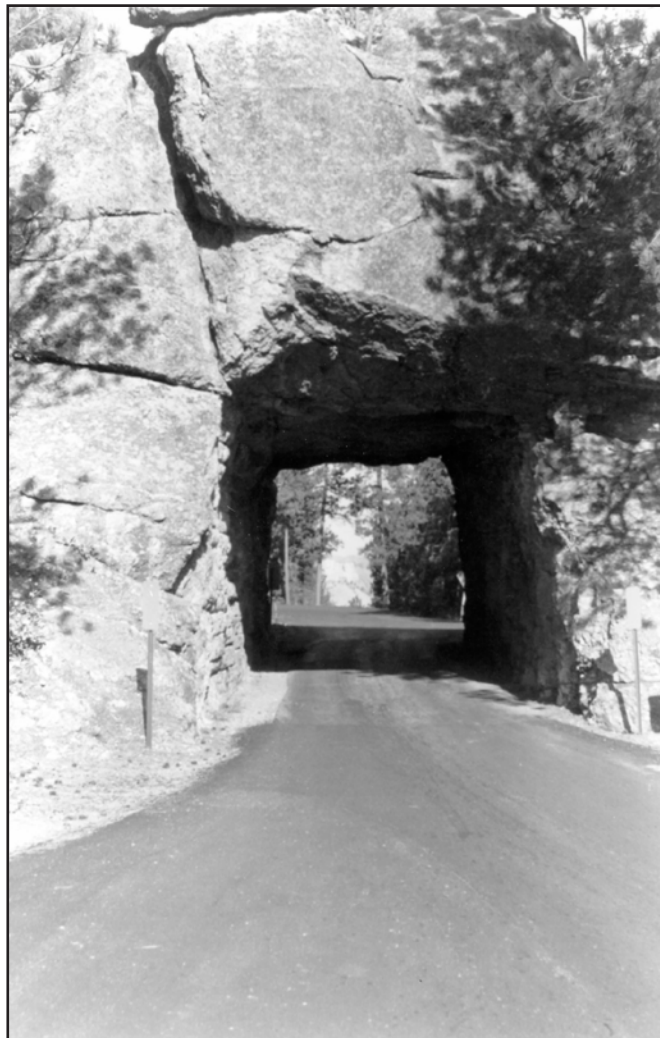
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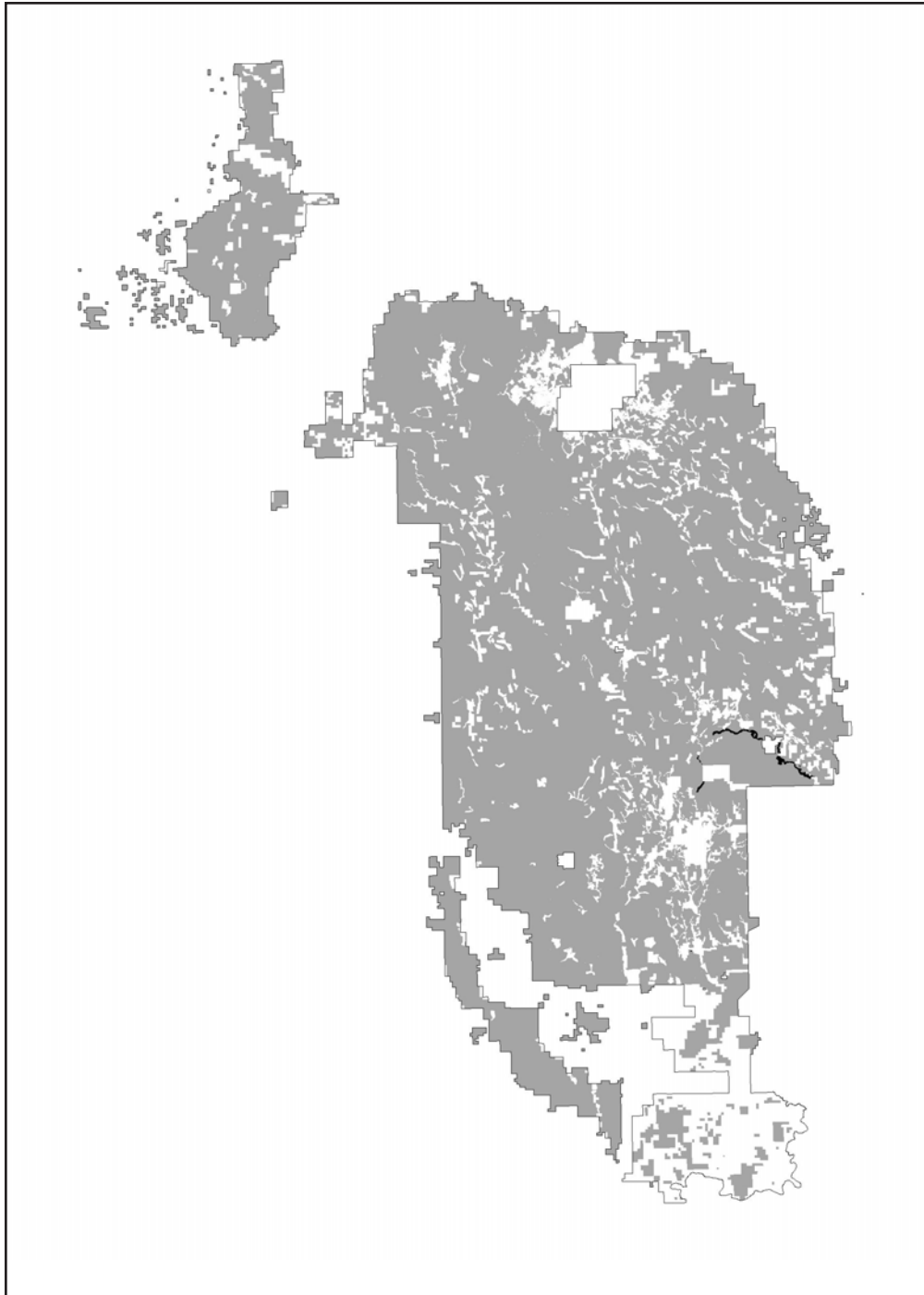
## Management Area 4.2B

### Peter Norbeck Scenic Byway

(Section Within the Norbeck Wildlife Preserve)

**Theme:** This area is managed to emphasize visually appealing landscapes in roaded settings, while meeting overall wildlife objectives for the Norbeck Wildlife Preserve.





**Management Area 4.2B**  
1,694 Acres  
Less than 1 percent of Forest  
6.5 Percent of Norbeck Wildlife Preserve



**Setting:** The Peter Norbeck Scenic Byway is a 70-mile drive, through the heart of the Black Hills granitic core. The Byway includes parts of U.S. Highway 16A (the Iron Mountain Road), S.D. Highway 87 (the Needles Highway), S.D. Highway 89 (the Sylvan Lake Road) and S.D. Highway 244 (the Mount Rushmore Highway). The Byway introduces travelers to magnificent scenery, including vistas of Harney Peak, and to rock tunnels and pigtail bridges. The Scenic Byway lies adjacent, or provides access to, Mount Rushmore National Memorial and Custer State Park. More than 3 million visitors a year travel the Scenic Byway.

Much of the Peter Norbeck Scenic Byway winds through the Norbeck Wildlife Preserve, which was established by Congress in 1920 for the “protection of game animals and birds and to be recognized as a breeding place therefor.” It is this portion of the Byway to which Management Area 4.2B applies. The remainder of the Byway is managed in accordance with Forest-wide direction for travel corridors.

### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Limited
Livestock Grazing	Yes
Mineral Development	Restricted

**Desired Future Condition:** Ponderosa pine is the most conspicuous tree species, but travelers also see stands of white spruce, aspen, birch, bur oak and other hardwoods. Natural openings, meadows of various sizes and shapes, and rock outcrops often interrupt the forested areas, adding visual diversity. While a variety of tree sizes and ages occurs, “yellow-bark” pine in park-like stands are striking.

Landscapes adjacent to the road corridors appear natural. Management activities are likely to be less visible and be of shorter duration than in other areas of the forest. Openings are cut in tree stands to open up vistas and panoramic settings. In the middle and background of the area, seen from the road corridor and from recreation sites along it, evidence of management activities (such as tree cutting and prescribed burning for wildlife habitat) may be more obvious.



Interpretive signing describes historical and natural conditions of the area. Recreational facilities, including pull-overs, are provided for safety reasons, and so that travelers can get out of their cars, take photographs and enjoy the sights and sounds of the forest. There are a limited number of trailheads, consistent with wildlife protection in the interior of the Norbeck Wildlife Preserve. Signs of people using the area are quite obvious along paved highways and within developed recreation sites. The highways and recreation sites may be busy, especially during the summer months. Motorized travel is limited to highways and developed recreation sites. Roads leading to the interior of Norbeck Wildlife Preserve may be closed and gated.

The traveler sees tracts of private land with varying degrees of development. In the vicinity of Keystone, some evidence of mining can be seen from the corridor. Livestock grazing is rarely seen. Logging traffic may be encountered between Labor Day and Memorial Day.

## **Management Area Goals and Objectives**

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### **Biological Elements -- Flora**

#### **Forest Communities**

4.2B-201. Manage tree stands to enhance visual quality. Manage for large, yellow-bark ponderosa pine in open, park-like conditions, consistent with wildlife needs for cover and for a mix of species and structural stages. Emphasize vista openings, rock outcroppings and hardwood stands. **GOAL**

4.2B-202. Reduce pine density to a 30-basal area or less in front of massive rock outcroppings. **OBJECTIVE**

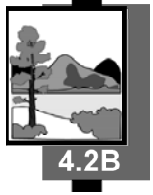
4.2B-203. Create one- to five-acre openings to provide wildlife food sources, to increase scenic panoramas, and to improve the opportunities to view wildlife, unless wildlife cover needs dictate otherwise. **OBJECTIVE**

### **Administrative Elements**

#### **Real Estate**

4.2B-501. If buyer and seller are willing, use any available legal authority to acquire isolated tracts of private land which contain perennial streams, contribute to wildlife protection, or contribute to protection of scenery. (See Appendix E.) **OBJECTIVE**

4.2B-502. Consolidate ownership of lands generally east of the Iron Mountain Highway under any available legal authority. (See Appendix E.) **OBJECTIVE**




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## **Management Area Standards and Guidelines**

If there is conflict between management of the Peter Norbeck Scenic Byway and the direction for Norbeck Wildlife Preserve (Management Area 5.4A and Appendix E), the latter will take precedence, based on the Congressional mandate for Norbeck.

### **Physical Elements**

#### **Water**

4.2B-1201. At a minimum, the following will be identified as protected stream courses:

Pine Creek	Grizzly Bear Creek
Iron Creek	Spokane Creek
Sunday Gulch	Toll Gate Creek
Battle Creek	Lost Cabin Creek
Palmer Creek	Lower portion of Willow Creek

**STANDARD**

#### **Minerals**

4.2B-1501. Issue no mineral material permits for commercial development of common variety minerals. **STANDARD**

4.2B-1502. Prohibit mining activities as specified by the Regional Forester's July 28, 1989, prohibition found in the Record of Decision for the Norbeck Wildlife Preserve EIS, and in accordance with PL-747. (See Appendix E.) **STANDARD**

4.2B-1503. All applications for lease will have the "no surface occupancy" stipulation for this management area. **STANDARD**

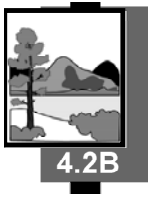
### **Biological Elements -- Flora**

#### **Forest Communities**

4.2B-2101. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

#### **Rangeland**

4.2B-2501. Livestock management strategies in allotment management plans should meet the recreational objectives for the management area. **GUIDELINE**



## Disturbance Processes

### Fire and Fuels

4.2B-4101. \*Manage fire and fuels through various methods to improve wildlife habitat and to protect the biological and scenic values of the area, but in the wildland-urban interface the priority will be fuel reduction. **STANDARD**

## Social Elements

### Recreation

4.2B-5101. The recreation opportunity spectrum (ROS) class is roaded natural.

#### **GUIDELINE**

4.2B-5102. New recreation facilities or improvements should provide for public health and safety, resource protection, and/or interpretation. Discourage facilities which would create or encourage additional recreation use of the interior of Norbeck Wildlife Preserve. (See Appendix E.) **GUIDELINE**

4.2B-5103. Prohibit camping within 300 feet of highways and forest development roads, except in developed campgrounds. **STANDARD**

### Scenery Management

4.2B-5601. The adopted scenic integrity objectives (SIO) is high. **GUIDELINE**

## Administrative Elements

### Real Estate

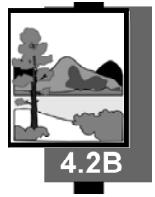
4.2B-8101. National Forest System lands may be conveyed out of federal ownership under any legal authority, only if such conveyance meets specific criteria. (See Appendix E.) **GUIDELINE**

### Facilities

4.2B-8401. Efforts to reduce or eliminate the impacts to scenic quality should be scheduled. Facilities should be designed, located and managed in compliance with the SIO of the area and should enhance the experience and enjoyment of the users. **GUIDELINE**

### Special Uses

4.2B-8501. Authorize land occupancies only if they are compatible with scenic byway management and wildlife needs. **STANDARD**



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4.2B-8502. Issue term special-use permits for existing recreational residences. No new recreational residences or additions to existing structures are permitted. (See Appendix E.) **STANDARD**

4.2B-8503. Existing outfitter-guide permits for horseback riding may continue as long as terms of the permits are met and resources can be protected. Do not expand existing permits or allow new outfitter-guide permits for any activities (See Appendix E.) **STANDARD**

## **Transportation and Travel**

4.2B-9101. Retain existing highways. **GUIDELINE**

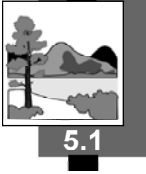
4.2B-9102. Prohibit log hauling from National Forest System lands between Memorial Day and Labor Day. **GUIDELINE**

4.2B-9103. Permit only road signs necessary to provide safety, traffic management, and interpretation. **GUIDELINE**

4.2B-9104. Restrict motorized recreational travel to designated routes and areas. **STANDARD**

4.2B-9105. Over-the-snow motorized travel is restricted to designated routes or areas. **GUIDELINE**

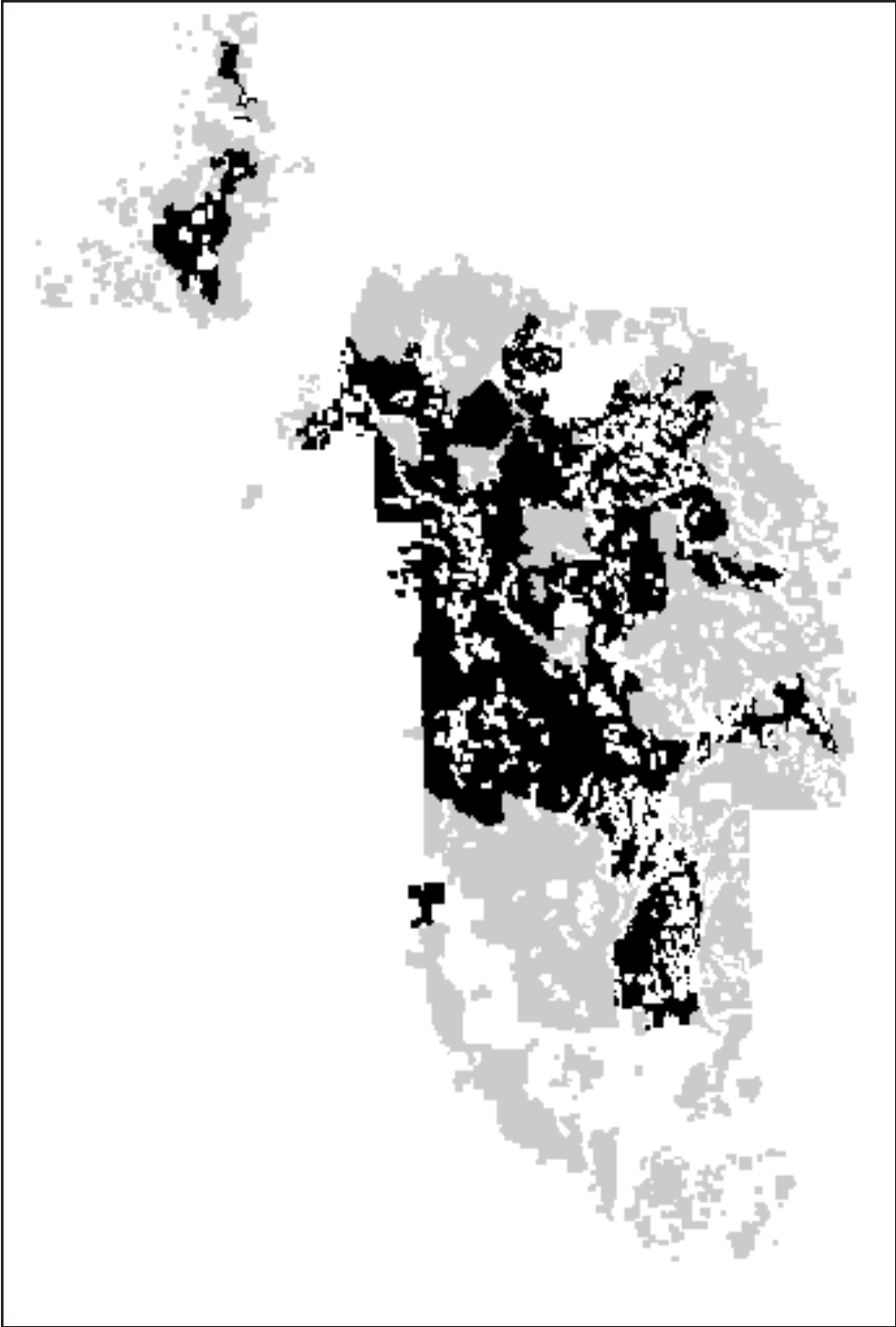
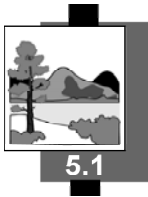
4.2B-9106. Limit motorized administrative travel to emergencies and work which cannot be accomplished by other means. (See Appendix E.) **GUIDELINE**



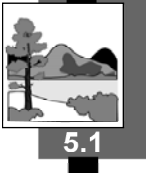
## Management Area 5.1 Resource Production Emphasis

**Theme:** These areas are managed for wood products, water yield, and forage production, while providing other commercial products, visual quality, diversity of wildlife and a variety of other goods and services. Numerous open roads provide commercial access and roaded recreation opportunities, while closed roads provide non-motorized recreation opportunities.





**Management Area 5.1**  
563,898 Acres  
45.2 Percent of Forest



**Setting:** These sites may be located throughout the forest. The predominant tree species is ponderosa pine, although white spruce, aspen and other hardwood species occur, as do meadows and natural openings with grass, shrub and forb species. Forest stands vary in density and height, with some sites more accessible and less rugged than other sites.

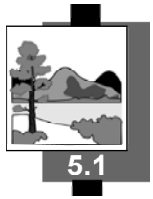
**Activities and Opportunities:**

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	Yes
Timber Harvesting	Yes
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** The forest is largely a mosaic of tree groups of different ages and heights. Cut areas show tree stumps, slash and disturbed soil. The appearance of disturbed soil usually disappears in a short period of time due to grass, shrub and tree regeneration. Fuel treatment emphasis is on maintaining forest health and the protection of management investments in the interest of sustained productivity of the area. Areas disturbed through management activities are quickly revegetated. Other recently cut areas still have a partial canopy of older trees. The boundaries of these cut areas appear to follow natural landscape patterns.

Ponderosa pine is the most frequently observed tree species. White spruce, aspen and other hardwood tree species also occur. Few areas show evidence of decadence or old trees. Trees of all ages are present. Evidence of insect and disease outbreaks is infrequent. There are some natural openings or meadows of various sizes and shapes, and these areas are enlarged as appropriate.

Older cut areas show tree saplings, poles or young trees up to 35 to 45 feet in height. The forest floor in these areas shows few signs of disturbance. A variety of forest structures is apparent with mature trees dominating the landscape. Scattered trees in older cut areas are likely found throughout this management area. Many silviculture treatments are designed to increase water yield, given proper climatic conditions. Management of riparian areas may lengthen the season of water flow. Insect and disease populations are at endemic population levels.



Activities such as hunting, hiking and biking occur along roads closed to vehicle traffic. Some roads and nearby areas are available for year-round motorized vehicle use. Some motorized vehicle use may be restricted for management area purposes.

Trees in this management area are managed to produce forest products while providing forage production, visual quality, wildlife habitat, recreational opportunities, as well as other goods and services. Logging traffic may be encountered throughout the year. Piles of slash may be seen burning on hillsides when conditions make such burning safe.

## Management Area Goals and Objectives

### Physical Elements

#### Water

5.1-101. Sustain or enhance water yield through timber management. **OBJECTIVE**

### Biological Elements -- Flora

#### Forest Communities

5.1-201. Manage tree stands to emphasize timber products, forage production, and water yield. **GOAL**

5.1-202. While meeting other objectives for this management area, provide variety in stand sizes, shape, crown closure, age structure and interspersion.

**OBJECTIVE**

5.1-203. Maintain or enhance hardwood shrub communities where biologically feasible, and within management objectives. **OBJECTIVE**

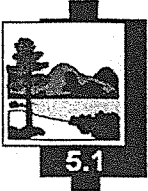
5.1-204. \*NEW. Manage for the following percentages of structural stages in ponderosa pine across the management area in a variety of sizes and shapes.

**OBJECTIVE**

SS1	5%	SS4A	25%*
SS2	5%	SS4B	25%*
SS3A	10%	SS4C	5%*
SS3B	15%	SS5	5%**
SS3C	5%		

\*10% of the structural stage 4 ponderosa pine acreage in the management area will have an average tree size of "very large". Seek opportunities to increase understory shrubs in open-canopy structural stages.

\*\*Active management is allowed, and may be necessary, to



provide desired late-successional characteristics.

## Management Area Standards and Guidelines

### Biological Elements -- Flora

#### Forest Communities

5.1-2101. Suitable lands are available for timber production and contribute to the allowable sale quantity. STANDARD

### Biological Elements -- Fauna

#### Wildlife

5.1-3201. \*DELETED

### Disturbance Processes

#### Fire and Fuels

5.1-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to meet management objectives. GUIDELINE

### Social Elements

#### Recreation

5.1-5101. The recreation opportunity spectrum is roaded natural. GUIDELINE

#### Scenery Management

5.1-5601. The adopted scenic integrity objectives are:

High = 57,127 Acres

Moderate = 248,914 Acres

Low = 255,641 Acres

GUIDELINE

### Transportation and Travel

◇ 5.1-9101. Off-road motorized travel is allowed where designated by a project decision. GUIDELINE

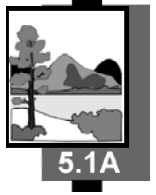
◇ 5.1-9102. Motorized road travel is allowed where designated by a project decision. GUIDELINE

5.1-9103. Over-the-snow motorized travel is allowed unless restricted by a project decision. GUIDELINE

◇ Amendment #10 - May 2010 ◇

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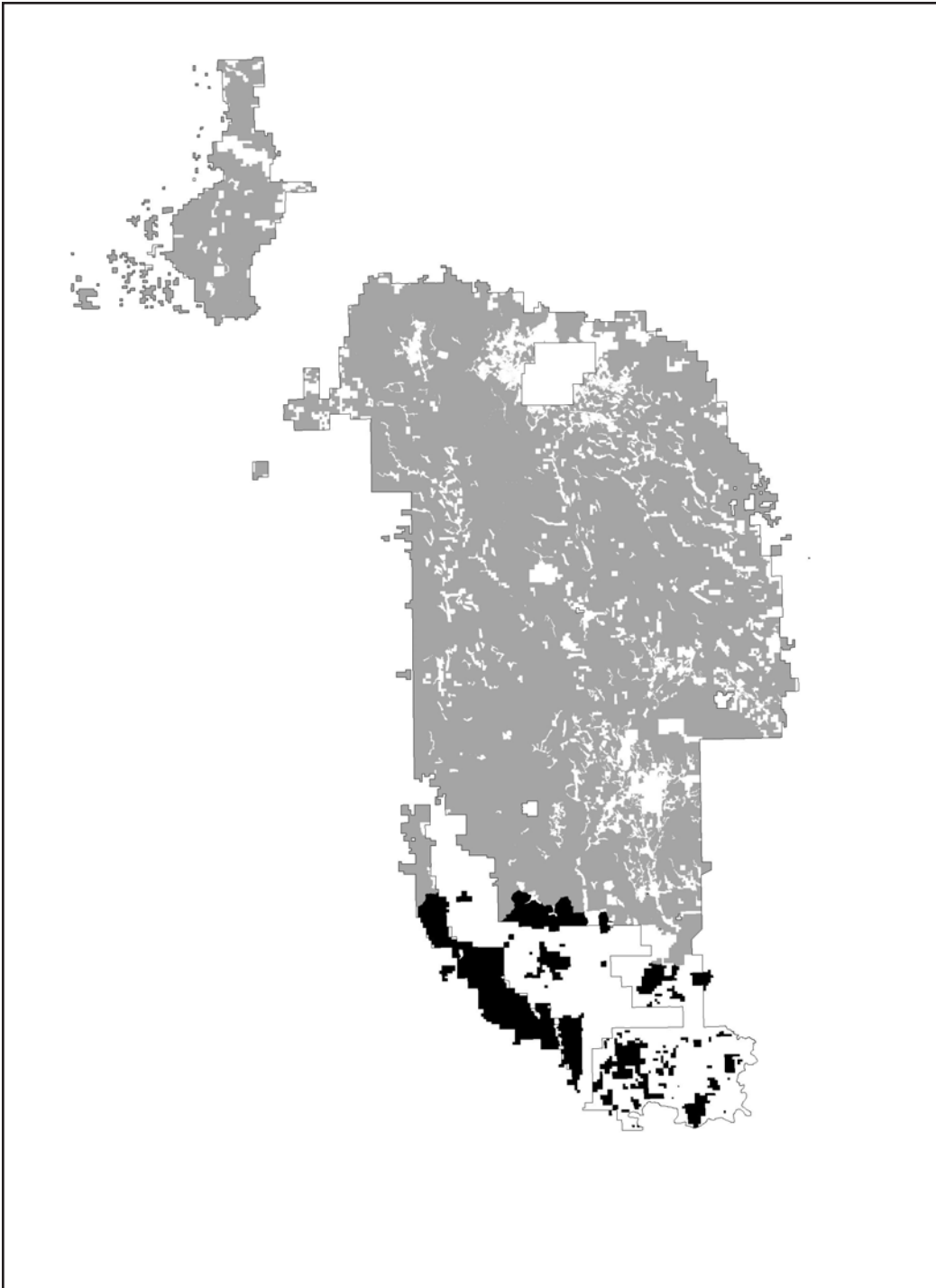
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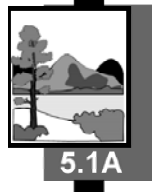
## Management Area 5.1A Southern Hills Forest and Grassland Areas

**Theme:** These areas are managed for sustainability of the physical, biological and visual values associated with areas of woody vegetation and open grassland. Habitat and vegetation are managed to achieve and maintain the desired conditions for wildlife, livestock and vegetation.





**Management Area 5.1A**  
89,706 Acres  
7.2 Percent of Forest



**Setting:** This management area is dominated by open grasslands and areas of woody vegetation located primarily in the southern part of the forest. Deep sandstone canyons run through the area and surface water is limited. Though many of these areas are forested, they usually do not produce commercially profitable wood fiber as a result of their poor site conditions. These areas do provide various resource values including wildlife habitat. Many of these areas produce substantial forage for livestock and wildlife.

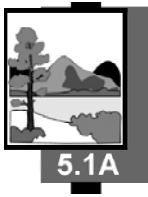
### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	Yes
Timber Harvesting	Minimal
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** These areas exhibit a mosaic of vegetation types. Ponderosa pine is usually the dominant tree species, although Rocky Mountain juniper intermingles throughout. Stand ages and size compositions are not uniform. Natural processes, like insect and disease infestations, blowdowns and wildfire, have sculpted openings of various sizes and shapes into the landscape. Snags and down woody material exist in varying quantities in most timber stands. Many of the trees in these stands display form characteristics undesirable from a harvestable timber standpoint. These forms include crook and sweep, excessive branching, forking and twisted grain. These forms may be particularly interesting to sight-seers and recreationists.

Wildlife habitat and forage production for both livestock and wildlife are emphasized. Livestock grazing may be a prominent feature. Vegetation is often managed through livestock grazing. Management ignited prescribed burning is a primary tool used to maintain desired conditions of habitat and vegetation. Vegetative diversity exists, including species associated with grasslands, sage brush, Rocky Mountain juniper, and ponderosa pine.

Motorized travel, hunting, hiking, timber harvests, mining and livestock grazing will be evident.



## Management Area Goals and Objectives

### **Biological Elements -- Flora**

#### **Forest Communities**

5.1A-201. Achieve diversity by maintaining or enhancing hardwood trees, shrub inclusions and other beneficial plant communities and openings. **OBJECTIVE**

5.1A-202. Vary tree densities (0- to 140-basal area) within stands to create small-scale diversity (i.e., to enhance understory shrubs or herbage), if compatible with other habitat objectives. **OBJECTIVE**

#### **Rangeland**

5.1A-203. Improve forage on range areas. **GOAL**

### **Biological Elements -- Fauna**

#### **Wildlife**

5.1A-204. Provide thermal cover on at least 20 percent of the forested area, where biologically feasible. **OBJECTIVE**

5.1A-205. \*NEW. Remove pine encroachment in grasslands and shrublands.

**OBJECTIVE**

## Management Area Standards and Guidelines

### **Physical Elements**

#### **Minerals**

5.1A-1501. Exploration and operations will be designed and conducted to minimize impacts to other resources. **STANDARD**

### **Biological Elements -- Flora**

#### **Forest Communities**

5.1A-2101. Timber harvest may be used to achieve management objectives.

**GUIDELINE**

5.1A-2102. Tentatively suitable lands within these areas do not contribute to the allowable sale quantity and are not part of the suitable timber land base. **STANDARD**

#### **Rangeland**

5.1A-2501. Feature livestock use of forage increases, that result from vegetative improvements, while also allowing for wildlife increases in forage use. **GUIDELINE**



## Biological Elements -- Fauna

### Wildlife

5.1A-3201. \*DELETED

## Disturbance Processes

### Fire and Fuels

5.1A-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to achieve resource management objectives. GUIDELINE

5.1A-4102. Emphasize the use of prescribed fire as a tool to enhance the vigor and palatability of grass and woody vegetation for the benefit of wildlife and domestic livestock. GUIDELINE

## Social Elements

### Recreation

5.1A-5101. The recreation opportunity spectrum class is roaded natural, unless otherwise specified. GUIDELINE

### Scenery Management

5.1A-5601. The adopted scenic integrity objectives are:

High = 1,585 Acres

Moderate = 16,726 Acres

Low = 71,354 Acres

GUIDELINE

## Transportation and Travel

◇ 5.1A-9101. Off-road motorized travel is allowed where designated by a project decision. GUIDELINE

◇ 5.1A-9102. Motorized road travel is allowed where designated by a project decision. GUIDELINE

5.1A-9103. Over-the-snow motorized travel is allowed unless restricted by a project decision. GUIDELINE

5.1A-9104. Do not construct any new System roads in the Pilger Mountain area shown on page C-27 of the FEIS Appendix C. STANDARD

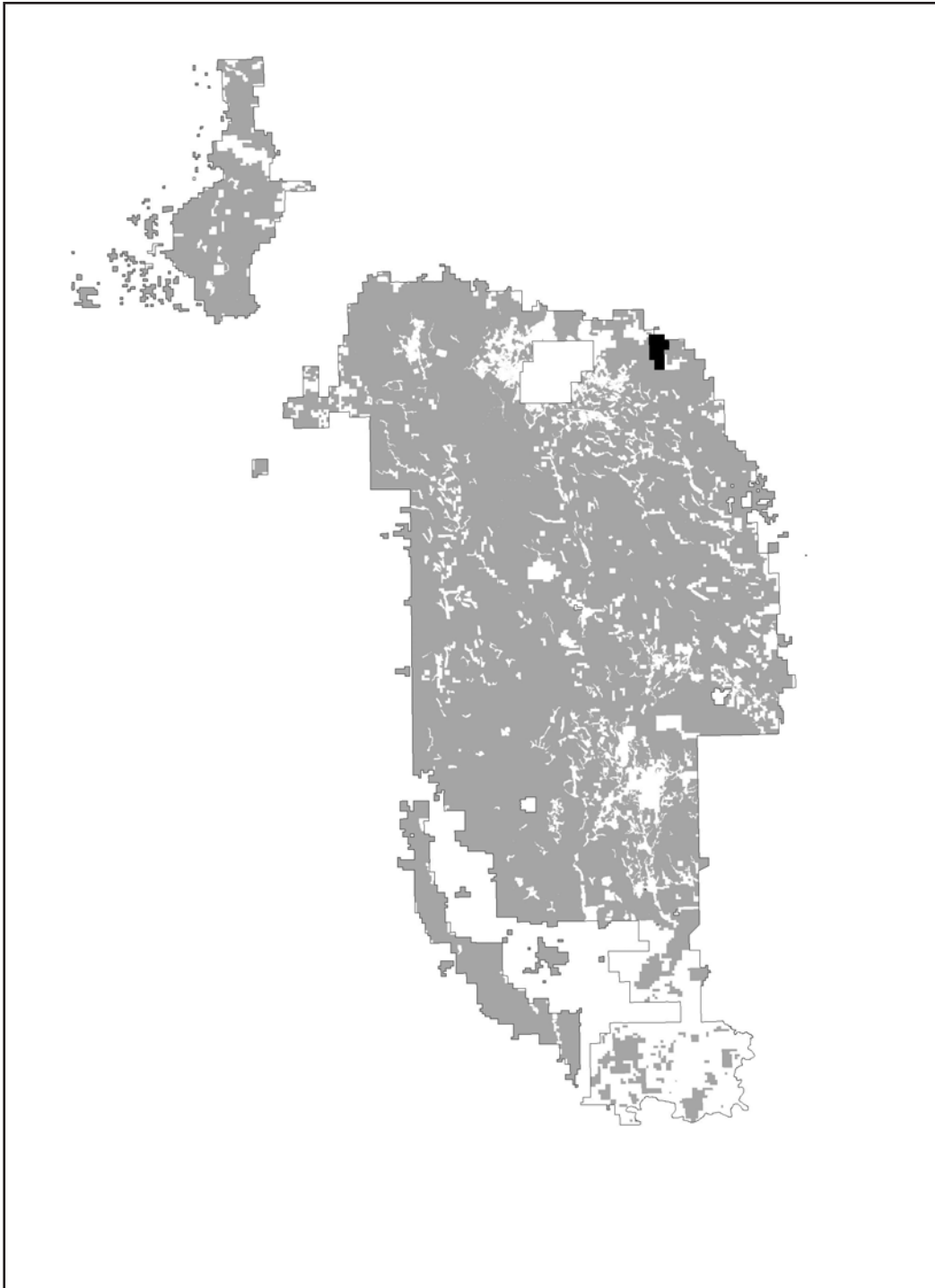
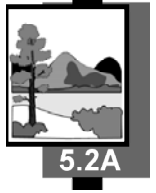
◇ Amendment #10 - May 2010 ◇



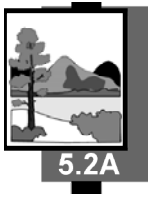
## Management Area 5.2A Fort Meade VA Hospital Watershed

**Theme:** This is an area managed to protect or improve the quality and quantity of water supplies to the Fort Meade Veterans Administration Hospital.





**Management Area 5.2A**  
3,308 Acres  
Less than 1 percent of Forest



**Setting:** This management area is located in the northeastern corner of the Northern Hills Ranger District in the northeastern Black Hills. The major drainage is Deadman Gulch. The management area contains Public Land Order Watershed 360 and provides water to the Fort Meade Veterans Administration Hospital near Sturgis, South Dakota. The higher elevations in this management area are relatively flat. The area gets steeper, however, as the elevation decreases. The drainages are highly dissected and steep. The Fort Meade VA Hospital Watershed generally has shallower and rockier soils than other parts of the forest.

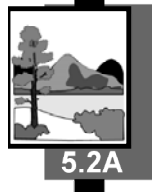
### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Yes
Livestock Grazing	Yes
Mineral Development	Restricted

**Desired Future Condition:** Roads open for public travel in the Fort Meade Watershed are Forest Development Roads 135 and 170 (as these two roads are paved, they will become Forest Highway 26), and portions of the Forest Development Road 171 system. Non-motorized activities, like hiking and wildlife viewing, are provided.

Ponderosa pine is the most conspicuous tree species, although small areas of white spruce, aspen and other hardwoods also occur. Some natural openings and meadows of varying sizes and shapes are interspersed throughout this management area. Tree groups of different ages and heights are present. Some recently cut areas show tree stumps, slash and disturbed soil, but these areas recover and the forest floor is soon growing with grasses and forbs. Slash is burned or lopped and scattered. A partial canopy of older trees is usually present in recent harvest sites. The boundaries of cut areas conform to natural landscape patterns.

Protection and improvement of the quality and quantity of municipal water supplies is emphasized. Loss of water quality is minimized while keeping vegetative losses to a minimum and by considering costs of suppression. Water quality is maintained and supplies of domestically used water are provided to the Veterans Administration Hospital Complex.



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The yield and timing of water flows are consistent with requirements for water quality. Water yield is maintained as is stream-channel stability. Human activities are managed so that water quality is not degraded and complies with the Clean Water Act and state water-quality regulations.

## **Management Area Goals and Objectives**

### **Physical Elements**

#### **Water**

5.2A-101. Vegetation will be managed to provide optimum water quantity while meeting state water quality standards. **GOAL**

## **Management Area Standards and Guidelines**

### **Physical Elements**

#### **Water**

5.2A-1201. Management disturbances posing potential water pollution will be immediately rehabilitated. Monitoring of rehabilitated areas will be inspected annually and maintained to protect water quality. **STANDARD**

#### **Minerals**

5.2A-1501. Areas will be withdrawn from mineral entry or provisions will be made for coordination with state public health officials to provide that water quality will not be degraded by mining activities. **STANDARD**

5.2A-1502. Protect surface resource conditions to maintain water quality of the municipal water supply. Issue no mineral material permits for commercial development of common variety minerals. **STANDARD**

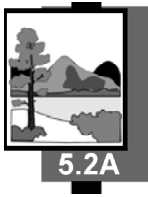
### **Biological Elements -- Flora**

#### **Forest Communities**

5.2A-2101. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

#### **Rangeland**

5.2A-2501. Manage livestock use to continue protection of water quality for domestic use. **GUIDELINE**



## Biological Elements -- Fauna

### Wildlife

5.2A-3201. \*DELETED

## Disturbance Processes

### Fire and Fuels

5.2A-4101. Manage fire and fuels through control practices and a full array of fuel treatment options which will provide the greatest measure of protection or improvement to the quality and quantity of municipal water supplies. **STANDARD**

## Social Elements

### Recreation

5.2A-5101. The recreation opportunity spectrum class is roaded natural on the designated travel routes and semi-primitive non-motorized in the remainder of the area. **GUIDELINE**

### Scenery Management

5.2A-5601. The adopted scenic integrity objective is high. **GUIDELINE**

## Administrative Elements

### Special Uses

5.2A-8501. Only issue special use permits that are compatible with public-land-order watershed objectives. **STANDARD**

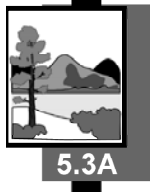
## Transportation and Travel

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

5.2A-9101. Off-road motorized travel is prohibited. **STANDARD**

5.2A-9102. Motorized road travel is restricted to designated routes. **STANDARD**

5.2A-9103. Over-the-snow motorized travel is restricted to designated routes and areas. **STANDARD**



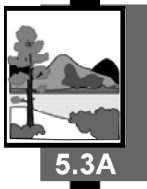
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## Management Area 5.3A Black Hills Experimental Forest

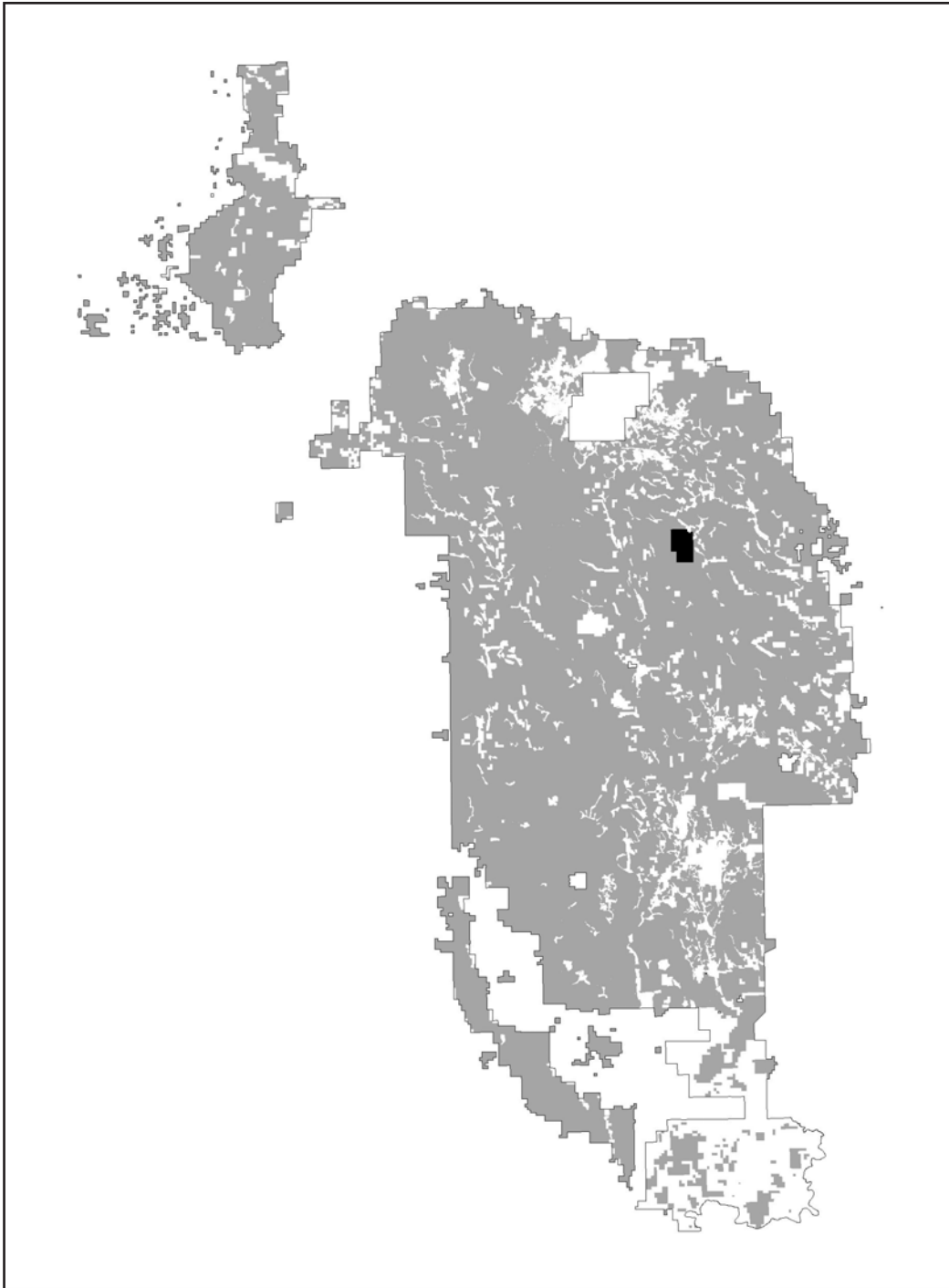
**Theme:** This area is managed for research conducted by scientists assigned to the Rocky Mountain Research Station.



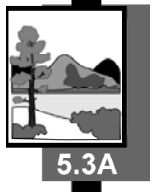


Management Area 5.3A

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**Management Area 5.3A**  
3,393 Acres  
0.3 Percent of Forest



**Setting:** The Black Hills Experimental Forest is located approximately 25 miles northwest of Rapid City and encompasses 3,402 acres of ponderosa pine woodland. It was designated as an outdoor laboratory in 1961.

## Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	Yes
Timber Harvesting	Experimental
Livestock Grazing	Yes
Mineral Development	Withdrawn

**Desired Future Condition:** Experiments in this management area are designed to determine how alternative forest management programs affect forest resources.

Vegetation appears managed in this area. Groups of trees exhibit different heights and ages, and the forest floor usually appears fairly undisturbed, with grasses and forbs covering the ground. In recently cut areas, tree stumps, slash and disturbed soils are evident. Fire suppression and fuel treatment activities are conducted with an emphasis on complementing rather than compromising ongoing research projects. Some natural or created openings of various shapes and sizes exist.

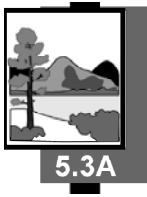
Vegetation is managed consistent with current or planned research projects, assuring that the integrity of these projects is protected. Interpretive opportunities and signing are provided for research and forest management projects.

The area is highly roaded, with gravel and native surfaces. Motorized recreation is allowed. Hiking and hunting may occur. Livestock grazing is allowed and cattle may be seen. Wildlife habitat research is encouraged. The occurrence of some wildlife species may be associated with the habitat conditions created through experimentation.

## Management Area Goals and Objectives

### General

5.3A-701. Cooperate with the Rocky Mountain Research Station to accomplish research objectives. **OBJECTIVE**



## **Biological Elements -- Flora**

### **Forest Communities**

5.3A-201. Apply harvest practices, including untested experimental practices, to meet the needs of designed experiments. **OBJECTIVE**

### **Rangeland**

5.3A-202. Perform range restoration work in association with research projects. **OBJECTIVE**

## **Disturbance Processes**

### **Fire and Fuels**

5.3A-203. Reduce the threat of wildfire damage to research projects. Provide fuel treatment recommended by research staff. **OBJECTIVE**

## **Management Area Standards and Guidelines**

## **Physical Elements**

### **Minerals**

5.3A-1501. Protect surface resource conditions to prevent alteration of research projects. **STANDARD**

## **Biological Elements -- Flora**

5.3A-2101. Tentatively suitable lands within this area do not contribute to the allowable sale quantity and are not part of the suitable timber land base. **STANDARD**

### **Rangeland**

5.3A-2501. Permit livestock grazing that is compatible with research activities. **GUIDELINE**

## **Disturbance Processes**

### **Fire and Fuels**

5.3A-4101. Permit prescribed fire in association with research projects. **GUIDELINE**

## **Social Elements**

### **Recreation**

5.3A-5101. Provide interpretive signs on experimental plots and develop brochures. **GUIDELINE**



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5.3A-5102. The recreation opportunity spectrum class is roaded natural. GUIDELINE

**Scenery Management**

5.3A-5601. The adopted scenic integrity objective is very low. GUIDELINE

**Administrative Elements**

**Special Uses**

5.3A-8501. Issue no new special-use permits. GUIDELINE

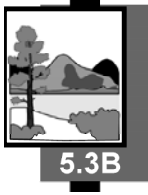
**Transportation and Travel**

◇ 5.3A-9101. Off-road motorized travel is allowed where designated by a project decision. GUIDELINE

◇ 5.3A-9102. Motorized road travel is allowed where designated by a project decision. GUIDELINE

5.3A-9103. Over-the-snow motorized travel is allowed unless restricted by a project decision. GUIDELINE

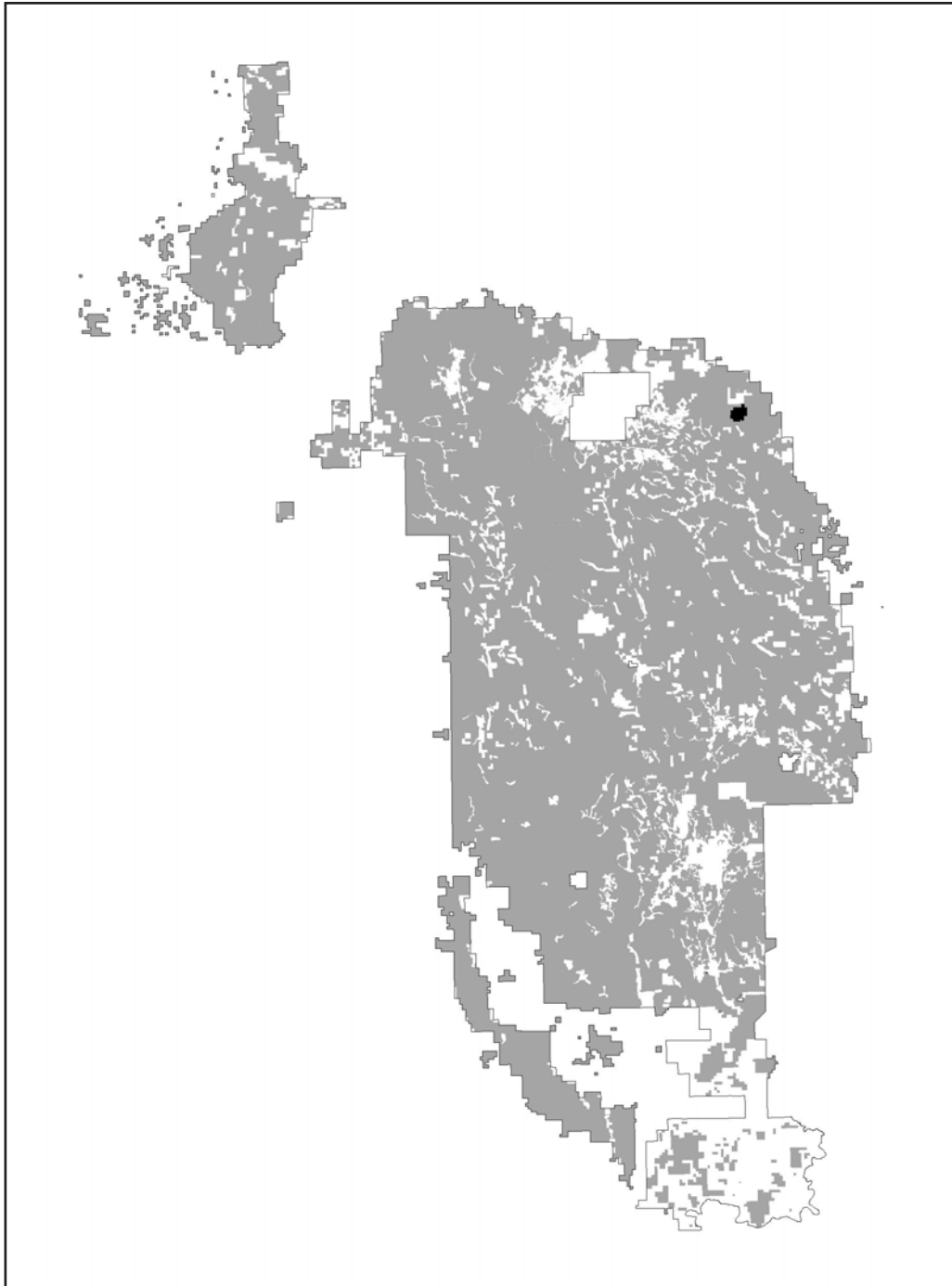
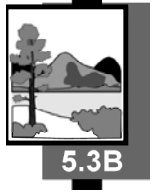
◇ Amendment #10 - May 2010 ◇



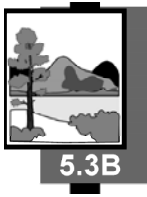
## Management Area 5.3B Sturgis Experimental Watershed

**Theme:** This is an area managed to provide for experiments, tests and other activities that obtain, analyze, develop, demonstrate and disseminate scientific information about protecting, managing and utilizing watershed resources.





**Management Area 5.3B**  
1,079 Acres  
Less than 1 percent of Forest



**Setting:** The Sturgis Experimental Watershed is located in the northeastern corner of the Northern Hills Ranger District. Research is given priority over other activities and uses of the area.

The higher elevations are relatively flat. The area gets steeper, however, as elevation decreases. Drainages are highly dissected and steep. The area generally has shallower and rockier soils than other parts of the forest.

### Activities and Opportunities:

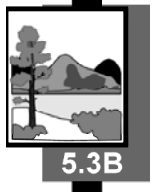
Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Yes
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	Experimental
Livestock Grazing	Yes
Mineral Development	Withdrawn

**Desired Future Condition:** The most conspicuous tree species is the ponderosa pine. Small areas of white spruce, aspen and other hardwoods also exist in this management area. Some natural openings and meadows of various sizes and shapes occur throughout the landscape.

Forested portions of the area exhibit tree groups of different ages and heights. Some recently cut areas show tree stumps, slash and disturbed soil, although signs of disturbed soil are only seen for a few years after harvest. Slash is burned or otherwise disposed of, and vegetation grows back. Other recently cut areas retain a partial canopy of older trees. The boundaries of these cut areas appear to follow natural landscape patterns.

Older cut areas exhibit tree saplings, poles or young trees up to 45 feet. In these areas, the forest floor appears less disturbed than in more recently cut areas. Occasionally, large patches of late-successional trees of various heights appear. Scattered dead trees can be seen in the openings and within the stands of older trees.

Experiments, tests and other activities related to water yield and water quality occur. Prescribed fires may be used in conjunction with experiments. Livestock grazing compatible with research activities may be evident. Management for wildlife habitat is conducted in relation to research activities. Non-motorized recreational opportunities are provided.



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## **Management Area Goals and Objectives**

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### **General**

5.3B-701. Cooperate with the Rocky Mountain Forest and Range Experiment Station to accomplish research objectives. **OBJECTIVE**

### **Biological Elements -- Flora**

#### **Forest Communities**

5.3B-201. Apply harvest practices, including untested experimental practices, to meet needs of designed experiments. **OBJECTIVE**

### **Disturbance Processes**

#### **Fire and Fuels**

5.3B-202. Treat natural and activity fuels to established standards with emphasis placed on protection of the watershed. **OBJECTIVE**

## **Management Area Standards and Guidelines**

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### **Physical Elements**

#### **Minerals**

5.3B-1501. Protect surface resource conditions to maintain water quality. Issue no mineral-material permits for commercial developments of common variety minerals. **STANDARD**

### **Biological Elements -- Flora**

#### **Forest Communities**

5.3B-2101. Tentatively suitable lands within this area do not contribute to the allowable sale quantity and are not part of the suitable land base. **STANDARD**

#### **Rangeland**

5.3B-2501. Permit livestock grazing that is compatible with research activities. **GUIDELINE**



## Biological Elements -- Fauna

### Wildlife

5.3B-3201. Coordinate wildlife habitat management in relation to research management activities. **GUIDELINE**

## Disturbance Processes

### Fire and Fuels

5.3B-4101. Suppress each wildfire to protect the investments of research projects. **GUIDELINE**

5.3B-4102. Permit prescribed fire in association with research projects. **GUIDELINE**

## Social Elements

### Recreation

5.3B-5101. The recreation opportunity spectrum class is semi-primitive non-motorized. **GUIDELINE**

### Scenery Management

5.3B-5601. The scenic integrity objective is very low. **GUIDELINE**

## Administrative Elements

### Special Uses

5.3B-8501. Issue no new special-use permits. **GUIDELINE**

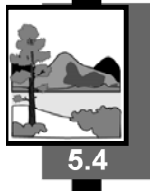
## Transportation and Travel Elements

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

5.3B-9101. Off-road motorized travel is prohibited. **STANDARD**

5.3B-9102. Motorized road travel is restricted to designated routes. **STANDARD**

5.3B-9103. Over-the-snow motorized travel is restricted to designated routes and areas. **STANDARD**

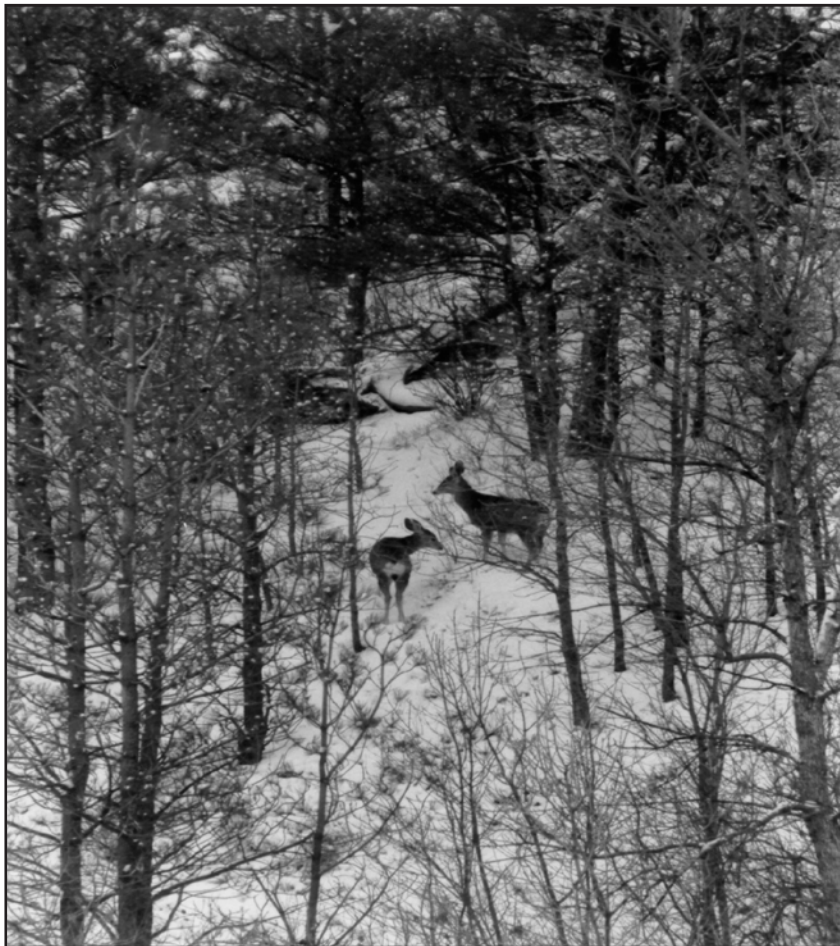


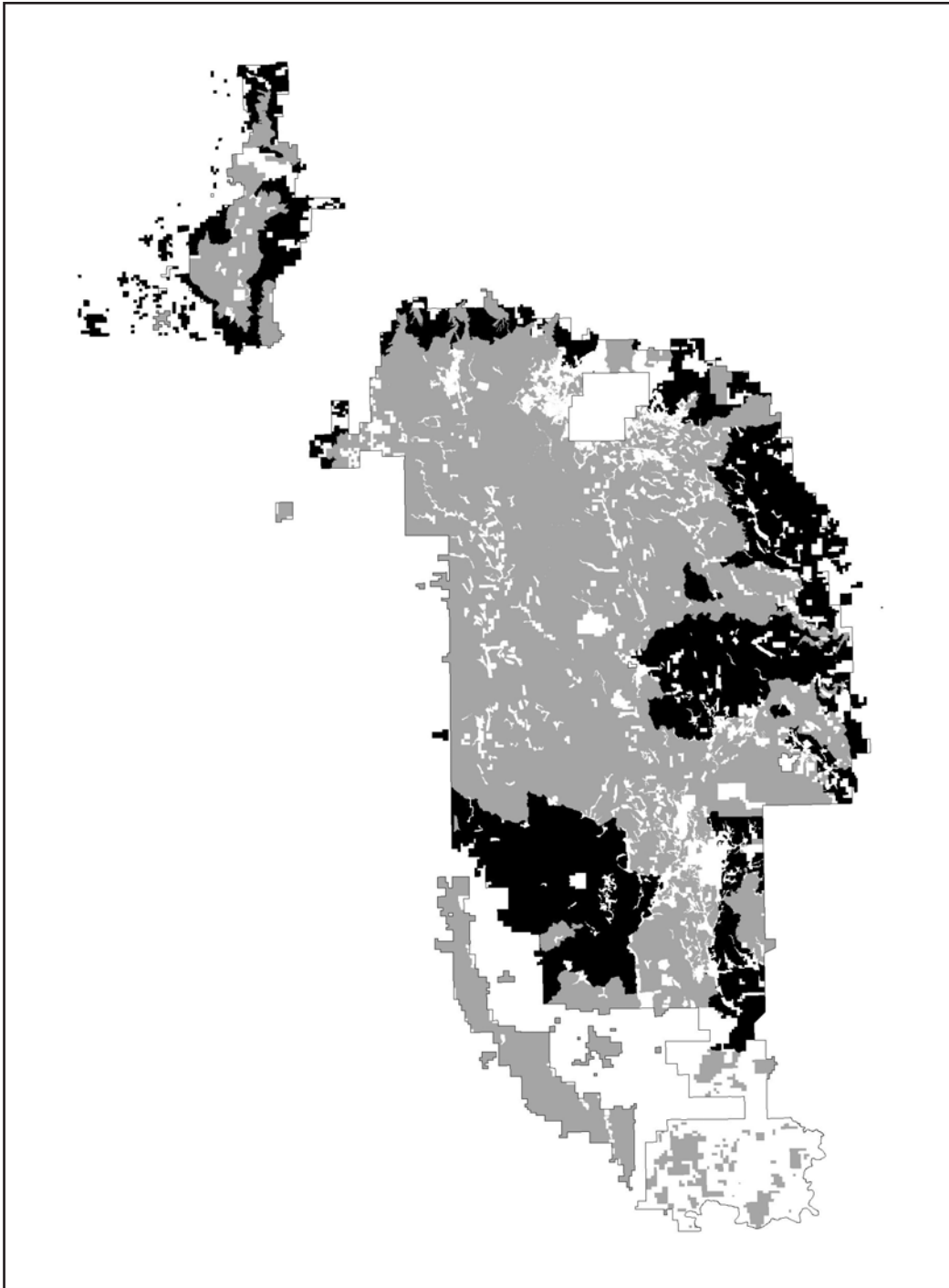
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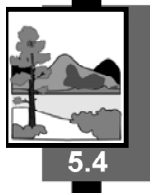
## Management Area 5.4 Big Game Winter Range Emphasis

**Theme:** These areas are managed to provide high-quality winter and transitional habitat for deer and elk, high-quality turkey habitat, habitat for other species, and a variety of multiple uses.





**Management Area 5.4**  
396,516 Acres  
31.8 Percent of Forest



**Setting:** Typically, these areas are located in foothill positions or on old wildfire sites where reduced snow depths and often better-than-average forage conditions provide the habitat sought by deer and elk during the winter. These areas represent the traditional wintering sites selected by deer and elk and important transitional habitats where deer and elk often linger, giving birth to their young before returning to summer ranges elsewhere in the Black Hills. These low-elevation habitats play a critical role in the annual life cycle of many Black Hills elk and deer, and these areas are becoming increasingly important, especially since residential and commercial development continues on private lands adjacent to National Forest System lands. The amount of use these areas receive from deer and elk depends on the severity of the winter. These areas also provide turkey habitat on the forest.

### Activities and Opportunities:

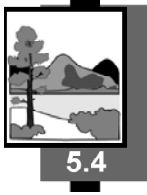
Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	May Be Restricted
Off-Road Motorized Vehicles	May Be Restricted
Timber Harvesting	Yes
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** The area is managed to provide big game winter range while maintaining healthy plant communities and recreational opportunities. All activities, including recreation, are managed so that deer and elk can effectively use the area during winter and other critical time periods. The full range of management practices occur.

High quality winter habitat is in part maintained by reducing vehicle access to key areas. Vehicle traffic is limited to only a portion of the total road network. Off-road motorized travel is limited in certain areas. Low-standard roads are visible, but may be permanently closed by barriers or seasonally closed by gates.

Management emphasizes a vegetative mosaic, with natural and created openings and diverse sizes and ages of tree stands. Species diversity is evident, including aspen, bur oak and mountain mahogany, as well as ponderosa pine and white spruce.

Timber harvesting and prescribed burning are the primary management tools used to stimulate browse production and to improve habitat within these key wildlife areas. Hiding and thermal cover and late-successional areas are provided. Vegetation is managed to provide healthy plant communities with a variety of species for food and cover.



**Management Area 5.4**

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Appropriate habitat effectiveness is maintained to provide deer and elk with cover, forage and solitude. As such, the landscape is composed of a variety of forest conditions, including openings, and high- and low-density stands. Some dense, mature forest stands are conserved for thermal cover. Motorized road and off-road closures may be implemented, especially during the winter months, particularly to minimize stress to wildlife, especially deer and elk.

Mining and livestock grazing may be seen. Hunters and hikers, as well as other recreationists, may frequent these areas.

By creating or maintaining big game habitat on the National Forest, the time spent by these animals on private lands may be reduced.

**Management Area Goals and Objectives**

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**Biological Elements -- Flora**

**Forest Communities**

5.4-201. Manage tree stands for wildlife habitat and vegetative diversity. **GOAL**

5.4-202. \*DELETED

5.4-203. \*DELETED

**Rangeland**

5.4-204. Improve forage on range areas. **GOAL**

**Biological Elements -- Fauna**

**Wildlife**

5.4-205. \*DELETED

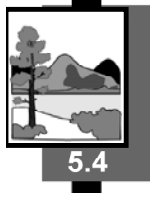
5.4-206. \*NEW. Manage for the following percentages of structural stages in ponderosa pine across the management area in a variety of sizes and shapes.

**OBJECTIVE**

SS1	5%		SS4A	25%*
SS2	5%		SS4B	25%*
SS3A	10%		SS4C	5%*
SS3B	15%		SS5	5%**
SS3C	5%			

\*10% of the structural stage 4 ponderosa pine acreage in the management area will have an average tree size of "very large". Seek opportunities to increase understory shrubs in open-canopy structural stages.

\*\*Active management is allowed, and may be necessary, to provide desired late-successional characteristics.



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5.4-207. \*NEW. Manage for an open-road density of 1 mile of road per square mile or less for general public travel from December 15 through May 15. **OBJECTIVE**

## **Management Area Standards and Guidelines**

### **Physical Elements**

#### **Minerals**

5.4-1501. \*Operating and reclamation plans shall minimize or mitigate impacts to deer and elk habitat. Operating plans shall restrict the period of operation to reduce the disturbance to deer and elk during periods of high use. **STANDARD**

### **Biological Elements -- Flora**

#### **Forest Communities**

5.4-2101. \*DELETED

5.4-2102. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

#### **Rangeland**

5.4-2501. \*Design livestock management strategies including distribution and stocking rates to be compatible with big-game habitat objectives. **STANDARD**

5.4-2502. Feature big game use of forage increases, that result from the vegetative improvements, while also allowing for livestock increases. Follow forest-wide proper allowable use guidelines or residual levels documented in AMPs or AOIs for combined use by wildlife and livestock. **GUIDELINE**

### **Biological Elements -- Fauna**

#### **Wildlife**

5.4-3201. Temporary openings in the grass/forb stage should be between 1 to 10 acres. **GUIDELINE**

5.4-3202. Consider adjacent private land resources when designing management for isolated Forest System tracts. **GUIDELINE**

5.4-3203. \*DELETED

### **Disturbance Processes**

#### **Fire and Fuels**

5.4-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to achieve resource management objectives. **GUIDELINE**



## Management Area 5.4

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5.4-4102. Emphasize the use of prescribed fire as a tool to increase the density, vigor and nutritional value of important forage plants for improved health of wintering big game animals. **GUIDELINE**

### **Social Elements**

#### **Recreation**

5.4-5101. Any activities may be prohibited when needed to mitigate adverse impacts on wildlife. **GUIDELINE**

5.4-5102. Manage use to allow low to moderate contact with other groups and individuals. **GUIDELINE**

5.4-5103. The recreation opportunity spectrum is roaded natural. **GUIDELINE**

#### **Scenery Management**

5.4-5601. The adopted scenic integrity objectives are:

High = 51,224 Acres

Moderate = 166,821 Acres

Low = 176,348 Acres

**GUIDELINE**

### **Transportation and Travel**

◇ 5.4-9101. Off-road motorized travel is allowed where designated by a project decision, but is prohibited from December 15 through May 15. **STANDARD**

◇ 5.4-9102. Motorized road travel is allowed where designated. **GUIDELINE**

5.4-9103. Over-the-snow motorized travel is restricted to designated routes and areas. **STANDARD**



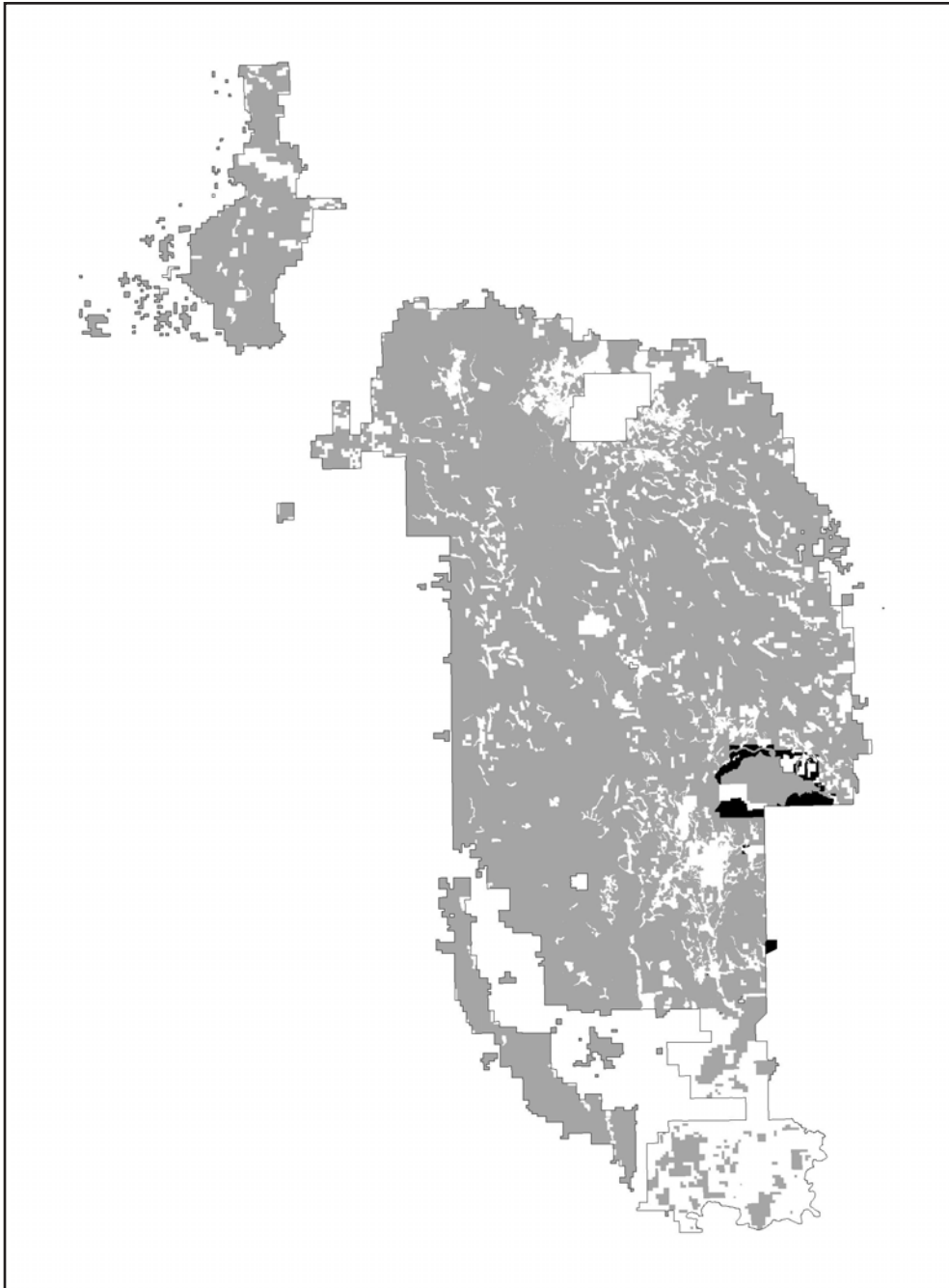
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## Management Area 5.4A Norbeck Wildlife Preserve

**Theme:** This area is managed to provide habitat for game animals and birds. Some human activities are allowed, consistent with wildlife needs.





**Management Area 5.4A**  
12,236 Acres  
1 Percent of Forest  
44.6 Percent of Norbeck Wildlife Preserve  
(Remainder in Management. Areas 1.1A and 4.2B)



**Setting:** Norbeck Wildlife Preserve was established by Congress in 1920 for the “protection of game animals and birds and to be recognized as a breeding place therefor.” Although it does not prohibit other uses, the law leaves little doubt: Norbeck is to be managed for the benefit of wildlife.

Norbeck is home to a variety of wildlife, including elk, deer, mountain goats, small mammals and birds. It contains rugged granite formations and small streams. The predominant vegetation is ponderosa pine, but there are also stands of spruce and hardwoods, and small open meadows.

The Preserve covers about 35,000 acres. Approximately 28,000 acres are within the Black Hills National Forest. The remaining land is privately owned or under the jurisdiction of Custer State Park. Black Elk Wilderness (see Management Area 1.1A) lies within Norbeck Wildlife Preserve, as does the Peter Norbeck Scenic Byway (see Management Area 4.2B).

## Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Restricted
Off-Road Motorized Vehicles	No, except administrative
Timber Harvesting	As needed for wildlife habitat.
Livestock Grazing	Yes
Mineral Development	Restricted

**Desired Future Condition:** Habitat is provided for game animals and birds. To provide for a variety of wildlife species, Norbeck contains a variety of habitat including open areas; shrubs; tree stands of different ages, densities and species; and healthy streamside areas.

Norbeck contains stands of ponderosa pine of different ages and heights, with scattered stands of white spruce and hardwoods. Some stands consist of young trees. Late-successional stands are distributed across the landscape. A higher portion of tree stands in Norbeck are in late succession than in most of the forest. Late-successional stands are connected by stands of mature trees. Scattered throughout Norbeck are some openings and meadows of various sizes and shapes. There are also massive, bare, rock outcrops.

Streamside areas support a variety of vegetation, including shrubs and forbs, as well as pine, spruce, aspen, and birch.

Activities are undertaken to create or maintain wildlife habitat diversity. There are tree stumps, slash and disturbed soil in some areas. Where tree cutting



has occurred recently, there may still be a canopy of older trees. Boundaries of cut areas follow natural landscape patterns. Prescribed burning is used as a management tool to maintain forage for wildlife, to rejuvenate hardwood and shrub species, or to reduce fuels.

Some areas may show signs of recent wildfire. Some stands may contain many dead trees, a result of insect infestation or disease.

In most areas, motorized travel is limited to highways, a few gravel roads, and access to private land and recreational sites. Most low-standard roads are permanently closed to provide wildlife security. These roads often have barriers, gates and/or signs explaining the reason for the closure. Closed roads have been seeded to native species and may have trees growing in them.

Recreational activities are not detrimental to wildlife. Non-motorized activities, such as hiking, mountain biking and horseback riding, occur along a system of trails. Some closed low-standard roads are part of the trail system. Trails may be closed seasonally to provide wildlife security.

There is some evidence of old mining, but active mining is rare. Fuelwood gathering is prohibited, except by special permit. Hunting and trapping may occur. Livestock grazing is allowed.

## **Management Area Goals and Objectives**

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(See Appendix E for more specific direction for the Norbeck Wildlife Preserve.)

### **Biological Elements -- Flora**

#### **Biological Diversity**

5.4A-201. Manage tree stands for wildlife habitat and vegetative diversity. **GOAL**

5.4A-202. Manage forest cover types to provide variety in stand sizes, shape, crown closure, edge contrast, age structure and interspersion. **GOAL**

5.4A-203. Manage for the following conifer successional stages:

15 to 20 percent to provide forage

25 to 50 percent in the young and mature stage

20 to 25 percent in natural succession (late-successional landscape)

#### **OBJECTIVE**

5.4A-204. Enhance shrub productivity. **OBJECTIVE**

5.4A-205. Retain or restore acres of aspen and birch within Norbeck. **OBJECTIVE**



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5.4A-206. Retain or restore acres of oak and white spruce within Norbeck.

**OBJECTIVE**

5.4A-207. \*DELETED

5.4A-208. In conifer-dominated portions of a planning unit, provide 5 to 10 tons per acre of down and dead woody material at least 3 inches in diameter, where biologically feasible and not in conflict with fire management objectives. Total tonnage will include 2 to 3 logs per acre (including existing deadfall and/or cull logs) at least 6 inches in diameter and at least 20 feet long. **OBJECTIVE**

5.4A-209. Emphasis on species commonly hunted, fished, or trapped will follow species priorities established by the State of South Dakota. Maintain habitat needed to support population goals agreed upon in consultation with the State.

**OBJECTIVE**

5.4A-210. Provide wildlife cover and forage.

- a. Provide thermal cover for big game on at least 30 percent of the planning unit.
- b. Manage for 5 to 10 percent of each 640 acres in 1- to 10-acre openings to provide forage.

**OBJECTIVE**

## **Social Elements**

### **Scenery Management**

5.4A-401. Consistent with wildlife needs, emphasize vista openings, rock outcroppings and hardwood stands along roads open year-long or seasonally, and along trails. **GOAL**

## **Administrative Elements**

### **Real Estate**

5.4A-501. If buyer and seller are willing, use any available legal authority to acquire isolated tracts of private land which contain perennial streams and/or contribute to wildlife protection. (See Appendix E.) **OBJECTIVE**

5.4A-502. Consolidate ownership of lands generally east of the Iron Mountain Highway under any available legal authority. (See Appendix E.) **OBJECTIVE**



## **Management Area Standards and Guidelines**

(See Appendix E for more specific direction for the Norbeck Wildlife Preserve.)

### **Physical Elements**

#### **Water**

5.4A-1201. At a minimum, the following will be identified as protected stream courses:

Pine Creek	Grizzly Bear Creek
Iron Creek	Spokane Creek
Sunday Gulch	Toll Gate Creek
Battle Creek	Lost Cabin Creek
Palmer Creek	

The lower portions of Willow and Nelson Creeks

**STANDARD**

#### **Minerals**

5.4A-1202. Issue no mineral material permits for commercial development of common variety minerals. **STANDARD**

5.4A-1203. Prohibit mining activities in portions of the Norbeck Wildlife Preserve as specified by the Regional Forester's July 28, 1989, prohibition found in the Record of Decision for the Norbeck Wildlife Preserve EIS, and in accordance with PL-747. (See Appendix E.) **STANDARD**

### **Biological Elements -- Flora**

#### **Biological Diversity**

5.4A-2101. \*DELETED

(See Forest-wide Standards and Guidelines for guidance concerning snag distribution, creation, replacement and soft snag retention.)

5.4A-2102. \*DELETED

5.4A-2103. Allow natural succession to occur where habitat is needed for wildlife associated with late-successional stands. Clear-cut or burns of up to one acre (group selection) are permitted within late-successional stands to enhance late-successional characteristics. **GUIDELINE**

5.4A-2104. Fell or remove trees killed or damaged by fire, insect, disease or



windstorm if they constitute hazards on roads open year-round or seasonally, in developed recreation sites and along designated trails. (In summer home groups, this is the responsibility of the permittee with authorization from the District Ranger.) Otherwise, remove trees killed or damaged by fire or natural causes if such removal is consistent with wildlife habitat needs. **GUIDELINE**

5.4A-2105. Methods available for management include, but are not limited to timber harvest, non-commercial tree cutting and/or thinning, and prescribed burning. **GUIDELINE**

5.4A-2106. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

5.4A-2107. Do not offer more than 5.4 million cubic feet of sawtimber and 1 million cubic feet of products other than logs (POL) on suitable lands in Norbeck in the decade from fiscal year 1997 to 2006. **STANDARD**

### **Rangeland**

5.4A-2501. Existing livestock grazing may continue; permits may be reissued to existing or new permittees. Do not permit any increase in livestock numbers (animal months). **STANDARD**

5.4A-2502. Take advantage of opportunities to transfer forage use from livestock to wildlife. **GUIDELINE**

5.4A-2503. Prevent habitat degradation adjacent to water sources. (See Appendix E.) **GUIDELINE**

5.4A-2504. The Spokane Allotment is designated unsuitable for livestock grazing. **STANDARD**

5.4A-2505. Livestock grazing may be used intermittently as a management tool (even in areas designated unsuitable for livestock grazing) to improve habitat conditions, e.g., to control noxious weeds. **GUIDELINE**

## **Biological Elements -- Fauna**

### **Wildlife**

5.4A-3201. **DELETED**

5.4A-3202. **\*DELETED**

5.4A-3203. **\*DELETED**

(See Forest-wide Standards and Guidelines for additional direction regarding goshawk nest stands and fledgling habitat.)



5.4A-3204. Do not introduce bison. **STANDARD**

5.4A-3205. In habitat critical to wildlife, as defined in the Norbeck EIS (7/89), the season of operations for vegetation treatment and other activities is limited to August through November. (See Appendix E.) **GUIDELINE**

5.4A-3206. At least 50 percent of any vegetation treatment area will be undisturbed at a given time, providing places for wildlife to escape from human activity. **GUIDELINE**

5.4A-3207. To reduce wildlife disturbance, do not log any area more often than every 20 years. **GUIDELINE**

5.4A-3208. Fuelwood gathering is prohibited, except under special permit. **GUIDELINE**

## **Disturbance Processes**

### **Fire and Fuels**

5.4A-4101. Manage fire and fuel through control practices and a full array of fuel treatment options to provide the greatest improvements to the wildlife habitat. **GUIDELINE**

5.4A-4102. Emphasize the use of prescribed fire to establish and maintain the health of fire adapted vegetation and associated wildlife habitat. **GUIDELINE**

### **Insect and Disease**

5.4A-4201. Control native insect or disease outbreaks only when positive effects to wildlife habitat are outweighed by predicted loss of resource values outside the management area. **GUIDELINE**

## **Social Elements**

### **Recreation**

5.4A-5101. Manage recreational activities so they do not conflict with wildlife needs. **GUIDELINE**

5.4A-5102. The predominant recreation opportunity spectrum class is roaded natural non-motorized. Specific areas and travel routes are open year-round or seasonally for motorized recreation. Otherwise, the area is closed to motorized recreation, including snowmobiling. (See Appendix E.) **GUIDELINE**

5.4A-5103. Do not expand the recreational trail system; relocate trail segments to correct or prevent environmental damage. **STANDARD**



5.4A-5104. New recreation facilities and improvements are prohibited except for interpretive or directional signing (including trail closure signs), and measures to protect public health and safety or wildlife, soil or water resources. (See Appendix E.) **GUIDELINE**

5.4A-5105. Pets allowed in Norbeck must be under control (either by voice or by physical constraint, such as a leash). **GUIDELINE**

5.4A-5106. Recreational livestock is prohibited within 100 feet of lake shores and stream banks, except during watering and through travel. **STANDARD**

5.4A-5107. Under the Congressional Act establishing Norbeck (41 Stat 986), the Secretary of Agriculture has authority to regulate hunting and trapping in Norbeck Wildlife Preserve. Hunting and trapping may be allowed, consistent with negotiated agreements with the State of South Dakota. **GUIDELINE**

### **Scenery Management**

5.4A-5601. Except as wildlife habitat needs dictate otherwise, the adopted scenic integrity objectives are:

High = 10,208 Acres

Moderate = 4,607 Acres

Low = 947 Acres

**GUIDELINE**

## **Administrative Elements**

### **Real Estate**

5.4A-8101. Convey National Forest System land under any available legal authority only if such conveyance meets specific criteria. (See Appendix E.)

**GUIDELINE**

### **Special Uses**

5.4A-8501. Authorize land occupancies only if they are compatible with wildlife needs. **STANDARD**

5.4A-8502. Issue term special-use permits for existing recreational residences. No new recreational residences or additions to existing structures are permitted. (See also Appendix E.) **STANDARD**



5.4A-8503. The three outfitter-guide permits for horseback riding existing in July, 1989, may continue as long as terms of the permits are met and resources can be protected. Do not expand existing permits or allow new outfitter-guide permits for any activities. (See Appendix E.) **STANDARD**

5.4A-8504. Special events may be permitted if they create no adverse effect on wildlife during critical seasons and do not conflict with direction for the Black Elk Wilderness (Management Area 1.1A). (See Appendix E.) **GUIDELINE**

5.4A-8505. Do not permit ranges for firearm target practice. **STANDARD**

### **Transportation and Travel**

5.4A-9101. Manage road use to provide for habitat needs of wildlife and to maintain habitat effectiveness. Construct new local roads or reconstruct existing local roads needed for management activities. Physically block and revegetate local roads between periods of use. (See Appendix E.) **GUIDELINE**

5.4A-9102. Retain existing highways, county roads, and roads serving private land and developed recreation sites. **GUIDELINE**

5.4A-9103. Permit foot, horseback and bike (non-motorized) travel on recreational trails. **GUIDELINE**

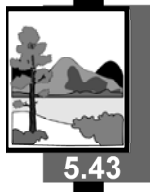
5.4A-9104. Close seasonally or obliterate recreational trail segments found to cause conflicts with wildlife needs. **GUIDELINE**

5.4A-9105. Prevent conflicts between log hauling and recreation traffic. (See Appendix E.) **GUIDELINE**

5.4A-9106. Permit only road signs necessary for safety, traffic management, and interpretation. **GUIDELINE**

5.4A-9107. Specific areas and travel routes are open year-round or seasonally for motorized recreation. Otherwise, the area is closed to motorized recreation, including snowmobiling. (See Appendix E.) **GUIDELINE**

5.4A-9108. Limit motorized administrative travel to emergencies and work which cannot be accomplished by other means. (See Appendix E.) **GUIDELINE**



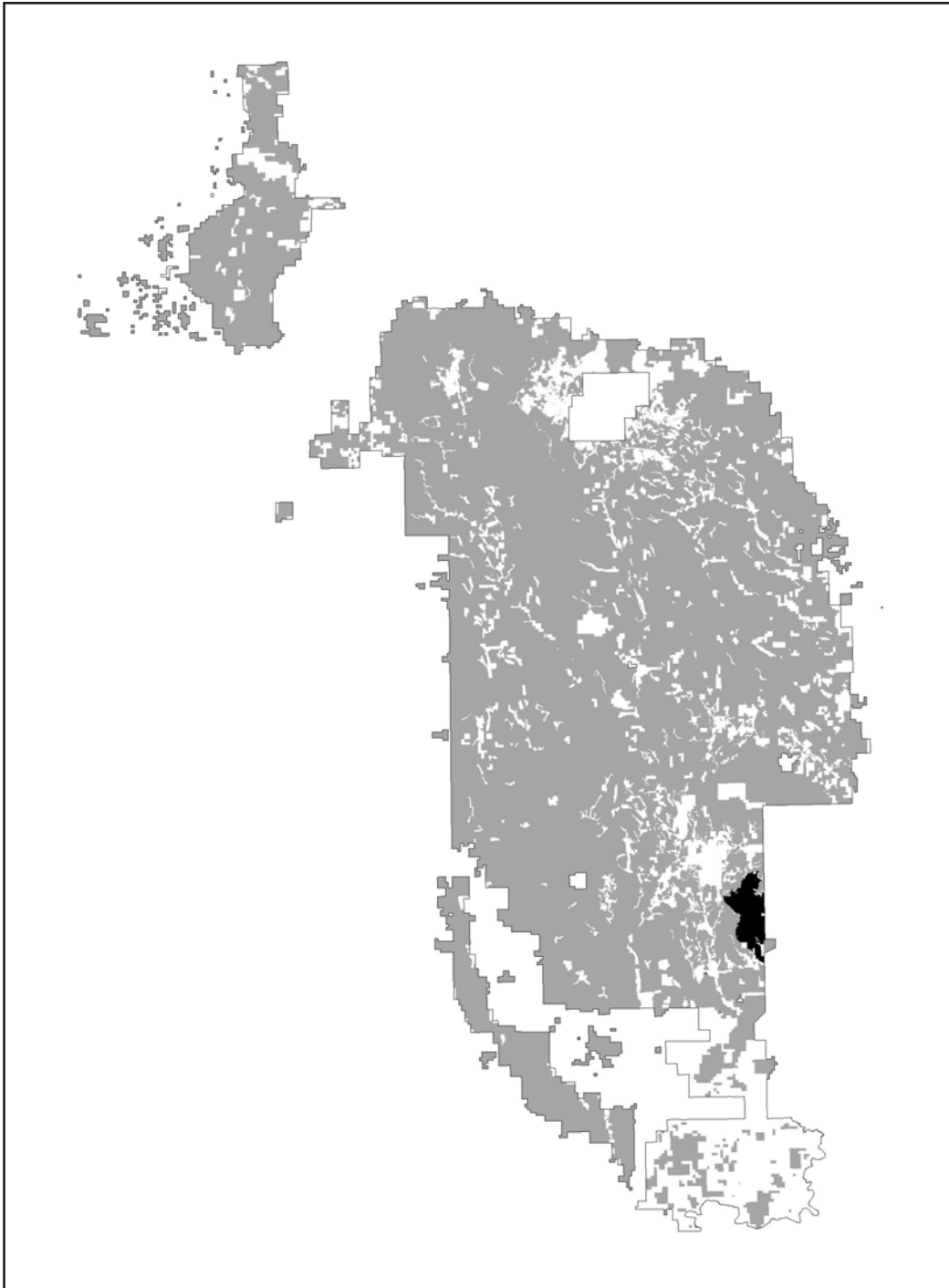
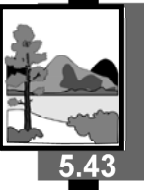
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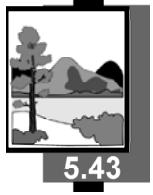
## Management Area 5.43 Big Game and Resource Production

**Theme:** These areas are managed for wildlife and timber production, and include low open road densities and optimum forage/cover ratios.





**Management Area 5.43**  
10,162 Acres  
0.8 Percent of Forest



**Setting:** This area contains important elk habitat, including winter range. This area also provides opportunities for non-motorized recreation, while allowing timber harvesting and livestock grazing. Evidence of human activity is present for wood-fiber production. Roads used for timber harvesting often provide access for hikers, mountain bikers, horseback riders and other non-motorized travelers and hunters.

The opportunities for solitude, risk and a challenging environment are less prevalent in these areas than those managed for more primitive recreational experiences. Because management activities occur in these areas, users are likely to encounter people associated with timber harvesting, livestock management or other activities. Forest Service employees may be seen preparing areas for management activities.

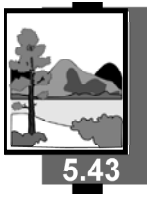
### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	Restricted
Off-Road Motorized Vehicles	No, except administrative (Restricted Snowmobiles)
Timber Harvesting	Yes
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** An extensive road system is present, but, except for the major routes, is usually closed to motorized vehicles. Most roads have native surfaces. Most of the local road surfaces are covered with grasses or other vegetation, unless they have been recently used to haul logs. In such a case, the vegetation may be worn down.

Ponderosa pine is probably the most conspicuous tree species, although areas of aspen and other hardwoods occur. Natural and created openings or meadows of various sizes and shapes occur as well. Many areas consist of mature to over mature trees, particularly when compared to more intensely managed areas on the forest. There may be many areas that are open and park-like, with large diameter trees. Forested areas appear managed, without much evidence of damage by insects and diseases.

Timber harvesting and prescribed burning are primary management tools used to improve habitat for wildlife in the area. Tree groups of different ages and heights are present. Some recently cut areas exhibit stumps, slash and disturbed soil. Disturbed soil is only evident for a few years after timber harvests. Vegetation



quickly reclaims the areas. Other recently cut areas still have a partial canopy of older trees. The boundaries of these cut areas appear to follow natural landscape patterns.

Older cut areas show tree saplings, poles or young trees up to 45 feet and show little disturbance to the forest floor. Occasionally, large patches of late-successional trees occur. Scattered dead trees appear in openings and in older tree stands. Vegetation is managed to provide healthy plant communities with a variety of species present for food and cover.

Non-motorized recreational opportunities are provided, such as hiking, mountain biking, horseback riding, hunting and cross-country skiing. Wildlife representative of the Black Hills may be seen. Livestock may also be encountered in the summer and fall.

## Management Area Goals and Objectives

### Biological Elements -- Flora

#### Forest Communities (FC)

5.43-201. Emphasize wildlife habitat and wood-fiber production. **GOAL**

5.43-202. \*DELETED

5.43-204-FC. \*NEW. Manage for the following percentages of structural stages in ponderosa pine across the management area in a variety of sizes and shapes.

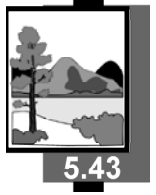
#### **OBJECTIVE**

SS1	5%	SS4A	25%*
SS2	5%	SS4B	25%*
SS3A	10%	SS4C	5%*
SS3B	15%	SS5	5%**
SS3C	5%		

\*10% of the structural stage 4 ponderosa pine acreage in the management area will have an average tree size of "very large". Seek opportunities to increase understory shrubs in open-canopy structural stages.

\*\*Active management is allowed, and may be necessary, to provide desired late-successional characteristics.

5.43-205-FC. \*NEW. Manage for an open-road density of 1 mile of road per square mile or less from December 1 to May 15. **OBJECTIVE**



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### **Rangeland**

5.43-203. Improve forage on range areas. **GOAL**

## **Management Area Standards and Guidelines**

### **Biological Elements -- Flora**

#### **Forest Communities**

5.43-2102. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

#### **Rangeland**

5.43-2501. Feature big game use of forage increases that result from the vegetative improvements, while also allowing for livestock increases. Follow the Forest-wide proper allowable use guidelines or residual levels designated in AMPs or AOIs for combined forage use by wildlife and livestock. **GUIDELINE**

### **Biological Elements -- Fauna**

#### **Wildlife**

5.43-3201. Temporary openings in the grass/forb stage should be between 1 to 10 acres. **GUIDELINE**

5.43-3202. \*DELETED

### **Disturbance Processes**

#### **Fire and Fuels**

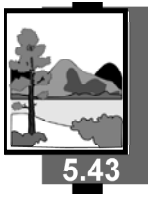
5.43-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to achieve resource management objectives. **GUIDELINE**

5.43-4102. Emphasize the use of prescribed fire to increase the density, vigor and nutritional value of important forage plants for improved health of wintering big game animals. **GUIDELINE**

### **Social Elements**

#### **Recreation**

5.43-5101. The recreation opportunity spectrum class is roaded natural, non-motorized. **GUIDELINE**



## Management Area 5.43

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### **Scenery Management**

5.43-5601. The adopted scenic integrity objectives are:

High = 104 Acres

Moderate = 6,739 Acres

Low = 3,171 Acres

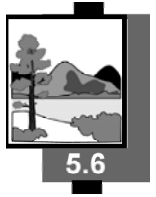
#### **GUIDELINE**

### **Transportation and Travel**

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

5.43-9101. Off-road motorized travel is normally prohibited unless an area is specifically designated as open through a project decision. **GUIDELINE**

5.43-9102. Motorized road travel is restricted to designated routes. **GUIDELINE**

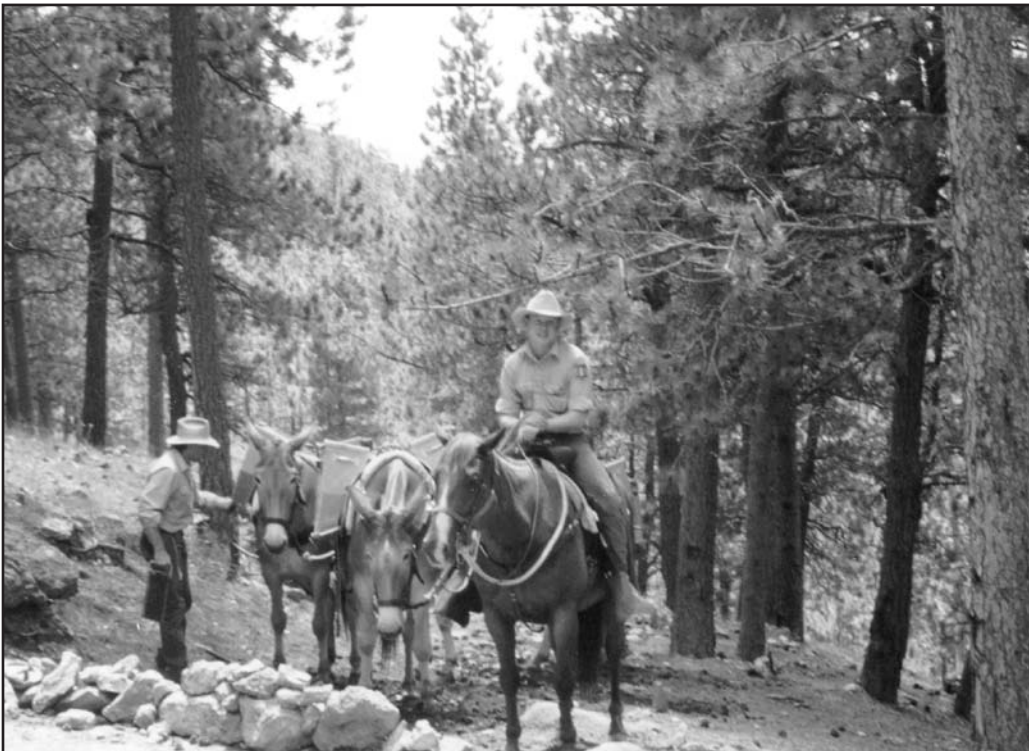


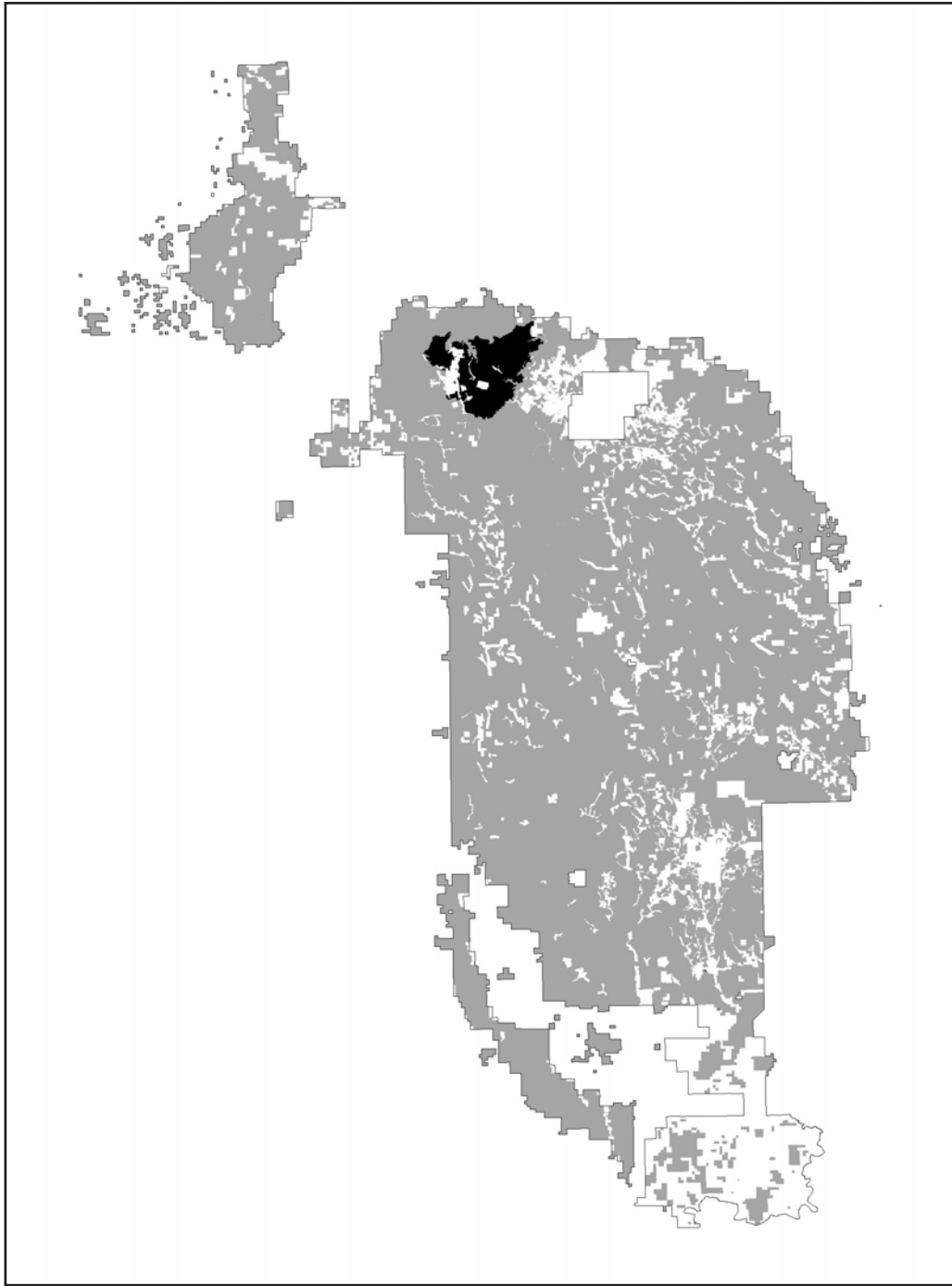
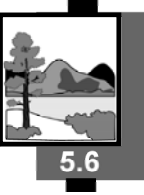
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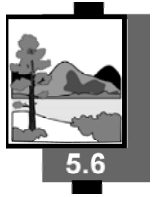
## Management Area 5.6 Forest Products, Recreation, and Big Game Emphasis

**Theme:** This area is managed for timber production, non-motorized recreational opportunities, and big game habitat value, with low open road densities and near-optimum arrangement of forage and cover areas.





**Management Area 5.6**  
27,176 Acres  
2.2 Percent of Forest



**Setting:** These areas provide opportunities for a mixture of motorized and non-motorized recreation, while allowing timber harvesting and livestock grazing. These areas also contain important elk habitat, including winter range. Evidence of human activity is present for wood-fiber production. Roads used for timber harvesting often provide access for hikers, mountain bikers, horseback riders, other non-motorized travels and hunters. In some areas access is provided through trails.

The opportunities for solitude, risk and a challenging environment are less prevalent in these areas than those managed for more primitive recreational experiences. Because management activities occur in these areas, users are likely to encounter people associated with timber harvesting, livestock management or other activities. Forest Service employees may be seen preparing areas for management activities.

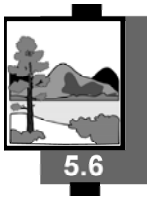
### Activities and Opportunities:

Non-motorized Dispersed Recreation	Yes
On-Road Motorized Vehicles	May Be Restricted
Off-Road Motorized Vehicles	May Be Restricted
Timber Harvesting	Yes
Livestock Grazing	Yes
Mineral Development	Yes

**Desired Future Condition:** An extensive road system is present; except for major routes, motorized travel is restricted. Most roads have native surfaces. Most of the local road surfaces are covered with grasses or other vegetation, unless they have been recently used to haul logs. In such a case, the vegetation may be worn down. Snowmobiles use some routes.

Ponderosa pine is probably the most conspicuous tree species, although areas of white spruce, aspen and other hardwoods occur. Natural and created openings or meadows of various sizes and shapes occur as well. Many areas consist of mature to over mature trees, particularly when compared to more intensely managed areas on the forest. There may be many areas that are open and park-like, with large diameter trees. Forested areas appear managed, without much evidence of damage by insects and diseases.

Timber harvesting and prescribed burning are primary management tools used to improve habitat for wildlife in the area. Tree groups of different ages and heights are present. Some recently cut areas exhibit stumps, slash and disturbed soil.



Disturbed soil is only evident for a few years after timber harvests. Vegetation quickly reclaims the areas. Other recently cut areas still have a partial canopy of older trees. The boundaries of these cut areas appear to follow natural landscape patterns.

Older cut areas show tree saplings, poles or young trees up to 45 feet tall and show little disturbance to the forest floor. Occasionally, large patches of late-successional trees occur. Scattered dead trees appear in openings and in older tree stands. Vegetation is managed to provide healthy plant communities with a variety of species present for food and cover.

Non-motorized recreational opportunities are provided, such as hiking, mountain biking, horseback riding, hunting and cross-country skiing. Wildlife representative of the Black Hills may be seen. Livestock may also be encountered in the summer and fall.

## Management Area Goals and Objectives

### **Biological Elements -- Flora**

#### **Forest Communities (FC)**

5.6-201. \*DELETED

5.6-202. Manage forest cover types to provide variety in stand sizes, shape, crown closure, age structure and interspersion. **GOAL**

5.6-204-FC. \*NEW. Manage for the following percentages of structural stages in ponderosa pine across the management area in a variety of sizes and shapes.

**OBJECTIVE**

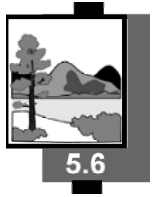
SS1	5%	SS4A	25%*
SS2	5%	SS4B	25%*
SS3A	10%	SS4C	5%*
SS3B	15%	SS5	5%**
SS3C	5%		

\*10% of the structural stage 4 ponderosa pine acreage in the management area will have an average tree size of "very large". Seek opportunities to increase understory shrubs in open-canopy structural stages.

\*\*Active management is allowed, and may be necessary, to provide desired late-successional characteristics.

#### **Rangeland**

5.6-203. Improve forage on range areas. **GOAL**



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## Social Elements

### Recreation

5.6-401. Emphasize non-motorized recreational opportunities. **GOAL**

## Management Area Standards and Guidelines

### Biological Elements -- Flora

#### Forest Communities

5.6-2101. Maintain existing stands or expand acres of hardwoods. **STANDARD**

5.6-2102. **DELETED**

5.6-2103. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

5.6-2104. In portions of the management area where a trail system is emphasized, provide a visually appealing landscape by providing a diversity of vegetative species and size classes with vista openings that feature rock outcroppings and park-like stands of large ponderosa pine. **GUIDELINE**

#### Rangeland

5.6-2501. Feature big game use of forage increases, that result from the vegetative improvements, while also allowing for livestock increases. Follow the forest-wide proper allowable use or residual guidelines for forage use by wildlife and livestock combined. **GUIDELINE**

### Biological Elements -- Fauna

#### Wildlife

5.6-3201. Temporary openings in the grass/forb stage should be between 1 to 10 acres. **GUIDELINE**

5.6-3202. **\*DELETED**

### Disturbance Processes

#### Fire and Fuels

5.6-4101. Utilize appropriate fuel treatment practices, including prescribed fire, to achieve resource management objectives. **GUIDELINE**

5.6-4102. Use prescribed fire to improve the vigor, abundance and nutritional value of important forage plants for the benefit of big game animals, and other wildlife. **GUIDELINE**



## Social Elements

### Recreation

5.6-5101. The recreation opportunity spectrum class is roaded natural. GUIDELINE

### Scenery Management

5.6-5601. The adopted scenic integrity objectives are:

High = 622 Acres

Moderate = 20,114 Acres

Low = 5,767 Acres

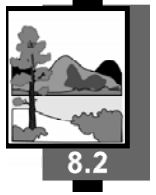
GUIDELINE

### Transportation and Travel

◇ 5.6-9101. Off-road motorized travel is allowed where designated by a project decision. GUIDELINE

◇ 5.6-9102. Motorized road travel is allowed where designated by a project decision. GUIDELINE

5.6-9103. Over-the-snow travel is allowed unless restricted by a project decision. GUIDELINE

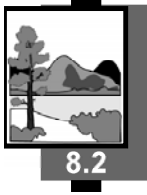


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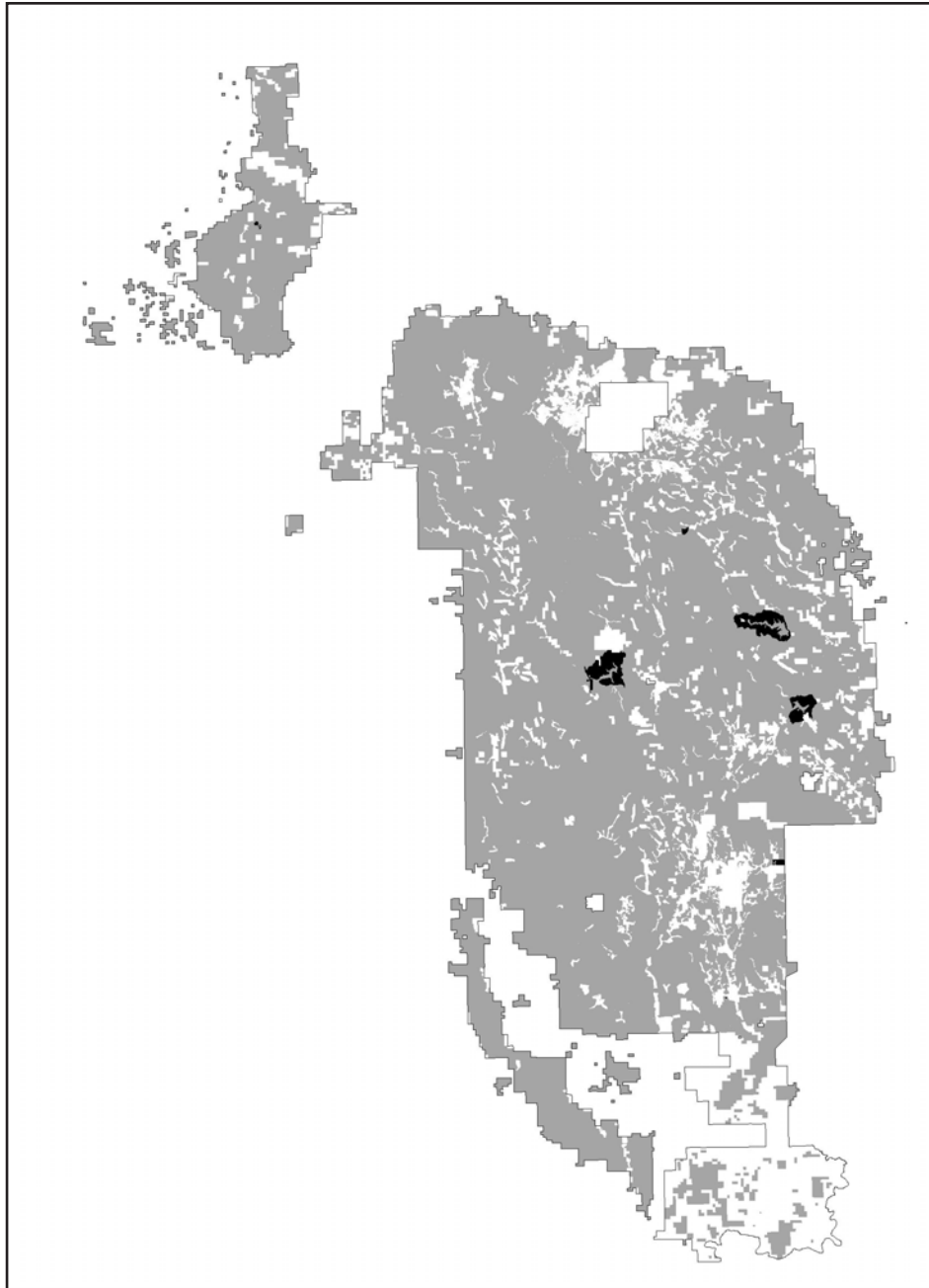
## Management Area 8.2 Developed Recreation Complexes

**Theme:** These areas are managed for recreational opportunities and visual qualities adjacent to developed recreation sites and bodies of water.

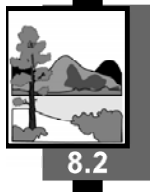




Management Area 8.2



<p><b>Management Area 8.2</b> 11,368 Acres (Excluding Water)</p> <p>Less than 1 percent of Forest</p>	<p><b>Areas</b> Pactola Reservoir Sheridan Lake Deerfield Lake Roubaix Lake Bismarck Lake Cook Lake Cascade Complex</p>
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**Setting:** These areas are located adjacent to bodies of water where the public concentrates for recreational purposes. The areas are Pactola Reservoir, Sheridan Lake, Deerfield Lake, Roubaix Lake, Bismarck Lake, Cook Lake, and Cascade Complex. Some of the more popular recreational activities in this management area include picnicking, camping, boating, hiking and fishing. These activities occur in structured settings characterized by scenic beauty.

## Activities and Opportunities:

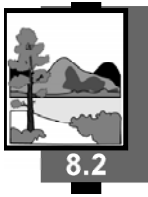
Non-motorized Dispersed Recreation	Yes
On-Road Motorized Travel	Yes
Off-Road Motorized Travel	No, except administrative
Timber Harvesting	Restricted
Livestock Grazing	Yes
Mineral Development	No New

**Desired Future Condition:** The forests and landscapes surrounding developed recreation sites appear natural. While ponderosa pine is perhaps the most conspicuous tree species, other species are visible, including white spruce, aspen and other hardwoods, which often grow in patches or along streams. A diverse range of tree sizes and ages are represented. Large, majestic “yellow-bark” ponderosa pine appear in pockets, accenting the area. Periodically interrupting the forested landscapes are openings and meadows of various shapes and sizes.

Activities associated with the management of various resources, such as timber harvesting and prescribed burning occur. In comparison to other parts of the forest, however, management activities are less evident and of shorter duration. The management activities most often seen are directed at the maintenance and improvement of the area’s natural setting, and the provisions for a healthy and safe recreational environment.

The lakes that lie at the center of these areas serve as visual centerpieces and are the main recreational attractions. Water skiing may occur, as may fishing or other water sports. Information regarding boating restrictions are posted at boat launches and developed site locations. Trails and roads may lead to and around lakes or other areas within this management area.

Management alterations may be evident, but are harmonious with the scenic condition of the natural landscape. Hardened sites may be provided at boat launches or other areas of high use, but are only constructed to protect sensitive



## Management Area 8.2

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natural resources, such as soil and vegetation. Livestock may be seen grazing adjacent to the developed recreation complexes; however, fenced recreation sites inside the complexes are designated unsuitable for grazing and closed to this use.

Cascade Complex is situated in a much different vegetative setting than those of the higher elevation lake recreation sites. This southern, low elevation site is dominated by wetland vegetation with surrounding uplands of ponderosa pine and Rocky Mountain juniper at the J.H. Keith Picnic Ground and an upland grassland component at Cascade Falls.

Currently, Cascade Complex, which includes both sites, is the only relatively undeveloped warm spring and stream in the Black Hills. It is the largest single spring in the Black Hills. The warm water provides for warm climate plant species more acclimated to the Southern United States. Four of these plant species are found nowhere else in the Black Hills nor in South Dakota.

The warm springs, warm water cascading falls, and unique vegetation characteristics are the visual and recreational attractions of this area. Recreational activities include fishing, picnicking, swimming and botanizing.

Activities associated with management of Cascade Complex would be directed at the maintenance and improvement of the areas natural setting, providing a healthy and safe recreational environment, conserving and enhancing areas of botanical interest and protecting sensitive natural resources, such as the warm springs.

## **Management Area Goals and Objectives**

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### **Biological Elements -- Flora**

#### **Forest Communities (FC)**

8.2-201. \*Manage vegetation in high-use recreation areas to provide for public safety, to improve forest condition, or protect sensitive plants and plant species of local concern as needed to maintain or improve the desired recreation setting(s) and conserve botanical features. **GOAL**

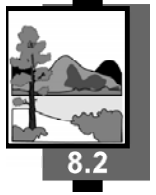
8.2-202. Emphasize a visually appealing landscape by providing a diversity of vegetative species and size classes, vista openings featuring rock outcroppings, and park-like stands of large ponderosa pine. **GOAL**

8.2-203. Maintain existing stands and acres of hardwoods. **OBJECTIVE**

### **Disturbance Processes**

#### **Fire and Fuels**

8.2-204. Manage fuels to retain a natural forest appearance and to reduce the threat of wildfire damage to forest resources. **GOAL**



8.2-205. Reduce total fuel loading to eight tons per acre or less. **OBJECTIVE**

### **Insects, Diseases, and Non-native Invasive Species**

8.2-206. \*Control insect-and-disease pest populations in and adjacent to the area through active monitoring while reducing pest-population potential through vegetative management. At Cascade Creek, use an insect-control method other than chemical pesticides as a priority. **GOAL**

8.2-207. \***NEW**. At Cascade Creek document any occurrences of salt cedar or purple loosestrife and treat as soon as control would be effective. Treat using the method(s) that would pose the least risk to R2 sensitive and species of local concern plants that occur there. **OBJECTIVE**

## **Social Elements**

### **Recreation**

8.2-208. \***NEW**. Prevent and control erosion, including erosion brought on by recreational use at locations along Cascade Creek where known *Epipactis gigantea*, *Adiantum capillus-veneris*, and *Eleocharis rostellata* populations exist if monitoring reveals that existing measures are not adequate. **OBJECTIVE**

See Forest-wide Goals and Objectives

## **Management Area Standards and Guidelines**

### **General**

8.2-1001. All resource management activities should be compatible with and minimize impacts to recreational resources and opportunities. **GUIDELINE**

## **Biological Elements -- Flora**

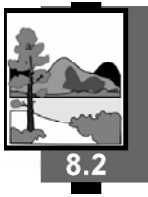
### **Forest Communities**

8.2-2101. Vegetation manipulation may be scheduled to protect and enhance recreational opportunities, but should not occur during times of high recreational use or result in conflicts with recreational activities. **GUIDELINE**

8.2-2102. Manage ponderosa pine utilizing a 200-year rotation. **GUIDELINE**

8.2-2103. Suitable lands are available for timber production and contribute to the allowable sale quantity. **STANDARD**

8.2-2104. \*Protect unique biological features. If monitoring of R2 sensitive or species of local concern plant occurrences documents these species are being impacted by recreational use, practices will be implemented to protect the species. **STANDARD**



### **Rangeland**

8.2-2501. Livestock management strategies in allotment management plans should meet the recreational objectives for the management area. **GUIDELINE**

### **Biological Elements -- Fauna**

#### **Wildlife**

8.2-3201. Wildlife management activities should be implemented to retain or enhance viewing opportunities and species diversity. **GUIDELINE**

8.2-3202. Retain dead standing trees that do not present a safety hazard. **STANDARD**

8.2-3203. **DELETED\***.

### **Social Elements**

#### **Recreation**

8.2-5101. The recreation opportunity spectrum class is roaded natural. **GUIDELINE**

8.2-5102. Prohibit camping outside of developed campgrounds. **STANDARD**

8.2-5103. High-use recreation sites may be hardened and/or additional restrictions enforced to protect sensitive natural resources. **GUIDELINE**

#### **Scenery Management**

8.2-5601. The adopted scenic integrity objectives are:

High = 9,331 Acres

Moderate = 3,873 Acres

Low = 196 Acres

**GUIDELINE**

### **Administrative Elements**

#### **Special Uses**

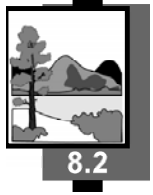
8.2-8500. Permit special-uses that are complementary and compatible with the kind and development level of the associated Forest Service facilities within the area. **GUIDELINE**

### **Transportation and Travel**

(Exceptions to travel restrictions/prohibitions may be allowed for administrative uses.)

8.2-9101. Off-road motorized travel is prohibited. **STANDARD**

8.2-9102. Motorized road travel is restricted to designated routes. **GUIDELINE**



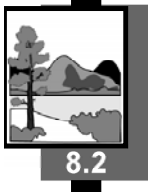
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8.2-9103. Over-the-snow motorized travel is restricted to designed routes and areas. **GUIDELINE**

8.2-9104. Transportation systems, both roads and trails, should be constructed and maintained to the levels needed to support the recreational activities within the area. **GUIDELINE**

8.2-9105. Emphasize signing of recreational purposes that comply with site-development scale and ROS. **GUIDELINE**

8.2-9106. \*No new developments, including road and trail construction, will take place in the Cascade Creek/Spring area (T8S, R5E, Sec. 20, SE $\frac{1}{4}$  SW $\frac{1}{4}$ ). **STANDARD**



## Management Area 8.2

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# Chapter Four



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# Chapter Four:

## Monitoring and Evaluation Strategy

### Introduction

The 2012 Planning Rule includes a requirement that all Forests that are not in plan revision update their forest plan monitoring within four years, or as soon as is practicable (36 CFR 219.12c). This document updates our forest plan Monitoring Plan to meet this requirement of the 2012 rule.

### Forest Plan Monitoring Under the 2012 Planning Rule

The NFMA requires “continuous monitoring and assessment in the field” to evaluate “the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land” (16 USC 1604(g)(3)(C)). The 2012 Rule includes a three-part iterative cycle of assessment, planning, and monitoring in a continuous feedback loop. Monitoring is meant to support the assessment process and evaluate plan implementation over time. This planning framework is designed to “inform integrated resource management and allows the Forest Service to adapt to changing conditions, including climate change, and improve management based on new information and monitoring” (§ 219.5 (a)).

### Specific Requirements for Monitoring Under the 2012 Rule

A monitoring plan will consist of “monitoring questions and associated indicators” which “must be designed to inform the management of resources on the plan area, including by testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plan’s desired conditions or objectives” (219.12 (a)(2)). The monitoring program must also be “coordinated with the regional forester and Forest Service State and Private Forestry and Research and Development” (§ 219.12 (a)(1)) and support and align with a broader-scale monitoring program, to be developed at the regional level, that will address monitoring questions at a geographic scale broader than one plan area (§ 219.12 (b)). Furthermore, in developing the monitoring plan, the responsible official should also provide opportunities for public participation, “taking into account the skills and interests of affected parties”, as well as the scope, methods, forum and timing of those opportunities (§ 219.4 (a)).

Monitoring may involve evaluating: if standards and guidelines are implemented (implementation monitoring); if management actions and standards and guidelines are effective in achieving goals and objectives (effectiveness monitoring); the long term trend and condition of key resources (condition or surveillance monitoring). At a minimum, the plan monitoring program must contain one or more monitoring questions and associated indicators addressing the following eight items (see §219.12[a][5][i-viii]):

- (i) The status of select watershed conditions
- (ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems
- (iii) The status of focal species to assess the ecological conditions required under § 219.9
- (iv) The status of a select set of the ecological conditions required under § 219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern
- (v) The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives
- (vi) Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area
- (vii) Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities
- (viii) The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g)(3)(C)).

## Biennial Monitoring Report

A monitoring evaluation report is to be produced and made available to the public every two years (§ 219.12 (d)). It “must indicate whether or not a change to the plan, management activities, or the monitoring program, or a new assessment, may be warranted based on the new information... [and] must be used to inform adaptive management of the plan area” (§ 219.12 (d)(2)). The monitoring program and evaluation report are part of the administrative record (§ 219.14 (b)) and the Forest Supervisor must document “how the best available scientific information was used to inform planning, the plan components, and other plan content, including the plan monitoring program” (§219.13 (a)(4)).

## Monitoring Plan Components

The following section details the specific components of the monitoring plan. Specific monitoring items are organized by the required categories of monitoring questions identified in the planning rule (§ 219.12), with at least one monitoring question and indicator for each category.

Each question presented in the final Monitoring Plan includes a brief description of the desired condition or objective each monitoring item is associated with, followed by the question, a description of the specific indicator or metric used to answer or evaluate the monitoring question, the data source or measurement protocol associated with the monitoring item, and finally, a rationale or justification for the specific monitoring indicator and protocol. This will ensure that the requirements for best available science are met.

<b>I. The status of select watershed conditions</b>			
<b>Monitoring item, Monitoring Question(s) and Indicator(s)</b>	<b>Related Forest Plan Components</b>	<b>Frequency of Reporting</b>	<b>Data – Protocol – Database</b>
<b>I-1) Watershed Condition Framework (WCF) {2, 4, 5}</b> <i>Monitoring Question: Is the unit improving condition in priority watersheds?</i> <i>Indicator: Completion of number and percentage of essential projects identified in Watershed Restoration Action Plans.</i>	*RR-1  Obj. 102, 104a, 108	Obj 102- Completed  2 years - Obj 104a  5 years – Obj 108	gPAS – Obj 104a  Watershed Condition Framework (WCF) approach. – Obj 108
<b>I-2) National BMP program {2, 4}</b> <i>Monitoring Question: Are BMP's implemented, and are they effective at protecting water quality?</i> <i>Indicator: Monitoring protocols rating system</i>	*RR-2  Obj. 104	2 years	National Best Management Practices (BMPs) For Water Quality on National Forest System Lands. FS-990b 2012 (in prep)
<b>II. The status of select ecological conditions</b>			
<b>Monitoring item, Monitoring Question(s) and Indicator(s)</b>	<b>Related Forest Plan Components</b>	<b>Frequency of Reporting</b>	<b>Data – Protocol – Database</b>
<b>II-1) Air quality {1}</b> <i>Monitoring Question: To what degree are objectives for management of the air quality resource being met?</i> <i>Indicator: Number of days that implementation of Forest activities (i.e. prescribed burning) meets air quality standards</i>	Obj. 101.	2 years	SD DENR, EPA
<b>II-2) Forest and Grassland Health, Insects and Diseases – Exotics {23, 24}</b> <i>Monitoring Question: What is the status and trend for select insects and diseases in the planning area? (mountain pine beetle, Ips, gypsy moth, others)</i> <i>Indicator: Type of outbreak, acres and location.</i>	*RR-3  Obj. 230, 10-07, 10-08	2 years	Annual aerial surveys. Information provided by Forest Health unit.  Forest Vegetation Database and Forest Inventory Analysis (FIA)

Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>II-3) Riparian Condition/Trend {6}</b>  <i>Monitoring Question: What is the condition and trend of riparian areas?</i>  <i>Indicator: Riparian condition based on changes in vegetation communities and streambank condition.</i></p>	<p>Obj. 104b. Obj. 213.</p>	<p>2 years.  (Individual site monitoring frequency may range within a 2 – 10 year interval depending on recovery rates of vegetation.)</p>	<p>MIM (Multiple Indicator Monitoring) Transect Protocol with optional use of up to 10 indicators. Three indicators provide data from short-term livestock (or other herbivore) use. Seven indicators provide data regarding long-term resource condition.  May also use other Region 2 accepted methods, such as but not limited to: Proper Functioning Condition, Greenline Composition/Stability, or other similar protocols.</p>
<p><b>II-4) Riparian/Wetlands Restoration {7}</b>  <i>Monitoring Question: How much riparian and wetland habitat has been restored?</i>  <i>Indicator: Acres of riparian and wetland restoration projects.</i></p>	<p>Obj. 214, 215.</p>	<p>2 years</p>	<p>Watershed Improvement Database (WIT).</p>
<p><b>II-5) Vegetative Diversity - Cover type, composition and structure {8}</b>  <i>Monitoring Question: What is the status and trend of vegetation species diversity?</i>  <i>Indicator: Vegetation cover type acres and trend.</i></p>	<p>Obj. 201, 202, 203, 204, 205, 239-LVD</p>	<p>2 years</p>	<p>FSVeg database</p>
<p><b>II-6) Vegetative Diversity- Structural stages {9}</b>  <i>Monitoring Question: To what degree are objectives for pine structural stages being met?</i>  <i>Indicator: Structural stage acres and trend?</i></p>	<p>Obj. 3.7-201, 4.1-203, 5.1-204, 5.4-206, 5.43-204, 5.6-204</p>	<p>2 years</p>	<p>FSVeg database</p>

Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>II-7) Vegetative Diversity- Large trees</b> {10}  <i>Monitoring Question:</i> To what degree are objectives for retention of large trees being met?  <i>Indicator:</i> Acres and percentage of tree size “Very large” for SS 4 pine.</p>	<p>Obj. 4.1-203, 5.1-204, 5.4-206, 5.43-204, 5.6-204</p>	<p>2 years</p>	<p>FSVeg Database</p>
<p><b>II-8) Vegetative Diversity - Snags</b> {11}  <i>Monitoring Question:</i> To what degree is the objective for snags being met?  <i>Indicator:</i> Number of hard snags greater than 9-inch dbh and 25 feet tall, per acre.</p>	<p>Obj. 211</p>	<p>2 years</p>	<p>FSVeg Database  FIA Database</p>
<p><b>II-9) Vegetative Diversity - Burned forest habitat</b> {12}  <i>Monitoring Question:</i> To what degree are objectives for retention of burned trees being met?  <i>Indicator:</i> Acres of burned forest retained for habitat</p>	<p>Obj. 11-03</p>	<p>2 years</p>	<p>Fire data from Great Plains Dispatch  Timber salvage acres from database</p>
<b>III. The status of focal species</b>			
Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>III-1) Beaver –Focal Species</b> {21a}  <i>Monitoring Question:</i> What is the status of beaver populations as an indicator for riparian ecosystem integrity?  <i>Indicator:</i> Extent, density and occupancy of beaver.</p>	<p>Obj. 238a.</p>	<p>5 years</p>	<p>Natural Resource Management (NRM) Wildlife database.  USDA Forest Service Region 2 Monitoring Protocol for American Beaver (<i>Castor canadensis</i>)</p>

<b>IV. The status of select ecological conditions for TES and Species of Conservation Concern (SOCC)</b>			
<b>Monitoring item, Monitoring Question(s) and Indicator(s)</b>	<b>Related Forest Plan Components</b>	<b>Frequency of Reporting</b>	<b>Data – Protocol – Database</b>
<p><b>IV-1) Emphasis Species - Sensitive species</b> {18}</p> <p><i>Monitoring Question: What is the status and trend for sensitive species?</i></p> <p><i>Indicators: Individual species monitoring; population persistence; amount of preferred habitat on the Forest; relative density of species within preferred habitat; (for birds) nesting status and number of young fledged; number of observations from Rocky Mountain Bird Observatory.</i></p>	Obj. 217, 219, 221, 222	2 years	<p>NRM Wildlife database, RMBO avian database, SDGFP and WGF reports.</p> <p>Protocols vary by species. Integrated Monitoring of Bird Conservation Regions (IMBCR) protocol for birds.</p>
<p><b>IV-2) Emphasis Species - Species of local concern</b> {19}</p> <p><i>Monitoring Question: What is the status and trend for Species of Local Concern (SOLC)?</i></p> <p><i>Indicators: Availability and trend of preferred habitat, presence of species within habitat, and effectiveness of habitat protection measures; (bighorn sheep and mountain goats) population estimates;</i></p>	Obj. 217, 219, 221, 222	2 years	<p>NRM Wildlife database, RMBO avian database, SDGFP and WGF reports.</p> <p>Protocols vary by species. Integrated Monitoring of Bird Conservation Regions (IMBCR) protocol for birds.</p>
<p><b>IV-3) Emphasis Species - T+E species</b> {20}</p> <p><i>Monitoring Question: What is the status and trend for T+E species?</i></p> <p><i>Indicator: Status of species on the Forest and recovery actions implemented.</i></p>	Obj. 220	2 years	<p>NRM Wildlife database, INFRA Cave database, WIT database.</p> <p>Protocols vary by species and may vary over time depending on the species and information needed.</p>

<b>V. Visitor use, visitor satisfaction, and progress toward meeting recreation objectives</b>			
<b>Monitoring item, Monitoring Question(s) and Indicator(s)</b>	<b>Related Forest Plan Components</b>	<b>Frequency of Reporting</b>	<b>Data – Protocol – Database</b>
<p><b>V-1) National Visitor Use Monitoring {33}</b>  <i>Monitoring Question: What is the level and trend of visitor use and satisfaction for high quality recreational opportunities on the unit?</i>  <i>Indicator: Percent satisfaction for 1) very satisfied; 2) somewhat satisfied; and 3) total satisfaction</i></p>	<p>*RR-4  Obj. 410, 414</p>	5 years	National Visitor Use Monitoring (NVUM) survey reports. NRM
<p><b>V-2) Scenic integrity {29}</b>  <i>Monitoring Question: What is the status and trend of scenic integrity on the planning unit?</i>  <i>Indicator: Acres meeting Scenic Integrity Objectives</i></p>	Obj. 401, 402	2 years	Field review
<p><b>V-3) Recreation opportunities {32}</b>  <i>Monitoring Question: To what status and trend for recreation opportunities?</i>  <i>Indicator: Types of recreation opportunities provided.</i></p>	Obj. 407, 408, 409, 410, 411, 412, 413, 414, 415	2 years	GIS ROS data  NICE database
<p><b>V-4) Access - Off-road vehicle access {35}</b>  <i>Monitoring Question: To what degree are objectives for off-road vehicle access being met?</i>  <i>Indicators: Percent of Forest available for off-road travel.</i></p>	Obj. 422	FP amendment in 2010 set allowable off-road motorized travel opportunities.	Forest transportation inventory
<p><b>V-5) Access - Trail opportunities {36}</b>  <i>Monitoring Question: To what degree are objectives for trail opportunities being met?</i>  <i>Indicators: Miles of trail by user type, trail development.</i></p>	Obj. 416, 417, 418, 419	2 years	Forest transportation inventory, trails.

VI. Measurable changes on the Plan area related to climate change and other stressors			
Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>VI-1) Fire - Fire hazard {25-26-27}</b>  <i>Monitoring Question: Status and trend of fire hazard?</i>  <i>Indicators:</i></p> <ul style="list-style-type: none"> <li>• Percent and acres of fire hazard ratings.</li> <li>• Acres of core and integrated fuel treatments to reduce fire hazard ratings.</li> <li>• Status of fire management and protection partnerships.</li> <li>• Acres of wildfire, number of fire starts, causes and losses of wildfire.</li> </ul>	<p>Obj. 10-01  Obj. 10-04  Obj. 10-05, 10-06</p>	<p>2 years</p>	<p><u>FSVeg database</u> - structural stage data  <u>FAMWEB Data Warehouse</u> - wildfire occurrence.  <u>FACTS database</u> – fuel management                       Partnership/interagency 1) fire mgmt agreements, 2) fire training exercises, 3) pre-suppression and prevention activities, 4) Fire mgmt meetings, 5) suppression support to partners, 6) Dispatch Center</p>
<p><b>VI-2) Fire - Non-emergency watershed condition after stand-replacing fire {28}</b>  <i>Monitoring Question: What is the status of post-fire watershed conditions for those fire areas that a Burned Area Emergency Response (BAER) risk assessment had been completed?</i>  <i>Indicators: Vegetation recovery on slopes, drainage feature stability, stormflow evidence, downed wood (n/a for grassland systems).</i></p>	<p>Obj. 11-01. *NEW, 11-02. *NEW</p>	<p>2 years</p>	<p>Fires Assessed through BAER process. Site Stabilization Information.</p>
VII. Progress toward meeting desired conditions and objectives			
Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>VII-1) Commodity Production - Timber Production {15}</b>  <i>Monitoring Question: What is the status and past outputs for timber volume sold?</i>  <i>Indicator: Volume of sawtimber and roundwood sold.</i></p>	<p>Obj. 303-305</p>	<p>2 years</p>	<p>PTSAR database</p>

Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>VII-2) Commodity Production - Rangeland trend</b> {16}</p> <p><i>Monitoring Question:</i> What is the status and trend of rangeland conditions?</p> <p><i>Indicators:</i> Variation from desired conditions for rangelands, based on changes in vegetation communities, expressed on an allotment basis and total acres assessed.</p>	Obj. 302	<p>2 years.</p> <p>(Individual site monitoring frequency may range within a 5 – 10 year interval)</p>	<p>Cover/Frequency Transect Protocol is used, but may also use other Region 2 accepted methods, such as but not limited to: photo points, line intercept transects, Rangeland Health assessments, and other related approaches.</p>
<p><b>VII-3) Commodity Production Forage utilization/ Residual</b> {17}</p> <p><i>Monitoring Question:</i> To what degree are objectives for forage utilization being met?</p> <p><i>Indicator:</i> Monitoring Proper Allowable Use Guidelines (Percent Utilization by Weight) on a pasture by pasture basis and total acres assessed.</p> <p>Number of Livestock Animal Unit Months (AUMs) grazed each season to estimate livestock forage pounds consumed each grazing year.</p>	Obj. 301	<p>2 years</p> <p>(Permittees are responsible for following proper allowable use guidelines, as expressed in their AOI each grazing year.)</p>	<p>May use any Region 2 accepted methods including but not limited to Landscape Appearance, Grazing Response Index, Paired Plots, photo points, or other related approaches.</p> <p>Forest Livestock AUMs would be summarized from annual use records in Range INFRA database.</p>
<p><b>VII-4) Emphasis Species – MIS</b> {21}</p> <p><i>Monitoring Question:</i> What is the status and trend of management indicator species?</p> <p><i>Indicators:</i> Amount (acres) of preferred habitat, trend of habitat, relative density of species within preferred habitat; species abundance and distribution; (white-tailed deer) population estimates; (beaver) food caches.</p>	Obj. 217, 219, 238	2 years	<p>Vegetation conditions as reported in listed related objectives.</p> <p><b>Beaver:</b> National protocol monitoring – food cache surveys - every 5 years.</p> <p><b>White-tailed deer:</b> Population estimates from SD and WY State game management agencies.</p> <p><b>Non-Game Birds</b> – Black-backed woodpecker; brown creeper, golden-crowned kinglet, grasshopper sparrow, song sparrow: RMBO MBBH, IMBCR</p> <p><b>Game-Bird - ruffed grouse:</b> SDGFP data, MBBH</p> <p><b>Fish – Mountain Sucker:</b> WGFD, SDGFP</p>

Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>VII-5) Noxious weeds and Aquatic invasive species (AIS) {22}</b></p> <p><i>Monitoring Question: To what degree are objectives for the management of noxious weeds being met?</i></p> <p><i>Indicator: The number of cooperative agreements developed with county weed &amp; pest, state, research and other similar organizations.</i></p> <p><i>Acres of noxious weed treatments and infestations by species.</i></p> <p><i>Monitoring Question: What is the status and trend for aquatic invasive species?</i></p> <p><i>Indicator: Presence of new aquatic invasive species and the spread of AIS.</i></p>	<p>Obj. 230, 231</p>	<p>2 years</p>	<p>Acres treated by chemical application, release of biological control agents, mechanical treatments such as mowing, and other related actions. This information is collected and stored in FACTS and TESP databases in NRM.</p> <p>The number of agreement is recorded in Grants &amp; Agreements database in NRM.</p> <p>AIS-presence reporting from State Resource agencies, academia, field survey, and others. Data is stored in GIS and/or the Watershed Improvement Tracking database (NRIS-WIT).</p>
<p><b>VII-6) Protection of Heritage resources {30}</b></p> <p><i>Monitoring Question: What is the status and trend for heritage resources?</i></p> <p><i>Indicators: Heritage program and Priority Heritage Assets managed to standard.</i></p>	<p>Obj. 403, 405, 406</p>	<p>2 years</p>	<p>Natural Resources Management (NRM) database.</p>
<p><b>VII-7) - Wilderness ecosystem condition; Use; Trend {31}</b></p> <p><i>Monitoring Question: What is the status and trend for wilderness condition, use and trend being met?</i></p> <p><i>Indicator: Wilderness condition.</i></p>	<p>Obj. 1.1A-401, 1.1A-405</p>	<p>2 years</p>	<p>Wilderness Stewardship performance elements</p> <p>INFRAWILD in NRM</p>

Monitoring item, Monitoring Question(s) and Indicator(s)	Related Forest Plan Components	Frequency of Reporting	Data – Protocol – Database
<p><b>VII-8) Access - Road mileage</b> {34}  <i>Monitoring Question: What is the status and trend for the management of road access?</i></p> <p><i>Indicators: Miles of Forest Development Roads, locations of entrance devices, electronic quads.</i></p>	<p>Obj. 309, 420, 421</p>	<p>2 years</p>	<p>Forest Transportation database, GIS</p>
<p><b>VII-9) Access - Right-of-way acquisition</b> {37}  <i>Monitoring Question: What is the status and trend for ROW acquisition?</i></p> <p><i>Indicators: Number of right-of-ways.</i></p>	<p>Obj. 503</p>	<p>2 years</p>	<p>Forest transportation inventory, rights-of-way</p>
<p><b>VII-10) Land adjustment</b> {38}  <i>Monitoring Question: What is the status and trend of land adjustments?</i></p> <p><i>Indicators: Number of land exchanges; acres of land acquired, acres of land conveyed</i></p>	<p>Obj. 501, 505</p>	<p>2 years</p>	<p>Regional Automated Lands Program (ALP)</p> <p>Enterprise Data Warehouse (EDW)</p>

<b>VIII. The effects of each management system to determine that they do not substantially and permanently impair the productivity of land (soils)</b>			
<b>Monitoring item, Monitoring Question(s) and Indicator(s)</b>	<b>Related Forest Plan Components</b>	<b>Frequency of Reporting</b>	<b>Data – Protocol – Database</b>
<p><b>VIII-1) Soil Productivity - disturbance field guide {2}</b>  <i>Monitoring Question: What are the status and trends of soil productivity?</i>  <i>Indicator: Type, degree and extent of soil disturbance and risk rating to determine the effect of soil disturbance on soil productivity and hydrologic function</i></p>	<p>*RR-5  Obj. 104</p>	<p>2 years</p>	<p>National Forest Service Soil Disturbance Protocol. General Technical Report (GTR) WO-82a/b</p>

\*'RR-#' refers to Regionally Consistent Monitoring Protocol

{#} are for tracking and refer to former item numbers in the original Forest Monitoring Plan, as presented in scoping.

# Glossary





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# Glossary

**Access**

The opportunity to approach, enter and make use of public or private lands.

**Acre-foot**

A water measurement term equal to the amount of water that would cover an area of one acre to a depth of one foot (43,560 cubic feet).

**Activity Area**

An area of land impacted by a management activity or activities. An activity area can range from a few acres to an entire watershed depending on the type of monitoring being conducted (R2 Supplement FSH 2509.18-92-1, Section 205). Commonly, timber-sale cutting units are considered activity areas.

**Active crown fire**

A crown fire in which the entire fuel complex becomes involved, but the crowning phase remains dependent on heat released from the surface fuels for continued spread. Also called running and continuous crown fire.

**Activity Fuels**

Fuels resulting from or altered by forestry practices, such as timber harvest or thinning, as opposed to naturally created fuels.

**Adaptive Management**

Implementing policy decisions as science-driven management experiments that test assumptions and predictions in management plans.

**Adequate Access**

A route and method of access onto non-federal land or mining claims on federal land that provide reasonable use, enjoyment, and claims consistent with similarly situated non-federal lands and resources. Use and enjoyment of these lands and claims must also minimize damage or disturbance to National Forest System (NFS) lands and resources. The authorizing officer prior to issuing any access authorization must also ensure the following:

1. the landowner has demonstrated a lack of any existing routes of access available by deed or under state or local law;
2. the route is so located and constructed as to minimize adverse impacts on soils, fish, and wildlife; scenic resources; heritage resources; threatened and endangered species; and other values of the federal land; and
3. when access routes exist across the adjacent non-federal lands or the best route as determined by the authorizing officer is across non-federal land, the applicant

landowner demonstrates that all legal recourse to obtain reasonable access across adjacent non-federal lands has been exhausted or has little chance of success.

### **Age Class**

Groups of trees or shrubs approximately the same age.

### **Air Quality Classes**

Classification established under the “Prevention of Significant Deterioration” portion of the Clean Air Act, which limits the amount of air pollution considered significant within an area. Class I applies to areas where almost any change in air quality would be significant; Class II applies to areas where the deterioration normally accompanying moderate, well-controlled growth would be permitted; Class III applies to areas where industrial deterioration would generally be allowed.

### **All-weather Road**

A road capable of being used during all weather conditions with only minor or short-term restrictions.

### **Allotment (Range Management)**

A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range allotment management plan. It is the basic land unit used to facilitate management of the range resource on National Forest System (NFS) lands administered by the Forest Service (FS).

### **Allotment Management Plan (AMP)**

The document containing the action program needed to manage the range resource for livestock utilization--and possibly wildlife utilization--while considering the soil, watershed, wildlife, recreation, timber, and other resources on lands within a range allotment.

### **Allowable Sale Quantity (ASQ)**

The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period the Plan specifies. This quantity is usually expressed on an annual basis as the “average annual, allowable sale quantity” and usually applies for 10 years or longer. This level is considered the “ceiling” of timber quantity that can be harvested from suitable lands.

### **Ambient Air**

That air, external to buildings, encompassing or surrounding a specific region.

### **Ambient Air Quality Standard**

The prescribed level of pollutants in the outside air that cannot be exceeded legally during a specified time in a specific geographical area.

### **American National Standards Institute (ANSI)**

Standards set by the ANSI represent general agreements among the maker, the seller, and user groups as to the best current practices with regard to some specific problem or product.

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**AMP**

(See “Allotment Management Plan.”)

**Animal Month (AM)**

A month tenure upon the range by one animal (yearling cattle, cow and calf, horse, or burro). Generally used for billing purposes.

**Animal Unit Month (AUM)**

The tenure of one animal-unit (considered to be one mature 1,000-pound cow or the equivalent based on the average daily forage consumption of 26 pounds of dry matter per day) for a period of one month.

**Annual Operating Instructions (AOI)**

The annual letter issued to each livestock permittee describing management, livestock pasture rotations, season of use, utilization and/or residual levels, etc. for that grazing year. These instructions implement project-level NEPA decisions (AMP) or in the absence of project NEPA, the Forest plan.

**Application (Oil-and-gas)**

A written request, petition, or offer to lease lands for the purpose of oil-and-gas exploration and/or the right of extraction.

**Appropriate Management Response (AMR)**

Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

**Appropriate Suppression Response (Fire Management)**

The planned strategy for suppression action (in terms of type, amount, and timing) on a wildfire that most efficiently meets the Forest Plan fire-management direction under current and expected burning conditions. The planned response can range from prompt control to one of containment or confinement.

**Confine:** To limit the spread of wildfire within a predetermined area principally by use of natural or pre-constructed barriers or environmental conditions. Suppression action may be minimal and limited to surveillance under appropriate conditions.

**Control:** To complete the control line around a fire, any spot fire there-from, and any interior unburned areas to be saved; to burn any unburned fuel or areas adjacent to the fire side of the control line and to cool all hot spots that are immediate threats to the control line until the control line can reasonably be expected to hold under foreseeable conditions.

**Contain:** To surround a fire and any spot fires there-from with a control line, as needed, which can reasonably be expected to check the fire’s spread under prevailing conditions.

### **Aquatic Ecosystem**

The stream channel, lake or estuary bed, water, biotic communities, and the habitat features that occur within an ecosystem (biological and physical components and their interactions) in which water is the principal medium. Examples include wetlands, streams, reservoirs, and areas with plants or animals characteristic of either permanent or seasonal inundated soils.

### **Area of Potential Effects**

The geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist.

### **Arterial Road**

(See “Road Functional Classification.”)

### **Artificial Regeneration**

The renewal of a tree crop by seeding or planting.

### **ASQ**

(See “Allowable Sale Quantity.”)

### **At-Risk Community**

An area (A) that is comprised of—(i) an interface community as defined in the notice entitled “*Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are At High Risk From Wildfire*” issued by the Secretary of Agriculture and the Secretary of the Interior in accordance with Title IV of the Department of the Interior and Related Agencies Appropriations Act, 2001 (114 Stat. 1009) (updated 66 Fed. Reg. 43384, August 17, 2001); or (ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land; (B) in which conditions are conducive to a large-scale wildland fire disturbance event; and (C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event.”

### **AUM**

(See “Animal Unit Month.”)

### **Authorized Forest Officer**

The Forest Service employee delegated the authority to perform specific duties, generally a Regional Forester, Forest Supervisor, District Ranger, or Minerals Staff Officer.

### **Availability (Oil-and-gas)**

Availability of National Forest System (NFS) lands for oil-and-gas leasing refers to lands that have not been formally prohibited from oil-and-gas leasing activities.

### **Available canopy fuel**

The mass of canopy fuel per unit area consumed in a crown fire. There is no post-frontal combustion in canopy fuels, so only fine canopy fuels are consumed. It is assumed that

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only the foliage and a small fraction of the branchwood is available.

**Available fuel**

The total mass of ground, surface and canopy fuel per unit area consumed by a fire, including fuels consumed in postfrontal combustion of duff, organic soils, and large woody fuels.

**Available Lands (Oil-and-gas)**

Any lands subject to oil-and-gas leasing under the Minerals Leasing Act.

**Average Maximum Density (AMD)**

The greatest average density of stands or trees that occur in natural undisturbed stands of a given quadratic mean diameter.

**Bank Stability Criteria**

Factors used in the determination of bank stability. Such factors may include vegetation density and vigor; evidence of past or current gulying or slumping; presence of objects that may deflect water into the banks; presence and size of rocks; and distance to break-in slope.

**Barriers (Soils and Watershed)**

Temporary structures used to control erosion, such as silt fences, straw bales, rock check dams, and felled logs.

**Basal Area (Timber Resource)**

The cross-sectional area of a stand of trees measured at breast height. The area is expressed in square feet per acre.

**Bedload (Watershed and Fisheries)**

Sand, silt, and gravel; or soil and rock debris rolled along the bottom of a stream by the moving water. The particles of this material have a density or grain size that prevents movement far above or for a long distance out of contact with the stream bed under natural flow conditions.

**Benthic Macroinvertebrates**

Large invertebrates commonly found on or in the substrate of streams and lakes. Some species (e.g. caddisfly and stonefly) use aquatic habitats during a portion of their life histories. Because of their dependence on aquatic habitat, many species can be used as water-quality indicators.

**Best Minerals Management Practices (BMMPs)**

A guide to resource management and reclamation of mined lands in the Black Hills of South Dakota and Wyoming. For a more complete definition, see Appendix D.

**Best Management Practices (BMPs)**

Land management methods, measures, or practices intended to minimize or reduce water pollution. Usually BMPs are applied as a system of practices rather than a single practice. BMPs are selected on the basis of site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility. For a more complete definition, see Appendix D.

### **Big Game**

Certain wildlife that may be hunted for sport under state laws and regulations. In the Black Hills, these animals include deer, elk, turkey, mountain goats, and bighorn sheep.

### **Big Game Security**

Protection that allows an animal to remain in a defined area despite increases in stress and disturbance associated with hunting season or other human activities.

### **Biological Control Agents**

Natural organisms such as insects, diseases, parasites, and predators that reduce pest populations of insects, diseases, and noxious weeds.

### **Biological Control Methods**

Use of natural organisms such as insects, diseases, parasites, and predators to reduce pest populations of insects, diseases, or weeds. Methods may include importation and release; conservation of native natural-enemy species; and augmentation (supplementation through rearing and release or genetic improvement) of biological control agents.

### **Biological Diversity**

The full variety of life in an area including the ecosystems, plant, and animal communities; species and genes; and the processes through which individual organisms interact with one another and with their environments.

### **Biological Evaluations**

As defined by FSM 2670.5, a biological evaluation is a documented Forest Service review of Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any threatened, endangered, proposed, or sensitive species. FSM 2672.4 identifies biological evaluation objectives and standards.

### **Black Hills HABCAP Model**

A model designed to evaluate the capability of habitats to support individual species based on the combination of plant communities and structural stages.

### **BMMPs**

(See “Best Minerals Management Practices.”)

### **BMPs**

(See “Best Management Practices.”)

### **Board Foot**

A unit of timber measurement equaling the amount of wood contained in a board one-inch thick, 12-inches long, and 12-inches wide.

### **Boulders (Watershed and Fisheries)**

Rounded or angular rocks greater than 24 inches in diameter.

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**Broadcast Burning**

A fire ignited under specific conditions (prescriptions) and within established boundaries to achieve some land-management objective.

**Broadcast Treatments (Pest Management)**

The uniform application of a pesticide over an entire area.

**Browse**

That part of the current leaf and twig growth of shrubs, woody vines, and trees available for animal consumption.

**BTU**

British thermal unit. The quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit at or near its maximum density.

**Burning Index**

A relative number related to the contribution that fire behavior makes to the amount of effort needed to contain a fire in a specified fuel type. Doubling the burning index indicates that twice the effort will be required to contain a fire in a specified fuel type, providing all other parameters are held constant.

**Candidate Species**

The U.S. Fish and Wildlife Service (USFWS) recently updated the definition of candidate species to the following: species for which the Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list but issuance of the proposed rule is precluded.

**Canopy, Canopy Closure (Canopy Cover), Canopy Layer (Silviculture)**

**Canopy:** The cover by vegetation and/or branches. Often but not always restricted to the tree layer or greater than six feet tall.

**Canopy base height:** The lowest height above the ground at which there is a sufficient amount of canopy fuel to propagate fire vertically into the canopy. Canopy base height is an effective value that incorporates ladder fuels such as shrubs and understory trees. See also fuel strata gap and crown base height.

**Canopy bulk density:** The mass of available canopy fuel per unit canopy volume. It is a bulk property of a stand, not an individual tree

**Canopy Closure/Cover:** The percentage of the ground and/or sky covered by vegetation and/or branches. These are perceived from a human point of view perpendicular to flat ground.

**Canopy fuels:** The live and dead foliage, live and dead branches, and lichen of trees and tall shrubs that lie above the surface fuels. See also available canopy fuel.

**Canopy Layer:** Cover by vegetation and branches in different height intervals. These intervals are often defined in terms of vegetation, such as herbaceous or grass/forbs less than two feet tall, shrubs less than six feet tall, and overstory greater than six feet tall.

### **Capital Investment**

Money spent for replacing, expanding, improving, or constructing facilities or long-term assets, either tangible or intangible.

### **Carrying Capacity (Wildlife and Livestock Grazing)**

The maximum number of animals that can be supported in a given environment without deteriorating that environment.

### **Cave**

Any naturally occurring void, cavity, recess, or system of interconnected passages beneath the surface of the earth or within a cliff or ledge large enough to permit a person to enter, whether the entrance is excavated or naturally formed. Such term shall include any natural pit, sinkhole, or other opening that is an extension or an integral part of the cave.

### **Cavity Nesting Species**

Wildlife species that depend on cavities in trees for their shelter and/or nesting. These species include primary cavity nesters, such as woodpeckers, which excavate cavities in soft or decayed wood for nesting, and secondary cavity nesters that typically nest in natural cavities or those excavated by another species.

### **Cavity Sites**

Portions of trees that can be excavated by primary cavity nesters or that contain natural cavities.

### **CFR**

Code of Federal Regulations.

### **Chain**

A unit of length equal to 66 feet.

### **Channel (Watershed)**

A passage either naturally or artificially created that periodically or continuously contains moving water or that forms a connecting link between two bodies of water. Stream, river, creek, run, branch, and tributary are some of the terms used to describe natural channels. Natural channels may be single or braided. Canal and floodway are some of the terms used to describe artificial channels.

### **Channel Capacity**

The ability of the channel flow to carry sediment downstream and through the system so that no net aggradation (buildup) of the channel results.

### **Chemical Agent**

A manufactured chemical compound.

### **Chlorinated Hydrocarbons**

A class of stable, broad-spectrum, synthetic pesticides, such as DDT, Dieldrin, Aldrin, Endrin, Lindane, and Chlordane.

**Class II Area (Air)**

Geographic area having air quality exceeding the National Ambient Air Quality Standards. These areas are designated for a moderate degree of protection from future air-quality degradation. Moderate increases in new pollution may be permitted.

**Classified Lands**

Lands classified by laws or regulations; i.e., areas like Wilderness, Roadless, and Wild and Scenic Rivers.

**Clearcut, Clearcutting**

The harvesting in one cut of all trees in an area. The area harvested may be a patch (zero-to-ten acres), stand (not more than 40 acres), or strip.

**Clone**

A group of plants, (for example, quaking aspen) growing in close association, derived by asexual reproduction from a single parent plant.

**Closed Road**

An intermittent service road in Maintenance Level 1 that is closed to all vehicular traffic for more than one year. The closure may be ordered under 36 CFR 261.

**CMAI**

(See “Culmination Mean Annual Increment.”)

**COA**

(See “Condition of Approval.”)

**Coal Exploration License**

The U.S. Department of Interior may issue a coal exploration license that grants the right to prospect for coal, although such a license does not grant an exclusive right.

**Coarse Gravel (Watershed and Fisheries)**

Rounded rocks generally 3/4 of an inch to three inches in diameter.

**Cobbles (Watershed and Fisheries)**

Rounded rocks between three and 10 inches in diameter.

**Collectors**

(See “Road Functional Classification.”)

**Commercial Thinning**

(See “Thinning.”)

**Commercial Timber Sales**

The selling of timber from National Forest System (NFS) lands for the manufacture of commercial products such as lumber, plywood, etc.

### **Common Variety Minerals**

Deposits that do not possess a distinctly special economic value although they may have value for use in trade or manufacture. These minerals include sand, stone, gravel, pumicite, cinders, and pumice.

### **Community (Biological)**

Any assembly of organisms living together.

### **Community (Social)**

The people who reside in one locality and are subject to the same laws or who have common interests, etc.

### **Community Life-styles**

The ways in which residents conduct their everyday routines and how the “way they live” is associated with the National Forest.

### **Concern Levels**

Measures the degree of public importance placed on landscape viewed from travelways and use areas. Concern levels are divided into three categories: Level 1, 2, and 3.

**Concern Level 1:** Includes all public transportation systems of national importance such as scenic byways, primary roads, trails, and recreation areas within the National Forest.

**Concern Level 2:** Includes high-use secondary travelways and locally important locations associated with all types of use including recreation and tourism.

**Concern Level 3:** Includes low-to-moderate use secondary travelways.

### **Conditional surface fire**

A potential type of fire in which conditions for sustained active crown fire spread are met but conditions for crown fire initiation are not. If the fire begins as a surface fire then it is expected to remain so. If it begins as an active crown fire in an adjacent stand, then it may continue to spread as an active crown fire.

### **Condition Class**

Depiction of the degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components. These classes categorize and describe vegetation composition and structure conditions that currently exist inside the Fire Regime Groups. Based on the coarse-scale national data, they serve as generalized wildfire risk rankings. The risk of loss of key ecosystem components from wildfires increases from Condition Class 1 (lowest risk) to Condition Class 3 (highest risk).

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Based on coarse scale national data, Fire Condition Classes measure general wildfire risk as follows:

**Condition Class 1**

For the most part, fire regimes in this Fire Condition Class are within historical ranges. Vegetation composition and structure are intact. Thus, the risk of losing key ecosystem components from the occurrence of fire remains relatively low.

**Condition Class 2**

This term means the condition class description developed by the USDA-Forest Service Rocky Mountain Research Station (RMRS) in the *Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management* (RMRS-GTR-87, [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr87.html](http://www.fs.fed.us/rm/pubs/rmrs_gtr87.html)), dated April 2000 (including any subsequent revisions), under which

- Fire regimes on the land have been moderately altered from historical ranges;
- A moderate risk exists of losing key ecosystem components from fire;
- Fire frequencies have increased or decreased from historical frequencies by one or more return intervals, resulting in moderate changes to

—The size, frequency, intensity, or severity of fires;

**OR**

—Landscape patterns

**AND**

—Vegetation attributes have been moderately altered from their historical ranges.

**Condition Class 3**

This term means the condition class description developed by the Rocky Mountain Research Station (RMRS) in RMRS-GTR-87 (see above) under which

- Fire regimes on land have been significantly altered from historical ranges;
- A high risk exists of losing key ecosystem components from fire;
- Fire frequencies have departed from historical frequencies by multiple return intervals, resulting in dramatic changes to

—The size, frequency, intensity, or severity of fires;

**OR**

—Landscape patterns

**AND**

—Values of vegetation attributes have been significantly altered from their historical ranges.

**Continuous crown fire**

See active crown fire

**Cone Crop**

The annual production of cones.

**Confine (Fire Management)**

(See “Appropriate Suppression Response.”)

**Confluence**

The point where two streams join together.

**Congressionally Classified Areas**

(See “Congressionally Designated Areas.”)

**Congressionally Designated Areas**

Lands within the boundaries of a component of the National Wilderness Preservation System, National Wild and Scenic River System, National Trails System, National Monuments, Recreation and Scenic Areas within the National Forest System, and similar areas designated by Congressional legislation (36 CFR 251.111).

**Conifer**

A group of cone-bearing trees, mostly evergreen, such as the pine, spruce and juniper.

**Consent Denials**

(See “Deny Consent.”)

**Consent for Oil-and-gas Leasing**

A consent by the Forest Service for oil-and-gas leasing on a specified parcel of National Forest System land. It grants the right to explore, develop, extract and dispose of a specific mineral or minerals in lands covered by the lease, subject to various terms and conditions.

**Consent to Issuance of Leases**

(See “Consent for Oil-and-gas Leasing.”)

**Conservation**

The management of a renewable natural resource with the objective of sustaining its productivity in perpetuity while providing for human use compatible with sustainability of the resource; for a forest this may include managed periodic cutting and removal of trees followed by regeneration.

**Constant Service (Roads)**

A long-term facility (road) developed and operated for continuous or annual recurrent service.

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**Construction (Roads)**

The displacement of vegetation, soil, and rock and the installation of human-made structures involved in the process of building a complete, permanent road facility. The activities occur at a location, or corridor, that is not currently occupied by a road.

**Contain (Fire Management)**

(See “Appropriate Suppression Response.”)

**Continuous Fuel Concentrations (Fire Management)**

An uninterrupted distribution of fuel particles (surface or aerial) in a fuel bed, which allows a fire to sustain combustion and actively continue to spread.

**Continuous Grazing**

Allowing domestic livestock to graze a specific range area throughout the grazing season.

**Control (Fire Management)**

(See “Appropriate Suppression Response.”)

**Controlled Surface Use (CSU)**

Allowed use and occupancy for oil-and-gas leasing, unless restricted by another stipulation, with identified resource values requiring special operational constraints that may modify the lease rights. CSU is used as an operating guideline, not as a substitute for no-surface occupancy or a “timing” stipulation.

**Conversion (Vegetation)**

To change the dominant vegetative species or growth form, such as grass/forb, through vegetative management.

**Converted**

(See “Conversion.”)

**Convey**

To transfer or deliver to another. To pass or transmit the title to property from one to another. To transfer property through the title to property by deed, bill of sale, or instrument under seal.

**Coppice, Coppice System (Vegetation Management)**

Sprout method; a system in which the crops originate mainly from suckers, roots, or stumps, as in aspen.

**Coppice with Standards (Aspen Management)**

A coppice system in which selected stems are retained as standards at each felling to form an uneven-aged overstory removed selectively on a rotation constituting some multiple of the coppice rotation.

### **Cord**

A unit of gross volume measurement for stacked roundwood based on external dimensions; generally implies a stack of 4 feet by 4 feet vertical cross sections 8 feet long (128 stacked cubic feet).

### **Corduroy (Trail Construction)**

A corduroy is similar to a puncheon and is built out of native logs for soft areas of trails. Sill logs are laid perpendicular to the roadway and spaced at fairly close intervals. Stringer logs are notched longitudinally onto the top of the first layer of logs. Log or split-log decking may or may not be installed.

### **Corridor (Utility or Rights-of-Way)**

A linear strip of land defined for the present or future location of transportation or utility rights-of-way within its boundaries.

### **Cost Effective**

Achieving specified outputs or objectives under given conditions for the least cost.

### **Cost Efficient**

A comparative measure of economic efficiency determined by maximizing the present net worth or value of an alternative, subject to meeting the objectives of the alternative.

### **Council on Environmental Quality (CEQ)**

An advisory council to the President established by the National Environmental Policy Act (NEPA) of 1969.

### **Cover Type**

The vegetative species that dominates a site. Cover types are named for one plant species or non-vegetated condition presently (not potentially) dominant, using canopy or foliage cover as the measure of dominance. In several cases, sites with different species dominant have been lumped together into one cover type; co-dominance is not necessarily implied.

### **Created Opening**

A treated forest area 10 basal area or less that is designed to produce forage.

### **Critical**

(See “Critical Habitat.”)

### **Critical Ecosystems**

Specific areas, including riparian areas, wetlands, winter range, and habitat for threatened and endangered species.

### **Critical Habitat (Norbeck Wildlife Preserve)**

“Critical wildlife habitat” and “habitat critical to wildlife” within the Norbeck Wildlife Preserve refer to deer, elk, and mountain goat habitat of high importance to these species. The Norbeck Environmental Impact Statement, July 1989, contains a map of critical habitat for deer, elk, and mountain goats.

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**Critical Habitat (Threatened, Endangered, and Proposed Species)**

Habitat of federally listed threatened or endangered species where those physical and biological features essential to conservation of the species are found and that may require special management considerations or protection. This habitat may currently be occupied or determined by the Secretary of the Interior to be essential for areas outside the species' current range.

**Crown (Vegetation)**

The upper part of a tree or other woody plant carrying the main branch system and foliage and surmounting at the crown base a more or less clean stem.

**Crown base height:** The vertical distance from the ground to the bottom of the live crown of an individual tree. See also canopy base height.

**Crown bulk density:** The mass of available fuel per unit crown volume. Property of an individual tree, not a whole stand. See also canopy bulk density.

**Crown Closure**

(See "Canopy Cover.")

**Crown Density**

The thickness both spatially in depth and in closeness of growth (compaction) of an individual crown, such as its opacity as measured by its shade density.

**Crown fire**

Any fire that burns in canopy fuels.

**Crown fire hazard**

A physical situation (fuels, weather, and topography) with potential for causing harm or damage as a result of crown fire.

**Crown Height**

For a standing tree, crown height is the vertical distance from ground level to the base of the crown, measured either to the lowest live branch-whorl or to the lowest live branch, excluding shoots arising spontaneously from buds on the stem of a woody plant or to a point halfway between.

**Crowning Index:** The open (6.1:m/ 20 ft) windspeed at which active crown fire is possible for the specified fire environment.

**Cubic Foot**

A unit of measure usually referring to wood volume (1 foot wide by 1 foot long by 1 foot thick).

**Cull Logs**

Logs that do not meet commercial specifications due to defects in the wood.

**Culmination Mean Annual Increment (CMAI)**

The point at which a tree or stand achieves its greatest average growth, based on expected growth, according to the management systems and utilization standards assumed in the Forest Plan.

### **Cultural Element**

Attributes in a human-altered landscape; scenically positive cultural elements, most of which have historical backgrounds or nostalgic connotations. Examples include split-rail fences, stone walls, barns, orchards, hedgerows, and cabins.

### **Cultural Landscapes**

Human-altered landscapes, especially those with slowly evolving landscapes, scenic vegetation patterns, or scenic structures. Addition of these elements creates a visually pleasing complement to the natural character of a landscape.

### **Cultural Properties**

(See “Historic Property.”)

### **Cultural Resources**

(See “Heritage Resources.”)

### **Cumulative Effects**

Collective results of past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes the actions.

### **Cut-to-length Harvest**

Trees cut to specified lengths in the woods and transported to the landing by way of a forwarder, which is a machine that loads and carries logs.

### **Cutover Area**

Timber stands that have been cut.

### **Cutting Cycle**

The planned, recurring lapse in time between successive cutting in a timber stand.

### **DBH**

(See “Diameter at Breast Height.”)

### **Dead Fuels (Fire Management)**

Fuels with no living tissue within which moisture content is governed almost entirely by solar radiation.

### **Dead Woody Material**

(See “Down Woody Material.”)

### **Deadfall (Vegetation)**

A fallen dead tree.

### **Decadence (Vegetation)**

A process, condition, or period of deterioration or decline. Deterioration of vigor, especially as related to a vegetative community.

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**Decision Documents**

Documents that provide the criteria and information used in the formulation and evaluation of alternatives and the preferred alternative.

**Decking Areas**

(See “Landing.”)

**Decks**

Cut timber, sawlogs, or cull logs removed from logging units and stacked.

**Defensible Space**

1) Defensible space is the area within the perimeter of a parcel, development, neighborhood or community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from an approaching wildfire or defense against encroaching wildfires or escaping structure fires. The perimeter is defined as the area encompassing the parcel or parcels proposed for construction and/or development, excluding the physical structure itself. The term “defensible space” was first used in the foreword of the 1980 *Fire Safe Guide for Residential Development in California*.

2) Defensible space is an area around a structure where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire towards the structure. It also reduces the chance of a structure fire moving from the building to the surrounding forest.

(3) Area around a structure or other improvement where fuels and vegetation are treated cleared or reduced to slow the spread of wildfire towards the structure. It also reduces the chance of a structure fire moving from the building to the surrounding forest. Creating an effective defensible space involves developing a series of management zones in which different treatment techniques are used. The actual design and development of the defensible space depends on several factors: size and shape of buildings, materials used in their construction, the slope of the ground on which the structures are built, surrounding topography, and sizes and types of vegetation on the property. (Colorado State Forest Service)

**Deferred Rotation (Grazing)**

Discontinuance of grazing on various parts of a range in succeeding years that allows each part of the range to rest successively during the growing season to permit seed production, establishment of seedlings, or plant vigor restoration. Each rested part of range is grazed during the year. Two, but usually three or more, separate grazing units are required.

**Deny Consent (Oil and Gas)**

Not to consent as in denial of a proposed oil-and-gas lease.

**Design Capacity**

The maximum theoretical amount of use a developed recreational site was built to accommodate. This is usually expressed in PAOTs (Persons at One Time).

### **Design Standard (Recreation)**

Approved design and construction specifications for recreational facilities, which includes specified materials, colors, and dimensions.

### **Designated Wilderness Areas**

(See “Wilderness.”)

### **Desired Condition (Rangelands)**

The specific future condition of rangeland resources on a landscape scale which meets management objectives as identified in the Forest Plan and Allotment Management Plan (AMP). Desired condition is based on ecological, social, and economic considerations during the land and resource management planning process and includes desired outputs under a multiple-use mandate. It is usually expressed in terms of ecological status or vegetation management status:

1. of vegetation; for example, species composition, habitat diversity, or age/size classes of species; and
2. of desired soil qualities; for example, conditions of soil cover, erosion, compaction, or loss of soil productivity.

In riparian areas, it includes characteristics such as conditions of stream bank and channel stability, stream habitat, stream side vegetation, stream sedimentation, or water quality.

### **Desired Future Condition, Desired Ecological Condition**

1. A portrayal of the land or resource conditions that are expected to result if goals and objectives are fully achieved.
2. A description of the landscape as it could reasonably be expected to appear at the end of the planning period if the Plan’s goals, objectives, standards, and guidelines for that landscape are fully achieved.

### **Desired Landscape Character**

Appearance of the landscape to be retained or created over time, recognizing that a landscape is a dynamic and constantly changing community of plants and animals. It is a combination of landscape design attributes and opportunities as well as biological opportunities and constraints.

### **Detrimental Compaction (Soils)**

A 15 percent increase in bulk density from the average undisturbed density or bulk density values that exceed a threshold value, which varies from 1.25 g/cc for silt and clay to 1.6 g/cc for sand and loamy sand.

### **Detrimental Displacement (Soils)**

The removal of soil from a continuous area of 100 square feet or more.

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**Detrimental Erosion (Soils)**

1. Sheet erosion: The general loss of soil from the soil surface. Indicators include pedestalled rocks and plants, deposition of soil on the uphill side of rocks and plants, and/or erosion pavement.
2. Rills and gullies: Erosion of channels greater than 1 inch in depth.

**Developed Recreation**

This type of recreation is dependent on facilities provided to enhance recreational opportunities in concentrated use areas. Examples include campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts, and buildings.

**Developed Recreation Sites**

Relatively small, distinctly defined areas where facilities are provided for concentrated public use, such as campgrounds, picnic areas, and swimming beaches.

**Development Roads**

(See “Forest Development Roads.”)

**Diameter at Breast Height (DBH)**

The diameter of a standing tree at a point 4 feet, 6 inches from ground level.

**Direct Effects**

Results of an action occurring when and where that action takes place.

**Dispersed Recreation**

This type of recreational use requires few, if any, improvements and may occur over a wide area. This type of recreation involves activities related to roads, trails, and undeveloped waterways and beaches. The activities do not necessarily take place on or adjacent to a road, trail, or waterway, only in conjunction with them. Activities are often day-use oriented and include hunting, fishing, boating, off-road vehicle use, hiking, and others.

**Distance Zones**

Landscape areas denoted by specified distances from the observer. Used as a frame of reference in which to discuss landscape attributes or the scenic effect of human activities in a landscape.

**Immediate Foreground** - The detailed feature landscape found within the first few hundred feet of the observer, generally from the observer to 300 feet away. This distance zone is normally used in project-level planning, not broad-scale planning.

**Foreground** - Detailed landscape generally found from the observer to one-half mile away.

**Middleground** - The zone between the foreground and background in the landscape. The area located from one-half mile to 4 miles from the observer.

**Background** - The distant part of a landscape. The landscape area located 4 miles to infinity from the viewer.

### **Diversity**

Diversity refers to the distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan (LRMP). This term is derived from the National Forest Management Act (NFMA). This term is not synonymous with “biological diversity.”

### **Diversity Unit**

An area delineated for use in management analysis. Often, diversity units follow the boundaries of fifth-order watersheds of approximately 5,000 to 10,000 acres in size.

### **Down and Dead Woody Material, Down Logs, Down Woody Material (Vegetation)**

Woody material from any source that is dead and lying on the forest floor.

### **Draft Environmental Impact Statement (DEIS)**

The statement of environmental effects required for major federal actions under Section 102 of the National Environmental Policy Act (NEPA) and released to the public and other agencies for comment and review.

### **Duff**

Partially decomposed organic matter lying beneath the litter layer and above the mineral soil. It includes the fermentation and humus layers of the forest floor (02 soil horizon).

### **Duration of Fire**

The length of time that combustion occurs at given point. Relates closely to downward heating and fire effects below the fuel surface as well as heating of tree boles above the surface.

### **Easement**

A right held by one person to make use of the land of another for a limited purpose, such as a special-use authorization for a right-of-way that conveys a conditioned interest in National Forest System (NFS) land and is compensable according to its terms.

### **Ecosystem**

1. A community of living plants and animals interacting with each other and with their physical environment. A geographic area where it is meaningful to address the interrelationships with human social systems, sources of energy, and the ecological processes that shape change over time.
2. The complex of a community of organisms and its environment functioning as an ecological unit in nature.

### **Ecosystem Approach**

A coordinated system of management actions designed to affect environmental conditions related to both species-specific limiting factors and broader ecosystem processes and conditions that influence many species.

### **Ecosystem Management**

A concept of natural resources management where-in National Forest activities are

considered within the context of economic, ecological, and social interactions within a defined area or region over both short-and long-term.

**Edge**

The place where plant communities meet or where successional stages or vegetative conditions within plant communities come together (Thomas 1979).

**Edge Contrast**

The degree of similarity or difference between two or more adjacent elements of the environment.

**Edge Habitats**

The boundary between two or more elements of the environment, such as a field and woodland.

**Effective Ground Cover (Watershed and Soils)**

All living and dead herbaceous and woody materials in contact with the ground and all rocks greater than three-fourths of an inch in diameter that can effectively stop erosion.

**Effects (Heritage Resources)**

Impacts to the characteristics that qualify a heritage resource for the National Register of Historic Places. These can include alterations in location, setting, use, design, materials, feeling, and association. Adverse effects include physical destruction or damage; isolation from or alteration of setting; introduction of visual, audible, or atmospheric elements; physical deterioration from neglect or from any action; and transfer, lease, or sale.

**Egress**

Path by which a person goes out; exit. The means or act of going out. Often used with the word “access.”

**EIS**

(See “Environmental Impact Statement.”)

**Eligible (Heritage Resources)**

Indicates a specific heritage resource qualifies for or is already listed in the National Register of Historic Places.

**Encroachments**

Improvements occupied or used on National Forest System (NFS) lands without authorization.

**Endangered Species**

Any species of animal or plant in danger of extinction throughout all or a significant portion of its range and so designated by the Secretary of Interior in accordance with the 1973 Endangered Species Act.

### **Environmental Impact Statement (EIS)**

A document prepared by a federal agency in which anticipated environmental effects of a planned course of action or development are evaluated. A federal statute requires that such statements be prepared. It is prepared first in draft or review form and then in a final form. An impact statement includes the following points: the environmental impact of the proposed action; any adverse impacts that cannot be avoided by the action; the alternative courses of actions; the relationships between local short-term use of the human environment and the maintenance and enhancement of long-term productivity; and a description of the irreversible and irretrievable commitment of resources that would occur if the action were accomplished.

### **Ephemeral Streams**

1. A stream or portion of a stream that flows briefly in direct response to precipitation in the immediate vicinity and whose channel is at all times above the water table.
2. Ephemeral areas drain water to intermittent or perennial stream channels. Any sediment created by soil erosion during logging or road-building activities can be carried by way of the ephemeral, intermittent, and perennial stream channels to the watershed outlet. Ephemeral areas generally occur above the upper reaches of intermittent or perennial streams. Since they can direct water into intermittent or perennial stream channels, care should be taken to minimize disturbing soil in these areas.

### **Erosion**

The wearing away of the land surface by running water, wind, ice, gravity, or other geological activities.

### **Erosion Hazard Rating**

The probability of soil loss resulting from complete removal of vegetation and litter. It is an interpretation based on potential soil loss.

### **Escape Route (Fire Management)**

A path of travel to get away from danger, such as the threat of wildfire.

### **Essential Habitat**

Those areas designated by the Regional Forester as possessing the same characteristics as critical habitat without having been declared as critical habitat by the Secretary of the Interior. The term includes habitats necessary to meet recovery objectives for endangered, threatened, and proposed species and those habitats necessary to maintain viable populations of sensitive species.

### **Evaluation**

The analysis and interpretation of information collected through monitoring of Forest Plan implementation.

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**Evapotranspiration**

The sum total of water lost from the land by evaporation and plant transpiration. Transpiration is loss of water in vapor form from a plant.

**Even-aged (Vegetation)**

A forest stand composed of trees having no or relatively minor differences in age.

**Even-aged Management**

The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and therefore, tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level on a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time of harvest. Clear-cut, shelterwood, or seed-tree cutting methods may produce even-aged stands.

**Even-flow (Timber)**

Maintaining a relatively constant supply of timber from decade to decade.

**Excavators (Wildlife)**

Bird species that excavate nest cavities in trees.

**Executive Order**

An order or regulation issued by the President or some administrative authority under his or her direction.

**Existing Road System**

All existing roads owned or administered by various agencies that are wholly or partly within or adjacent to and serving the National Forests and other Forest Service-administered areas or intermingled private lands. These roads may or may not be included on the current Forest Transportation Inventory but are evident on the ground as meeting the definition of a road.

**Extant**

Not lost or destroyed.

**Extirpated –**

When a species is no longer found in a geographic area such as the Black Hills, a local area extinction.

**Facility**

Structures needed to support the management, protection, and utilization of the National Forests, including buildings, utility systems, dams, and other construction features. There are three categories of facilities: recreation, administrative, and permitted.

**Facultative**

See Wetland Indicator Category

### **Federal Land Policy and Management Easements**

Federal Land Policy and Management Act (FLPMA) easements are issued when requested by landowners who are entitled to access. This is a special-use authorization for a right-of-way that conveys a conditional interest in National Forest System (NFS) land.

### **Fee Site (Recreation)**

A Forest Service recreational area in which users must pay a fee. Fee sites must meet certain standards and provide certain facilities.

### **Fee Title (Landownership)**

The full and complete possessory ownership of a parcel of land. An inheritable estate. The greatest interest in property that a person can have.

### **Fen**

Low-lying marshy land, partially covered with water.

### **Final Cutting**

1. Generally, removal of the last trees left in a stand.
2. Removal of the last seed bearers or shelter trees after regeneration is considered to be established. Under a shelterwood method, final cutting is the last removal cutting.

### **Fire-Adapted Ecosystem**

An ecosystem with the ability to survive and regenerate in a fire-prone environment.

### **Fire Behavior**

The manner in which a fire reacts to the influences of fuel, weather and topography.

### **Firebreak**

A natural or constructed barrier to stop or check fires that may occur, or to provide a control line from which to work:

### **Fire Exclusion**

The policy of suppressing all wildland fires in an area.

### **Fire Frequency (Fire Return Interval)**

A general term referring to the recurrence of fire in a given area over time. Sometimes stated as number of fires per unit time in designated area. Also used to refer to the probability of an element burning per unit time. How often fire burns a given area; often expressed in terms of fire return intervals (e.g., fire returns to a site every 5-15 years).

### **Fire Hazard**

A fuel complex, defined by volume, type, condition, arrangement and location, that determines the ease of ignition and the resistance to control. A physical situation (fuels, weather, and topography) with potential for causing harm or damage as a result of wildland fire.

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**Fire Incidence**

The average number of fires in a specified area during a specified time period.

**Fire intensity**

See frontal fire intensity. Contrast with fireline intensity.

**Fire Management Plan (FMP)**

A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. This plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, prevention plans and operational wildland fire use plans.

**Fire Occurrence**

Number of fires per unit time in a specified area (synonym for fire frequency).

**Fire Protection Assessment (FPA) (Fire Management)**

A computer software based analysis to assist managers in determining where specific types and intensities of fire-management activities should occur. The analysis uses three map overlays depicting fuel flammability (Hazard); potential value change from fire (Value); and the potential that an ignition will occur (Risk) as a means of identifying and prioritizing appropriate fire- management activities for a given land unit.

**Risk:** A term within the Fire Protection Assessment identifying the potential for an ignition to occur in a given land unit based on historical data associated with frequency of natural ignitions and the probability of human ignitions based on an assessment of human activities.

**Hazard:** A term within the Fire Protection Assessment that represents a function of potential fire line intensity based on fuels, topography, and weather influences.

**Value:** In the context of the Fire Protection Assessment, value refers to the potential for negative value change from wildfire. Value considerations would include the value of developments and natural resources, including aesthetics, all of which are subject to change from wildfire.

**Fire Regime**

A generalized description of the role fire plays in an ecosystem. It is characterized by fire frequency, seasonality, intensity, duration and scale (patch size), as well as regularity or variability. (*Agee, as modified by Sexton.*) General pattern of fire frequency, season, size, and prominent ,immediate effects in vegetation type or ecosystem

**Fire Return Interval**

Number of years between fires at a given location.

**Fire Risk**

The chance of a fire starting, as affected by the nature and incidence of causative agents, including lightning, people, and industry. Three risk scales are used: high, moderate, and low. High-risk areas include locations where lightning, people, or industry have

commonly caused fire in the past; moderate-risk areas include locations where lightning, people, or industry have periodically caused fire in the past; and low-risk areas include locations where lightning, people, or industry have infrequently caused fire in the past.

### **Fire Safe Conditions**

As defined by Agee (1996), fire safe conditions include those where

1. surface fuel conditions that limit surface fireline intensity;
2. forest stands that are comprised of fire-tolerant trees, described in terms of species, sizes and structures;

a low probability that crown fires will either initiate or spread through the forest

### **Fire Severity**

A qualitative measure of the immediate effects of fire on the ecosystem. Relates to the extent of mortality and survival of plant and animal life both above and below ground and to loss of organic matter.

### **Fire Suppression**

All the work and activities connected with fire-extinguishing operations beginning with discovery and continuing until the fire is completely extinguished.

### **Fire Suppression Objective**

To suppress wildfires at minimum costs consistent with land and resource management objectives and fire-management direction as determined by National Fire Management Analysis System (NFMAS). This includes all work and activities associated with fire-extinguishing operations beginning with discovery and continuing until the fire is completely extinguished. An example might be that a fire suppression objective is set at 5 acres, based on a cost-effectiveness analysis.

### **Fire Use**

The combination of wildland fire use and prescribed fire applications to meet resource objectives

### **Fireline Intensity**

The rate of heat energy released per unit time per unit length of a fire front. Numerically, it is the product of the heat combustion, quality of fuel consumed per unit area in the fire front, and the rate of spread of a fire as measured in BTUs per second per foot of the fire front.

### **Firewood**

(See "Fuelwood.")

### **Fiscal Year (FY)**

Within the Forest Service, the fiscal year includes October 1 to September 30. The fiscal year is referred to by the calendar year beginning January 1. For example, October 1, 1991, to September 30, 1992, is referred to as Fiscal Year 1992.

### **Fisheries Habitat**

Streams, lakes, and reservoirs that contain and support fish.

**Fledging Period**

The period during which young birds leave the nest to learn to fly and forage.

**Flood Hazard Reduction**

Steps taken to reduce the potential of hazard from high flows. These steps may include ensuring that channel width has not been narrowed either directly by the placement of material on the inside of banks or effectively by the placement of objects within the channel or potentially by undermining trees or other objects that fall into the channels; ensuring that channel depth has not been lessened; and ensuring that trees have not fallen across the channel in such a way as to increase the potential of formations of dams caused by debris.

**Floodplain**

That portion of a river valley adjacent to the channel that is built of sediments deposited during the present regimen of the stream and covered with water when the river overflows its banks at flood stages.

**Floodway**

That portion of the floodplain effective in carrying flow within which this carrying capacity must be preserved and where the flood hazard is generally highest, that is, where flood depths and velocities are the greatest.

**Foliar moisture content**

Moisture content (dry weight basis) of live foliage, ex-pressed as a percent. Effective foliar moisture content incorporates the moisture content of other canopy fuels such as lichen, dead foliage, and live and dead branchwood.

**Forage**

Vegetation used for food by wildlife, particularly ungulate wildlife and domestic livestock (Thomas 1979).

**Forbs**

Any herbaceous plant other than those in the grass, sedge, and rush families. For example, any non-grass-like plant that has little or no woody material.

**Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA)**

An Act of Congress requiring the preparation of a program for the management of the National Forest's renewable resources, and of land and resource management plans for units of the National Forest System (NFS). It also requires a continuing inventory of all National Forest System (NFS) lands and renewable resources.

**Forest Development Roads**

A Forest road under the jurisdiction of the Forest Service. Forest development roads are not intended to meet the transportation needs of the public at large. Generally, these are roads constructed to a standard to serve expected traffic generated by resource management. Although generally open and available for public use, the Forest Service may restrict or control use to meet specific management direction.

### **Forest Development Trails**

As defined in 36 CFR 212.1 and 261.2, those trails wholly or partly within or adjacent to and serving the National Forest and other areas administered by the Forest Service that have been included in the Forest Development Transportation Plan. A trail is a pathway for purposes of travel by foot, stock, or trail vehicle, usually less than 50 inches wide.

### **Forest Development Transportation Facility**

An access road, trail, waterway, or airfield wholly or partly within or adjacent to and serving National Forest System (NFS) and other lands administered by the Forest Service that has been included in the Forest Development Transportation Plan.

### **Forest Development Transportation Plan**

The plan for the system of access roads, trails and airfields needed for the protection, administration, and utilization of the National Forest and other lands administered by the Forest Service or the development and use of resources upon which communities within or adjacent to the National Forests are dependent.

### **Forest Development Transportation System**

Those facilities, Forest development roads, trails, and airfields in the transportation network and under Forest Service jurisdiction.

### **Forest Facility Master Plan**

The plan that depicts the development and management of the Forest's facilities. This includes current volume of business and projections for the future; locations for needed skills to perform program work; existing administrative sites and proposed locations of new sites; and management strategies concerning consolidation or sharing services between units.

### **Forest Interior Habitat**

That portion of the stand not affected by edge is termed interior habitat. The value of forest stands in providing interior habitat depends on the effects of edge on the microclimate of the stand. In the Black Hills, forest interior is defined as that portion of a forest stand more than 300 feet from an opening.

### **Forest Supervisor**

Official responsible for administering the Black Hills National Forest. The Forest Supervisor reports to the Regional Forester.

### **Forest System Roads**

Roads that are part of the Forest Development Transportation System that includes all existing and planned roads as well as other special and terminal facilities designated as part of the Forest Development Transportation System.

### **Forest Visitor Map**

Forest Visitor Maps depict detailed information concerning National Forests, National Recreation Areas, and Special Interest Areas. The format is an entire National Forest or entire subdivision thereof. Forest Visitor Maps are available to the public at a price that reimburses the cost of printing and distribution.

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**Forested Area**

Land at least 10 percent of which is occupied by trees of any size or formerly having had such tree cover and not currently developed for non-forest use. Lands developed for non-forest use include areas for crops; improved pastures; residential or administrative areas; improved roads of any width; and adjoining road clearing and powerline clearing of any width.

**Forwarders (Timber Management)**

Mechanized equipment used to move logs from the stump to the landing on slopes generally less than 35 percent.

**Four-wheel-drive Way (Roads)**

A Forest development road included in the Forest Development Transportation Plan and commonly used by four-wheel-drive, high-clearance vehicles with a width greater than 50 inches.

**Fragmentation (Wildlife)**

Habitat fragmentation is a process that occurs wherever a large, contiguous habitat is transformed into smaller patches isolated from each other by a landscape matrix unlike the original. This matrix can differ from the original habitat in either composition or structure. The crucial point is that fragmentation functions as either a partial or total barrier to dispersal for species associated with the original habitat. A clear threat to population viability occurs when the process of fragmentation isolates populations.

**FSH**

Forest Service Handbook.

**FSM**

Forest Service Manual.

**Fuel Breaks**

Generally wide strips of land 60 to 1,000 feet in width on which native vegetation has been modified so that fires burning into them can be more readily controlled. Some fuel breaks contain fire lines such as roads or hand lines that can be widened.

**Fuel Continuity**

Degree or extent of continuous or uninterrupted distribution of fuel particles (surface or aerial) in a fuel bed that affects a fire's ability to sustain combustion and spread.

**Fuel complex**

The combination of ground, surface, and canopy fuel strata.

**Fuel Loading**

The volume of the available or burnable fuels in a specified area, usually expressed in tons per acre.

### **Fuel model**

A set of surface fuel bed characteristics (load and surface-area-to-volume-ratio by size class, heat content, and depth) organized for input to a fire model. Standard fuel models (Anderson 1982) have been stylized to represent specific fuel conditions.

### **Fuel Reduction Treatments**

Prescribed burn, precommercial thin, mechanical fuel treatment, and product other than log (POL) sales.

### **Fuel Treatment**

Any manipulation or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control, including lopping, chipping, crushing, piling, and burning (synonym for fuel modification).

### **Fuels**

The organic materials that will support the start and spread of a fire: duff, litter, grass, weeds, forbs, brush, trees, and dead woody materials.

### **Fuelwood**

Round, split, or sawed wood cut into short lengths for burning as fuel.

### **FY**

(See “Fiscal Year.”)

### **General Mining Law**

(See “Mining Law of 1872.”)

### **Genetic Diversity**

The genetic variation present in individuals, populations, or species.

### **Geologic Hazard Rating**

(See “Mass Wasting.”)

### **Geophysical Prospecting**

Prospecting for minerals, mineral fuels, or the nature of the earth’s materials by measuring the various physical properties of the rocks and interpreting the results in terms of geologic feature or the economic deposits sought. Physical measurements are taken at the surface concerning the differences in the density, electrical resistance or magnetic properties of the rocks. There are four main methods employed in geophysical prospecting: gravitational; magnetic; electrical; and seismic with several modifications of each.

### **Geothermal Resources**

Of or relating to the heat of the earth’s interior.

### **Goal**

Broad, general statement that encompasses the desired future conditions that the U.S. Forest Service seeks to attain.

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**Grant**

A grant passes some estate or interest, corporeal or incorporeal, in the lands that it embraces. To give or permit as a right or privilege, such as a grant of route authority.

**Grass/Forb, Grass/Forb Stage (Structural Stage 1)**

(See Structural Stages - Structural Stage 1)

**Grazing Capacity**

The maximum number of livestock under management that a given range area is capable of supporting within guidelines found in the allotment management plan (AMP).

**Green Slash**

Wood residue left on the ground after logging that still contains moist phloem tissue and wood and may be susceptible to attack by bark beetles, generally within 1 year after cutting.

**Ground fire**

A slow-burning, smoldering fire in ground fuels. Contrast with surface fire.

**Ground fuels**

Fuels that lie beneath surface fuels, such as organic soils, duff, de-composing litter, buried logs, roots, and the below-surface portion of stumps. Compare with surface fuels.

**Groundwater**

Water within the earth that supplies wells and springs. Specifically, water in the zone of saturation where all openings in soils and rocks are filled; the upper surface level forms the water table.

**Group Selection**

A silvicultural system in which the canopy is opened by group cuttings so as to create fairly evenly distributed gaps that are enlarged by subsequent cuttings as the groups of regeneration develop; regeneration is mainly natural though young seedlings may be planted and the resultant crop is more or less uneven-aged.

**Growing Season**

The months of the year a species of vegetation grows.

**Guideline**

Preferred or advisable courses of action; deviations from guidelines are permissible, but the responsible official must document the reasons for the deviation.

**HABCAP Model**

(See "Black Hills HABCAP Model.")

**Habitat**

The place where an organism (plant or animal) lives (Odum 1971).

### **Habitat Capability (Wildlife)**

The capacity of a certain vegetative community to support selected wildlife species for all or a part of its life cycle. Habitat capability is estimated using the Black Hills HABCAP model.

### **Habitat Effectiveness (Elk and Deer)**

As used in this document, habitat effectiveness refers to the capability of an area to support elk or deer based on forage, cover, open roads, and the spatial distribution of the three factors regardless of the time of year.

### **Half Lives**

The time required for half of a chemical agent to undergo decay to a neutral chemical compound.

### **Hard Snags (Vegetation)**

A dead or partially dead tree composed primarily of sound wood, particularly sound sapwood.

### **Hardened Sites (Recreation)**

Developed recreation sites where techniques have been used to protect natural resources (soil, water, vegetation, etc.) from overuse. For example, vehicles may be confined to roads by barriers, or gravel and pavement may be placed on roads, walkways, and under picnic tables.

### **Hardwood**

Pertains to broadleaf trees or shrubs.

### **Hazard (Fire Management)**

(See “Fire Protection Assessment.”)

### **Hazard Reduction**

(See “Fuel Treatment.”)

### **Heavy Fuels**

Fuels of large diameter, usually 3 inches or more, like snags, logs, large branchwood, and peat that ignite and burn more slowly than fine fuels (synonym for coarse fuels).

### **Herbaceous Fuels**

Grasses, forbs, and other plants that contain little woody tissue.

### **Herbicide**

A chemical substance used for killing or suppressing plants.

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**Heritage Resources**

The physical remains (including but not limited to artifacts, structures, landscape modifications, rock art, trails, or roads) and conceptual content or context (as a setting for legendary, historic, or prehistoric events, such as a sacred area for native peoples) of an area.

**Hiding Cover (Wildlife)**

Vegetation capable of hiding 90 percent of a standing adult deer or elk from the view of a human at a distance equal to or less than 200 feet.

**High Edge Contrast (Vegetation)**

Found at the junction of two structurally different communities or stands; for instance, a mature forest and grass/forb community.

**High Risk (Fuels)**

(See “Fire Risk.”)

**Historic Property**

Any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register. This term includes artifacts, records, and remains related to and located within such properties.

**Home Ignition Zone**

The home and its immediate surroundings. The characteristics of a home and its immediate surroundings determine a home’s ignition potential during wildland fires. The home ignition zone generally extends to a few tens of meters from the structure. The ignition potential within the home ignition zone is home ignitability.

**Horizontal Diversity (Vegetation)**

The diversity in an area that results from the number and arrangement of plant communities or successional stages or both; the greater their number, the greater the horizontal diversity. Also, the greater the amount of edge, the higher the degree of horizontal diversity (Thomas 1979).

**Human-caused Risk (Fire Management)**

A number related to the potential of fire starts originating from human activities to which a protection unit will be exposed during the rating period.

**IDT**

(See “Interdisciplinary Team.”)

**Ignition (Fire Management)**

The initiation of combustion.

**Implementation**

Those activities necessary to initiate the actions in the approved land and resource management plan (LRMP).

### **Independent crown fire**

A crown fire that spreads without the aid of a supporting surface fire.

### **Indigenous Species**

Animals or plants that originated in the area in which they are found; for example, animals or plants that were not introduced after frontier settlement of the Black Hills and that naturally occur in the Black Hills.

### **Indirect Effects**

Results of an action occurring at a location other than where the action takes place and/or later in time but in the reasonably foreseeable future.

### **Infrastructure**

The facilities, utilities, and transportation systems needed to meet public and administrative needs.

### **Ingress**

The act or right to enter; access; entrance.

### **Inherent Scenic Attractiveness**

The scenic importance of landscapes based on human perceptions of the intrinsic beauty of landform, rockform, waterform, and vegetation pattern. Reflects varying visual perception attributes of variety, unity, vividness, intactness, coherence, mystery, uniqueness, harmony, balance, and pattern. They are classified as

**Class A-Distinctive:** Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality. These landscapes have strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

**Class B-Typical:** Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide ordinary or common scenic quality. These landscapes have generally positive, yet common attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance. Normally, they would form the basic matrix within the ecological unit.

**Class C-Indistinctive:** Areas where landform, vegetation patterns, water characteristics, and cultural land use have low scenic quality. Often water and rockform of any consequence are missing in the Class C landscapes. These landscapes have weak or missing attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

### **Inholdings**

Lands within the proclaimed boundaries of a National Forest that are owned by some other agency, organization, or individual.

### **Insect and Disease Epidemics**

High population levels of insect-or-disease pests that cause substantial injury to plant or animal hosts.

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**Insect and Disease Suppression**

Management practices applied to reduce insect-and-disease pest populations or damage. Insect- and-disease suppression includes actions taken to limit the spread of pests or to reduce susceptibility of hosts in imminent danger of being attacked.

**Insecticide**

A chemical or biological agent formulated to kill insects.

**Instream Fisheries Habitat**

Cumulative physical (e.g., temperature or channel morphology) and biological (e.g., invertebrate communities or vegetation) components that affect the quality of stream habitat. This instream habitat is also affected by inputs from the adjacent terrestrial ecosystems.

**Instream Flow**

The amount of water set aside and not available for development. It is water left in the river or stream for beneficial use by fish and wildlife and for consideration of water quality, recreation, and aesthetic requirements. As a beneficial use, instream water is a demand that must compete with other uses, such as irrigation, mining, and municipal water supply.

**Integrated Pest Management (IPM)**

A process for evaluating and selecting a program from available techniques to reduce pest populations in an ecologically, economically, and socially acceptable manner. Programs may include one or a combination of available techniques that may include the use of pesticides, cultural, or silvicultural treatments; biological control agents; host resistance; genetic control; mechanical destruction or trapping; and behavioral chemicals including attractants and repellants.

**Intensity (Fire Management)**

How hot a fire is. Specifically, a measure (in BTUs per foot per second) of the energy released per unit of time in an area of actively burning fire. The amount of heat released per foot of fire front per second.

**Interdisciplinary Team (IDT)**

A group of individuals with different specialized training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one discipline is sufficiently broad to adequately solve the problem. Through interaction, participants bring different points of view and a broader range of expertise to bear on the problem.

**Interest (Landownership)**

A general term to denote a right, claim, title, or legal share in real estate.

**Intermediate Cut (Timber Management)**

Any removal of trees from a stand between the time of their regeneration and the final harvest.

### **Intermittent crown fire**

A crown fire that alternates in space and time between active crowning and surface fire or passive crowning. See also passive crown fire.

### **Intermittent Service (Roads)**

A facility developed and operated for periodic service and closed for more than one year between periods of use.

### **Intermittent Stream**

1. A stream that flows only at certain times of the year, as when it receives water from springs or from a surface source, such as melting snow.
2. A stream that does not flow continuously, as when water losses from evaporation or seepage exceed the available streamflow.

### **Intermodal Surface Transportation Efficiency Act (ISTEA)**

On December 18, 1991, the President signed the Intermodal Surface Transportation Efficiency Act (ISTEA), which provides authorizations for highways, highway safety, and mass transportation for the ensuing 6 years. The purpose of the Act is “to develop a National Intermodal Transportation System that is economically efficient, environmentally sound, provides for the foundation for the Nation to compete in the global economy and will move people and goods in an energy efficient manner.”

### **IPM**

(See “Integrated Pest Management.”)

### **Ips (Pine Engraver Beetle)**

A genus of bark beetle that feeds beneath the bark of pines, typically killing branches, tops, or entire trees. These beetles often breed in logging slash or attack stressed and injured pines.

### **Irregular Shelterwood (Timber Management)**

A silvicultural method characterized by a relatively long regeneration period during which some of the trees of the overwood are retained to complete growth to optimum size and quality. The trees reserved may be the best and most vigorous of the dominants, as in typical shelterwood cuttings. They may also be trees of the lower crown classes that have grown slowly in the past but are capable of rapid growth if released. In either case, the reserved trees tend to hamper the development of regeneration beneath them so that the new stand will have a distribution of ages broader than that of truly even-aged stands.

### **Irretrievable, Irretrievable Commitments**

Applies to losses of production or use of renewable natural resources for a period of time. For example, road construction leads to an irretrievable loss of the productivity of the land under which the road is located. If the road is later obliterated, the land may eventually become productive again. The production lost is irretrievable, but the action is not irreversible.

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**Irreversible, Irreversible Commitments**

Decisions causing changes that cannot be reversed. For example, if an area is mined, that area cannot, at a later date, be allocated to some other resource activity, such as Wilderness. Once mined, the ability of that area to meet Wilderness criteria, for instance, has been irreversibly lost. Irreversible commitments often apply to non-renewable resources, such as minerals and heritage resources.

**Jurisdiction (Transportation)**

The legal right to control or regulate use of a transportation facility. Jurisdiction requires authority but not necessarily ownership. The authority to construct or maintain a road may be derived from fee title and easement or some other similar method.

**Karst**

The word karst is taken from an area in Yugoslavia, where karst features were first documented. Karst is a terrain, underlain by limestone, in which the topography is chiefly formed by the dissolving of rock and which is commonly characterized by closed depressions, subterranean drainage, and caves. Features found in karst terrain include rises, swallowholes, sinking streams, blind valleys, karst valleys, cave springs, and other karst features.

**Key Grazing Areas**

That portion of a pasture or grazing unit which, because of its nature, location, and grazing use, serves to control the pattern of grazing use for the pasture as a whole.

**Key Management Species (Grazing)**

Major forage species on which management should be based.

**Known Geologic Structures (KGS)**

A trap in which an accumulation of oil and gas has been discovered by drilling and is determined to be productive. Its limits include all acreage that is presumptively productive.

**Ladder Fuels:** Shrubs and young trees that provide continuous fine material from the forest floor into the crowns of dominant trees.

**Land Exchange**

The conveyance of non-federal land or interests to the United States in exchange for National Forest System (NFS) land or interests in land.

**Land Treatments (Watershed)**

Human actions that disturb vegetation, groundcover, or soil.

**Land Unit (Watershed)**

A mapped land type polygon; or a mapped soil unit.

**Landline (Land Survey)**

For Forest Plan purposes, National Forest property boundaries.

### **Landing (Timber Management)**

Any place where round timber is assembled for further transport.

### **Landscape (Silviculture)**

The primary unit of analysis for silviculture. A landscape for purposes of silviculture is a diversity unit or a sixth-level watershed.

### **Landscape Character**

Particular attributes, qualities, and traits of a landscape that give it an image and make it identifiable or unique. Valued landscape character creates a “sense of place” and describes the image of an area. The landscape character provides a reference for defining the inherent scenic attractiveness classes.

### **Landscape Scale**

A heterogenous land area composed of a cluster of interacting ecosystems that are repeated in similar form throughout. Landscapes vary in size from many thousands of acres to only a few acres.

### **Late Succession**

Ecosystems distinguished by very large old trees and related structural features (Mehl 1992). This term encompasses the later stages of stand development that typically differ from earlier stages in structure, composition, function, and other attributes.

There are two types of late-successional ponderosa pine defined for the Black Hills. The first type, open-canopy late-successional ponderosa pine, occurs where periodic, low-intensity fires have been part of the ecosystem. These late-successional stands would consist of clumps or groups of trees with grasses in the openings between the clumps. They would contain large old trees with open branches, irregular, and flattened crowns. The clumps or groups of trees would contain little down dead material and few small trees.

The second type, closed-canopy late-successional ponderosa pine occurs where periodic, low-intensity high-frequency fires have not been a significant part of the ecosystem. These stands would contain large old trees with open branches and irregular crowns. The stands would have multiple canopy layers made up of various-aged trees. They would be well stocked with trees and contain standing dead and down trees.

### **Leaders (Vegetation)**

The terminal topmost shoots characteristic of the growth of certain plants or trees.

### **Leasable Minerals**

Those minerals or materials designated as leasable under the Minerals Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium, sodium minerals, and oil and gas. Geothermal resources are also leasable under the Geothermal Stream Act of 1970.

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**Litter (Vegetation)**

A surface layer of loose organic debris consisting of freshly fallen or slightly decomposed organic materials.

**Local Roads**

(See “Road Functional Classification.”)

**Locatable Minerals**

Minerals or mineral materials subject to claim and development under the Mining Law of 1872, as amended. Generally includes metallic minerals, such as gold and silver, and other materials not subject to lease or sale, like some bentonites, limestone, talc, zeolites, etc.

**Location (Minerals)**

Perfecting the right to a mining claim by discovery of a valuable mineral, monumenting the corners, completing discovery work, posting a notice of location, and recording the claim.

**Logging Debris**

Unmerchantable tree parts like crowns, rotted logs, and uprooted stumps that remain after harvest.

**Logging Slash**

The wood residue left on the ground after harvesting. It includes unused logs, uprooted stumps, broken or uprooted stems, tops, branches, and leaves.

**Log Landing**

(See “Landing.”)

**Long-term (Transportation) Facility**

A facility developed and operated for long-term land management and resource utilization needs and which may be operated for constant or intermittent service.

**Lopped, Lopping (Timber Management)**

Cutting off one or more branches of a tree, whether standing, dead, or fallen.

**Lopping and Scattering**

Lopping logging debris and spreading it more or less evenly on the ground.

**Low Risk (Fuels)**

(See “Fire Risk.”)

**Maintenance (Transportation Management)**

The upkeep of the entire Forest Development Transportation Facility, including surfaces and shoulders, parking and side areas, structures, and such traffic control devices as are necessary for its safe and efficient utilization.

### **Maintenance Levels**

(See “Road Maintenance Level.”)

### **Managed Season (Recreation)**

That period of time during which developed recreational sites are open for public use, with routine maintenance, cleanup, and operation on a scheduled basis.

### **Management Indicators (Wildlife)**

Plant or animal species or habitat components selected in a planning process that are used to monitor the effects of planned management activities on populations of wildlife and fish, including those that are socially or economically important.

### **Management Objectives**

Clearly stated objectives describing the intended post-management status of an area. Typically, objectives are disclosed in the NEPA documentation.

### **Mass Movement**

Down-slope movement of a portion of the land’s surface, such as a single landslide or the gradual, simultaneous downhill movement of the whole mass of loose earthen material on a slope face.

### **Mass Movement Potential**

The potential for gravity-induced movement over a portion of land surface. Mass movement is an interaction of geologic material, topography, climate, and vegetation.

### **Mass Wasting**

A general term for a variety of processes by which large masses of earthen material are moved by gravity either slowly or quickly from one place to another. Slow displacements include slumping and soil creep. Rapid movements include slope failures, landslides, debris flows, and rock slides. Ratings:

**Slight:** Management practices are not limited by special precautions to maintain slope stability. Slope gradients are under 40 percent.

**Moderate:** Management practices that disturb the land surface will be limited by precautionary measures to maintain slope stability. Slope gradients are usually in the 40 to 60 percent range. However, there is no evidence of past slope failure.

**Severe:** Management practices are severely limited. Slope gradients are more than 60 percent and evidence of past mass wasting usually exists. Special on-site investigations are required prior to ground-disturbing activities, and higher costs for design and construction can be anticipated to achieve adequate resource protection.

### **MBF**

Thousand board feet.

### **MCF**

Thousand cubic feet.

**Meadow**

An area of perennial, herbaceous vegetation, usually grass or grass-like. A natural opening in a forest, generally at higher elevations, that produces exceptional levels of herbaceous plants, which is usually a consequence of high soil/water content or a perched water table. Generally, a prairie grassland will occupy a convex surface while a meadow will occupy a concave surface.

**Medium Edge Contrast**

Found at the junction of two communities or stands that are structurally similar; for instance, mature pine and poles, meadows and shrubs.

**Memorandum of Understanding (MOU)**

A legal agreement between the Forest Service, other agencies, private parties, or individuals resulting from consultation between agencies that states specific measures the agencies will follow to accomplish a project. A memorandum of understanding is not a fund-obligating document.

**Mesic**

Having, characterized by, or adapted to a moderate or a well-balanced supply of moisture; “mesic habitats” are forest that is more moist and cool. Mesic habitats are usually located along drainages, at the base of slopes, or on northerly exposures. [antonyms are xeric, hydric.]

**Microclimate**

The climate conditions within a small or local habitat that is well defined. The climate of a small, specific place within an area as contrasted with the climate of the entire area. For example, the microclimate of a riparian area is different from that of the surrounding coniferous forest because of increased humidity, a higher rate of transpiration, more shade, and increased air movement.

**Midstory (Vegetation)**

Vegetative layer 10 to 40 feet tall between the overstory trees and ground layer. May consist of trees and/or shrubs.

**Mineral Development**

The activities and facilities associated with extracting mineral deposits.

**Mineral Entry**

Claiming public lands administered by the Forest Service under the Mining Law of 1872 for the purpose of exploiting minerals. May also refer to mineral exploration and development under the mineral leasing laws and the Material Sale Act of 1947.

**Mineral Withdrawal**

The exclusion of locatable mineral deposits from mineral entry on areas required for administrative sites by the Forest Service and other areas highly valued by the public. Public lands withdrawn from entry under the General Mining Laws and/or the Mineral Leasing Laws.

### **Mineral Material**

Common varieties of sand, building stone, gravel, clay, rock, etc., obtainable under the Minerals Act of 1947, as amended.

### **Mineral Material Permit**

A document used for sale transactions of common variety, salable minerals.

### **Mineral Potential**

The classification of lands according to the probability of undiscovered mineral resources, delineated as to the type of mineral, the extent of the expected deposit, and the likelihood of its occurrence. The likelihood of occurrence for oil and gas is classified as follows:

**High potential:** Describes the geologic environment that is highly favorable for discovering oil-and-gas resources. The area is on or near a producing field and evidence exists that the geologic conditions of the reservoir, source, and trap necessary for the accumulation of oil and gas are present.

**Moderate potential:** Refers to the environment that is favorable for the occurrence of undiscovered oil-and-gas resources; however, one of the geologic conditions necessary for the accumulation of oil or gas may be absent.

**Low potential:** Refers to an environment that is not favorable for the accumulation of oil and gas as indicated by geologic, geochemical, and geophysical characteristics. Evidence exists that one of the geologic conditions necessary for the accumulation of oil or gas is absent.

**Unknown potential:** Refers to the region for which geologic information is insufficient to otherwise categorize potential. This category should be limited to specific areas for which there is a true lack of data and should not be used as a substitute for performing the interpretation.

### **Minimum Stocking Standard (Timber Management)**

The stocking that must be present on regenerated areas before a new stand can be considered established. Minimum stocking is normally stated in terms of number of trees per acre and tree-stem heights by species.

### **Mining Claims**

That portion of the public estate held for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested in the locator of a deposit.

### **Mining Law of 1872**

Provides for claiming and gaining title to locatable minerals on public lands. Also referred to as the “General Mining Law” or “Mining Law.”

### **Mitigation**

Includes avoiding the impact altogether by not taking certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impacts by repairing, rehabilitating or restoring the

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affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments.

**Mitigation (Heritage Resources)**

Actions taken to reduce or eliminate effects caused to heritage resources. Avoidance is not considered a mitigation measure.

**Mixed Severity Fire Regime:** Regime in which fires either cause selective mortality in dominant vegetation, depending on different species' susceptibility to fire, or vary between understory and stand replacement.

**MMBF**

Million board feet.

**MMCF**

Million cubic feet.

**Moderate Risk (Fuels)**

(See "Fire Risk.")

**Moisture Regime (Soils)**

The presence or absence of groundwater or water held at a tension of less than 15 bars in the soil or in specified horizons by periods of the year.

**Monitoring**

The sample collection and analysis of information regarding Forest Plan management practices to determine how well objectives have been met as well as the effects of those management practices on the land and environment.

**Monitoring Precision and Reliability**

The precision and reliability with which each Forest program or activity is monitored depend on the particular program or activity to be monitored.

**Precision and reliability are described as follows:**

**Class A:** These methods are generally well accepted for modeling or measuring the resource. The methods used produce repeatable results and are often statistically valid. Reliability, precision and accuracy are very good. The cost of conducting these measurements is higher than other methods. These methods are often quantitative in nature.

**Class B:** These methods of measurement are valuable tools that are based on a variety of techniques. These tools include project records, communications, on-site ocular estimates, and less formal measurements like pace transects, informal visitor surveys, air photo interpretation and other similar types of assessments. Reliability, accuracy, and precision are good but usually less than Class A. Class B methods are often qualitative in nature, but still provide valuable information on the status of resource conditions.

### **Most Efficient Level (Fire Management)**

A term to describe the most efficient combination of fire program activities within the context of suppression, prevention, and fuel treatment that meets direction in the Forest Plan. Fire-management activities that define the Most Efficient Level (MEL) are arrived at through analysis procedures outlined within the National Fire Management Analysis System (NFMAS). The analysis identifies the alternative or combination of alternatives that results in a most efficient fire-management program.

### **Motorized Recreation**

A recreational opportunity provided through the use of a motorized vehicle. This includes travel on and off highways, Forest roads, and four-wheel-drive primitive roads and trails. Travel regulations may be established for the protection of forest resources, to minimize use conflicts, and to promote user safety.

### **MOU**

(See “Memorandum of Understanding.”)

### **Multi-storied Stands (Vegetation)**

Plant communities having two or more recognizable canopy layers or height levels.

### **Multiple Use**

According to the Multiple-use Sustained-yield Act of 1960, multiple use is the management of all the various renewable surface resources of the National Forest System (NFS) so that they are utilized in the combination that will best meet the needs of the American people; such management makes the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions. Some lands will be used for less than all of the resources. Harmonious and coordinated management of the various resources is employed, each with the other, without impairment of the productivity of the land. Consideration is given to the relative values of the various resources and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

### **Mycorrhizae**

The phenomenon of the probably symbiotic or least non-parasitic association between the root or rhizome of a green plant and a fungus. Also, the structure so produced; for example, by the combination of the modified rootlet with fungal tissue.

### **National Environmental Policy Act of 1969 (NEPA)**

An act declaring a national policy to encourage productive harmony between people and their environment; to promote efforts that will prevent or eliminate damage to the environment and the biosphere and simulate the health and welfare of people; to enrich the understanding of the ecological systems and natural resources important to the nation; and to establish a Council on Environmental Quality.

**National Fire Management Analysis System (NFMAS)**

A broad umbrella process to help fire managers identify the most efficient fire program meeting the direction in the Forest Plan. This includes information for the planning record on program composition, annual programmed costs, emergency firefighting costs, expected resource impacts, and net value change.

**National Forest Management Act (NFMA)**

A law passed in 1976 amending the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest Plans and the preparation of regulations to guide that development.

**National Forest Road and Trails Act Easements**

Easements granted to public road agencies for the construction, maintenance, and jurisdiction of public roads over National Forest System (NFS) lands.

**National Forest System (NFS) Land**

Federal lands designated by Executive Order or statute as National Forests, National Grasslands or Purchase Units, or other lands under the administration of the Forest Service.

**National Register of Historic Places (NRHP)**

A list of heritage resources that have local, state, or national significance. The list is maintained by the Secretary of the Interior.

**Native Seed**

Seeds of plants considered indigenous to the Black Hills.

**Native Species**

(See “Indigenous Species.”)

**Natural Background Water Pollutants**

A nutrient or substance that may occur naturally in water resources. Although generally present in insignificant amounts, a nutrient or substance could cause undesired environmental effects if the amount present were to increase.

**Natural Fuels**

Fuels resulting from natural processes and not directly generated or altered by land-management practices (compare activity fuels).

**Natural Regeneration**

The renewal of a tree crop by natural means without seeding or planting done by people. The new crop is grown from self-sown seed or by vegetative means, such as root suckers.

**NCSS (National Cooperative Soil Survey)**

A nationwide partnership of federal, regional, state and local agencies, and institutions. This partnership works together to cooperatively investigate, inventory, document, classify, and interpret soils; and disseminate, publish, and promote use of information about soils of the United States.

### **Nest Initiation**

Beginning stages of nesting. May include courtship behavior, nest territory defense, and/or nest building.

### **Net Public Benefit**

The overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index.

### **No Adverse Effect (Heritage Resources)**

When the effect on a heritage resource would not be considered harmful to those characteristics that qualify the property for inclusion in the National Register.

### **No Surface Occupancy (NSO) (Oil and Gas)**

A fluid mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the land surface to protect special values or uses. The NSO stipulation includes stipulations that may have been worded as “No Surface Use/Occupancy,” “No Surface Disturbance,” “Conditional NSO” and “Surface Disturbance or Surface Occupancy Restriction by Location.” The lessee may exploit the oil-and-gas or geothermal resources under leases restricted by this stipulation through use of directional drilling from sites outside the no-surface-occupancy area.

### **Non-motorized Activities**

Activities that do not incorporate the use of a motor, engine, or other non-living power source. Non-motorized activities exclude such machines as aircraft, hovercraft, motorboats, automobiles, motor bikes, snowmobiles, bulldozers, chainsaws, rock drills, and generators.

### **Non-native Species**

Animals or plants not endemic to the Black Hills that were introduced following frontier settlement. Non-native species are also called “exotic species.”

### **Non-target Vegetation (Integrated Pest Management)**

Plants that are not the object of control and management actions.

### **Non-withdrawn Lands (Minerals)**

Lands that are not withdrawn from mineral entry under the mining laws or other executive or administrative rulings.

### **Notice of Intent (Minerals)**

Written notice to the affected Ranger District by those who intend to engage in mining activity on the Forest of proposed prospecting, exploration, mining, and mineral processing activities.

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**Notice to Lessees, Transferees and Operators**

Written notice issued by an authorized Forest officer. Notices to Lessees, Transferees, and Operators implement regulations and serve as instructions on specific items of importance within a Forest Service Region, National Forest, or Ranger District.

**Noxious Weeds**

Those plant species designated as weeds by federal or state laws. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage; poisonous; toxic; parasitic; a carrier or host for serious insects or diseases; and generally non-native.

**Objective**

Concise statement of desired measurable results intended to promote achievement of specific goals. Attainment of objectives is limited by the application of standards and guidelines.

**Obligate (Wetland or Upland)**

See Wetland Indicator Category

**Obliteration (Transportation)**

The reclamation and/or restoration of the land occupied by a transportation facility for purposes other than transportation.

**Off-Highway Vehicle (OHV)**

Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, snow, ice, marsh, swampland, or other natural terrain.

**Off-Road Vehicle (ORV)**

(See “Off-Highway Vehicle.”)

**OHV**

(See “Off-Highway Vehicle.”)

**Oil-and-gas Lease**

An oil-and-gas lease grants the right to explore, develop, extract, and dispose of a specific mineral or minerals in lands covered by the lease, subject to various terms and conditions. Oil-and-gas leases are issued by the Bureau of Land Management (BLM), Department of Interior. On National Forest System lands (NFS), leases are issued with Forest Service direction and concurrence.

**Openings (Tree Canopy)**

The hole created by removing the majority of the tree canopy. This includes the harvesting of the majority of trees in a given area.

**ORV**

Off-Road Vehicle. (See “Off-Highway Vehicle.”)

### **Outputs**

The goods, end products, or services purchased, consumed, or utilized directly by people. Outputs are goods, services, products, and concerns produced by activities that are measurable and capable of being used to determine the effectiveness of programs and activities in meeting objectives. A broad term used to describe any result, product, or service that a process or activity actually produces.

### **Overstory (Biological Diversity)**

The portion of vegetation in a forest forming the uppermost foliage layer.

### **Paleontological Resources**

The remains or traces of an organism or assemblage of organisms that have been preserved by natural processes in the earth's crust. Minerals, such as oil and gas, coal, oil shale, bitumen, lignite, asphaltum and tar sands, phosphate, limestone, diatomaceous earth, uranium, and vanadium, while they may be of biologic origin, are not here considered "fossils." Fossils of scientific value may occur within or in association with such materials.

### **Passive crown fire**

A crown fire in which individual or small groups of trees torch out, but solid flaming in the canopy cannot be maintained except for short periods. Passive crown fire encompasses a wide range of crown fire behavior from the occasional torching of an isolated tree to a nearly active crown fire. Also called torching and candling. See also intermittent crown fire.

### **Passport in Time**

A nationwide Forest Service program that provides opportunities for "hands-on" public involvement in heritage resources management, such as archeological excavations, historical research, and oral history collection.

### **Peak Flow**

The highest discharge of water recorded over a specified period of time at a given stream location. Often thought of in terms of spring snowmelt and/or summer, fall, or winter rainy-season flows. Also called "maximum flow."

### **Permitted Grazing**

Use of a National Forest System (NFS) range allotment under the terms of a grazing permit.

### **Person-Year**

The amount of work done by one person working yearlong or several people working a portion of a year. (Approximately 2,000 working hours.)

### **Persons-At-One-Time (PAOT)**

A recreational-capacity measurement term indicating the number of people who can use a facility or area at one time.

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**Pesticide**

A chemical agent formulated to kill or suppress insects, plants, or animals.

**pH**

The degree of water acidity or alkalinity.

**Pheromone Traps (Integrated Pest Management)**

Containers designed to attract and catch or kill a particular insect species through use of a lure containing a chemical attractant scent.

**Pine Engraver Beetle**

(See “Ips.”)

**Piling and Burning (Timber Management)**

Piling slash resulting from logging and subsequently burning individual piles.

**Plant Associations**

A grouping of plants that has reached dynamic equilibrium with the local environmental conditions and is equivalent to climax. On site, there is no evidence of replacement by other dominant plant species (and there is no evidence of serious disturbance.)

**Plant Communities**

Assemblage of plant species living in an area. It is an organized unit to the extent that it has characteristics in addition to the individuals and populations and functions as a unit.

**Pollution**

The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.

**Potential Natural Community (PNC)**

A taxonomic unit of vegetation classification. The biotic community that would be established under present environmental conditions if all successional sequences were completed without additional human-caused disturbance. Natural disturbances, such as drought; flood; wildfire; grazing by native fauna; insects; and disease, are inherent in the development of potential natural communities that may include naturalized, non-native species.

**Potential Natural Vegetation (PNV)**

A historical term originally defined by A.W. Kuchler as the stable vegetation community, which could occupy a site under current climatic conditions without further influence by humans. Often used interchangeably with “Potential Natural Community.”

**Prairie**

A tract of level to hilly land that has a dominance of grasses and forbs; has a scarcity of shrubs; and is treeless. The natural plant community consists of various mixtures of tall-, mid-, and short-growing native species.

### **Precambrian**

Period of geologic time extending from more than 3,600 years ago to about 570 million years ago.

### **Pre-commercial Cutting**

(See “Thinning.”)

### **Preparation Cut (Silviculture)**

A timber harvest method that removes trees near the end of a rotation so as to open the canopy and enlarge the crowns of seed bearers to improve conditions for seed production and natural regeneration, as typically in a shelterwood method.

### **Preparedness Level (Fire Management)**

Planning levels of suppression readiness dependent on fire activity, fuel moisture, drought conditions, fire weather, fire danger, and resources deployed or available. There are five preparedness levels with level five being the most active state of readiness.

### **Prescribed Burning**

Controlled application of fire to wildland fuels in either their natural or modified state under specified environmental conditions that allows the fire to be confined to a predetermined area and at the same time produce the fireline intensity and rate of spread required to attain planned resource management objectives (synonym for controlled burning).

### **Prescribed Fire**

Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met, prior to ignition.

### **Prescription (Fire Management)**

A written statement defining objectives to be attained, as well as temperature; humidity; wind direction and wind speed; fuel-moisture content; and soil moisture, under which the fire will be allowed to burn, generally expressed as acceptable ranges of the various indices, and the limit of the geographic area to be covered.

### **Present Net Value (PNV)**

The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

### **President’s Advisory Council on Historic Preservation (ACHP)**

An advisory group appointed by the President of the United States to aid the State Historic Preservation Officer and federal agencies in complying with the National Historic Preservation Act.

### **Pre-suppression (Fire Management)**

Activities required in advance of fire occurrence to ensure an effective suppression action. It includes recruiting and training fire forces; planning and organizing attack methods;

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procuring and maintaining fire equipment; and maintaining structural improvements necessary for the fire program.

**Probability**

A number representing the chance that a given event will occur. The range is from 0% for an impossible event, to 100 percent for an inevitable event.

**Products Other than Logs (POL), Products Other Than Sawlogs, Products Other Than Sawtimber**

Products such as posts, poles, and fiber from trees or parts of trees less than sawlog size. POL usually include trees greater than 5 inches diameter breast height (dbh) (4.5 feet from ground level) and less than 7.9 inches diameter breast height (dbh), with tops of trees greater than 4 inches to less than 6 inches in diameter.

**Program Development and Budgeting**

The process through which activities for the Forest are proposed and funded.

**Project**

One or more site-specific activities designed to accomplish a specific on-the-ground purpose or result. Projects are tiered to the Forest Plan and will have further site-specific analysis.

**Proper Functioning Condition (PFC)**

The minimum standard for assessing the condition of riparian-wetland areas. PFC is a qualitative method based on quantitative science and can be used for determining and prioritizing the type and location of quantitative inventory or monitoring desired to meet specific objectives.

**Pruning**

Cutting away of superfluous growth from any plant so as to improve its growth.

**Public Access**

Usually refers to a road or trail route over which a public agency has secured a right-of-way for public use.

**Puncheon (Transportation)**

Puncheon walkways and bridges are typically built for trails out of native logs for the purpose of crossing wet areas. Sill logs are laid perpendicular to the centerline. Stringers are placed on top of the sill logs. Split-log decking may or may not be installed on top of the stringers.

**Quadratic Mean Diameter (Silviculture)**

The diameter of the average tree in a stand determined from the basal area. Basal area divided by the number of trees per acre equals the average basal area per tree (ABAT).

### **Range Analysis**

Systematic acquisition and evaluation of rangeland resource data needed for allotment management planning and overall land management.

### **Range Condition**

1. A rangeland is considered to be in satisfactory condition when the desired condition is being met or short-term objectives are being achieved (vegetation management status) to move the rangeland toward the desired condition (trend). Unsatisfactory condition is when the desired condition is not being met and short-term objectives are not being achieved (vegetation management status) to move the rangeland toward the desired condition (trend).
2. Historically, range condition has usually been defined in one of two ways: a generic term relating to present status of a unit of range in terms of specific values or potentials. Specific values or potentials must be stated; or the present state of vegetation of a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for the site.

### **Ranger District**

Administrative subdivisions of the Forest supervised by a District Ranger who reports to the Forest Supervisor.

### **Raptor Habitat**

Habitat required by hawks, falcons or owls, especially for nesting.

### **Raptor Nests**

Any nest of eagles, hawks, falcons, or owls.

### **Rate of Spread (Fire Management)**

Relative activity of a fire in extending its horizontal dimensions, expressed as rate of increase of the perimeter, rate of increase in area, or rate of advance of its head, depending on the intended use of the information, generally in chains or acres per hour for a specified period in the fire's history.

### **Reasonably Foreseeable Development (RFD) (Oil and Gas)**

A projection of likely exploration, development, and production of oil and gas within a study area based on existing and credible geologic data, technology, economics, and activity trends.

### **Reclamation**

Returning disturbed lands to a form and productivity that will be ecologically balanced, often in conformity with a predetermined reclamation plan.

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**Reconstruction**

Construction activities performed on an existing facility. Reconstruction includes those activities that alter the facility from its originally constructed or subsequently reconstructed condition.

**Recreation Capacity**

The number of people who can take advantage of the supply of recreational opportunities at one time without substantially diminishing the quality of the recreation experience or the resources.

**Recreation Development Scale**

Classification using a 1 to 5 scale of the level of development in camp and picnic sites as to the types of recreational opportunities and modifications to the environment that can be expected. The scales are

1. **Minimum Site Modification:** Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials excluded. Minimum controls are subtle. Spacing informal and extended to minimize contacts between users. Motorized access not provided or permitted.
2. **Little Site Modification:** Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access provided or permitted. Primary access over primitive roads. Interpretive services informal, almost subliminal.
3. **Site Modification Moderate:** Facilities about equal for protection of site and comfort of users. Contemporary/rustic design of improvements are usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about three family units per acre. Primary access may be over high-standard roads. Interpretive services informal but generally direct.
4. **Site Heavily Modified:** Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density of three to five family units per acre. Plant materials usually native. Interpretive services often formal or structured.
5. **High Degree of Site Modification:** Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities and electrical hookups. Synthetic materials commonly used. Formal walks or surfaced trails. Regimentation of users is obvious. Access usually by high-speed highways. Development density of five or more family units per acre. Plant materials may be foreign to the environment. Formal interpretative services usually available. Designs formalized and architecture may be contemporary. Mowed lawns and clipped shrubs not unusual.

### **Recreation Opportunity**

Availability of a real choice for a user to participate in a preferred activity within a preferred setting in order to realize those experiences desired.

### **Recreation Opportunity Spectrum (ROS)**

A system for planning and managing recreational resources that categorizes recreation opportunities into seven classes. Each class is defined in terms of the degree to which it satisfies certain recreational experience needs based on the extent to which the natural environment has been modified, the type of facilities provided, the degree of outdoor skills needed to enjoy the area and the relative density of recreation use. The seven classes are

**Primitive:** Area is characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.

**Semi-primitive Non-motorized:** Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized recreation use is not permitted, but local roads used for other resource management activities may be present on a limited basis. Use of such roads is restricted to minimize impacts on recreational experience opportunities.

**Semi-primitive Motorized:** Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motor bikes is permitted.

**Roaded Natural:** Area is characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of people. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

**Roaded Natural Non-motorized:** Areas closed to motorized use yet have been heavily modified or are not large enough to be set aside as semi-primitive non-motorized.

**Rural:** Area is characterized by a natural environment that has been substantially modified by development of structures, vegetative manipulation or pastoral agricultural development. Resource modification and utilization practices may be used to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between

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users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate user densities are present away from developed sites. Facilities for intensified motorized use and parking are available.

**Urban:** Characterized by a substantially urbanized environment although the background may have natural-appearing elements. Renewable resource modification and utilization practices are often used to enhance specific recreational activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans are predominant on the site. Large numbers of users can be expected both on the site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

**Recreation Residences**

Houses or cabins on National Forest System (NFS) land under permit that are not the primary residence of the owner.

**Recreation Visitor Day (RVD)**

A unit for measuring recreational activities that aggregates 12 visitor hours. This may consist of one person for 12 hours, 12 persons for 1 hour or any equivalent combination of continuous or intermittent recreation use by individuals or groups. Recreation visitor days are used to measure recreational production or output capacity.

**Reforestation**

Reestablishment of a tree crop on forested land.

**Regeneration (Silviculture)**

The renewal of vegetation whether by natural or artificial means. Also, the new growth itself.

**Region**

An administrative unit within the National Forest System (NFS). The United States is divided into nine geographic regions. Each region has a headquarter office and is supervised by a Regional Forester. Within each region are located National Forests and other lands of the Forest Service.

**Regional Forester**

The official responsible for administering a single region.

**Rehabilitation**

Actions taken to restore or reclaim site productivity, water quality, or other values.

**Release (Silviculture)**

Freeing a tree or group of trees from more immediate competition by cutting.

**Release and Weeding**

All work done to free desirable trees, less desirable trees, or grasses, and other forms of vegetative growth from competition with overstory trees. It includes incidental disease control work and release of natural and artificial regeneration.

### **Removal Cut (Final Cut)**

A harvest method that removes the last seed-bearing trees after regeneration is considered to be established under a shelterwood method.

### **Reserves**

Areas on the Forest that are managed for dense, mature or late-successional forest conditions. These late-successional areas include Late-successional Management Areas (3.7), smaller scale stands identified in the RMRIS database (timber code 801 and 802), and other management areas that provide late-successional conditions such as wilderness (Management Area 1.1A). In Phase II Amendment Alternative 4, reserves also include all existing late-successional and dense, mature forested stands (structural stages 4C and 5).

### **Resource Value-at-risk (Fire Management)**

Fire-suppression planning tool providing a relative expression in five classes of fire effects on all resources but not the value of the resources themselves (compare values at risk).

### **Resource Values**

The tangible and intangible worth of forest resources.

### **Responsible Official**

The Forest Service employee who has the delegated authority to make a specific decision.

### **Rest Rotation (Grazing)**

An intensive system of management whereby grazing is deferred on various parts of the range during succeeding years that allows the deferred part complete rest for 1 year. Two but usually three or more separate grazing units are required.

### **Restoration (Facilities)**

Work necessary to restore a facility to the original constructed condition or to an acceptable condition concerning any damage resulting from natural or human causes that exceeds that which normally occurs during annual maintenance.

### **Retention (Vegetation Management)**

To keep the existing extent of a vegetative component. Usually refers to a species, such as aspen, birch, or bur oak.

### **Revegetation**

The reestablishment and development of a plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of reforestation or reseeding.

### **Rights-of-way**

Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project or facility passing over, upon, under, or through such land. The privilege that one person or persons particularly described may have of passing over the land of another in some particular line.

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**Rights-of-way Corridors**

A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries.

**Rill Erosion**

An erosion process during which numerous small channels several inches deep are formed; occurs mainly on bare soil.

**Riparian Area**

(See “Riparian Ecosystem.”)

**Riparian Communities**

Repeating, classified, defined, and recognizable assemblages of plant-or-animal communities associated with riparian areas.

**Riparian Communities’ Seral Stage**

Any of the transitory stages in plant community development leading up to the potential natural community defined by species composition, structure, and processes.

**Riparian Communities’ Trend**

The direction of community development in relation to the potential natural community. The trend indicates development toward the potential natural community or away from the potential natural community.

**Riparian Ecosystem**

The moist transition zone between the aquatic ecosystem and the relatively drier, more upland, terrestrial ecosystem(s). This transition zone can extend both laterally and longitudinally away from aquatic ecosystems, sometimes into headwater swales that have no defined stream channel. The riparian ecosystem is the area whose soil is relatively more moist than the adjacent upland and whose vegetation growth reflects the greater accumulation of available water.

**Risk**

The possibility of meeting danger or suffering harm. When used relative to wildland fires it refers to the probability of escape resulting in financial and ecological loss. Alternative management scenarios generate different degrees of risk and ultimately a different set of economic outcomes (Hesslin and Rideout, 1999)(See also “Fire Protection Assessment.”)

**Risk Index (Fire Management)**

A number related to the probability of an ignition of a fire (Compare “Human-caused Risk.”)

**RNA**

(See “Research Natural Area.”)

**Roads**

A general term denoting a way with at least two-wheel tracks for purposes of travel by vehicles greater than 50 inches in width.

### Road Density

Road density refers to the miles of road per square mile. There are different road densities depending on what road types are being considered. These densities include

**Forest Development Road Density:** The miles of Forest Development Roads per square mile. This is the road density of the road system managed by the Forest for resource management.

**Open Road Density:** The miles of Forest Development Road and other private and public roads and highways open for public travel.

**Wheel-track Density:** The miles of established wheel tracks per square mile. Wheel tracks are not managed as part of the Forest Development Road System and are formed by repeated travel off system roads by Forest users.

### Road Functional Classification

The way in which a road services land and resource management needs and the character of service it provides. Functional classifications for roads are forest arterial, forest collector, and forest local.

**Forest Arterial Road:** Provides service to large land areas and usually connects with public highways or other Forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. It is usually developed and operated for long-term land and resource management purposes and constant service.

**Forest Collector Road:** Serves smaller land areas than a Forest arterial road and is usually connected to a Forest arterial or public highway. Collects traffic from Forest local roads and/or terminal facilities. The location and standard are influenced by both long-term multi-resource service needs, as well as travel efficiency. May be operated for either constant or intermittent service depending on land use and resource management objectives for the area served by the facility.

**Forest Local Road:** Connects terminal facilities with Forest collector or Forest arterial roads or public highways. The location and standard are usually controlled by a specific resource activity rather than travel efficiency. Forest local roads may be developed and operated for either long- or short-term service.

### Road Maintenance Level

Defines the level of service provided by and maintenance required for a specific road consistent with road management objectives and maintenance criteria. The maintenance levels are

**Maintenance Level 1:** Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period is 1 year or longer. Basic custodial maintenance is performed.

**Maintenance Level 2:** Assigned to roads open for use by high-clearance vehicles. Passenger car traffic is not a consideration.

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**Maintenance Level 3:** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

**Maintenance Level 4:** Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds.

**Maintenance Level 5:** Assigned to roads that provide a high degree of user comfort and convenience. Normally, roads are double-laned and paved or aggregate-surfaced with dust abatement.

### **Road Prism**

Equivalent to the term “roadway.” The portion of the road within the limits of excavation and embankment, including slope rounding. A similar term is “road template,” the shape and cross-sectional dimensions of the roadway to be constructed as defined by the construction staking notes and the characteristics of the typical sections.

### **Roadside Corridors**

A passageway that frames a road or travelway. The corridor includes the viewing area and facilities, which may be within the immediate roadside area or part of a sweeping distance panorama.

### **Roadway**

(See “Road Prism.”)

### **Rocky Mountain Region**

The Forest Service organizational unit consisting of Colorado, Wyoming, part of South Dakota, Nebraska, and Kansas. Also called Region 2.

### **Rodenticide**

A chemical agent formulated to kill rodents.

### **Root Reserves**

Carbohydrates stored by perennial plants like mountain mahogany that are used in growth until photosynthesis begins.

### **ROS**

(See “Recreation Opportunity Spectrum.”)

### **Rotation, Rotation Age (Silviculture)**

The planned number of years between the formation or regeneration of a stand of trees and its final cutting at a specified age.

### **Roundwood, Roundwood Products**

Logs, bolts or other round sections cut from trees for industrial or consumer uses (pulpwood, fuelwood, poles, posts, etc.)

### **RPA Assessment and Program**

The RPA Assessment is prepared every 10 years and describes the potential of the nation’s forests and rangelands to provide a sustained flow of goods and services. The

RPA Program is prepared every 5 years to chart the long-term course of Forest Service management of the National Forests, assistance to state and private landowners, and research. An RPA Assessment is prepared in response to Sections 3 and 4 of the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA).

### **Running crown fire**

See active crown fire.

### **Rural Development**

A partnership or program designed to enrich the cultural life, to enhance the environment, to provide employment, and to improve living conditions of rural America.

### **Salable Minerals**

Salable minerals include common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay. In general, these minerals are of widespread occurrence and are of relatively low unit value. They are generally used for construction materials and for road building purposes.

### **Salvage Harvest**

Removal of damaged, dead or dying trees resulting from insect and disease epidemics, wildfire, or storms to recover logs before they have no commercial value for production.

### **Salvage of Dead Material**

(See “Salvage Harvest.”)

### **Sanitation Cutting, Sanitation Harvest (Silviculture)**

The removal of trees occupied by insect or disease pests to reduce pest populations and limit their spread.

### **Saturated Soils**

Soil condition during which all the spaces between soil particles are filled with water.

### **Sawtimber**

Trees suitable in size and quality for producing logs that can be processed into lumber. For planning purposes, trees with an 8-inch diameter or more are classified as sawtimber.

### **Scarify**

To abrade, scratch, or modify the surface of the ground to expose mineral soil.

### **Scenery**

The composition of basic terrain, geologic features, water features, vegetative patterns, and landrise effects that typify a land unit and influence the visual appeal the unit may have for visitors.

### **Scenery Management**

The art and science of arranging, planning, and designing landscape attributes relative to the appearance of places and expanses in outdoor settings.

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**Scenic Class**

Scenic classes measure the relative importance or value of discrete landscape areas having similar characteristics of scenic attractiveness and landscape visibility. Scenic classes are used during forest planning to compare the value of scenery with the value of other resources, such as timber, wildlife, late succession, or minerals. The higher the scenic class, the more important it is to maintain the highest scenic value. Scenic classes are determined and mapped by combining the three classes of scenic attractiveness with the distance zones and concern levels of landscape visibility. A numerical value of 1 to 7 is assigned to Forest lands. Generally, scenic classes 1-2 have high public value; classes 3-5 have moderate value; and classes 6 and 7 have low value.

**Scenic Easement**

An interest in the land that allows the easement holder specified uses or rights without actual ownership of the land; in this case, control of the use of land adjacent to public highways, parks, and rivers. It may provide something attractive to look at within the easement area, an open area to look through to see something attractive beyond the easement itself, or a screen to block out an unsightly view beyond the easement area.

**Scenic Integrity (Existing or Objective)**

State of naturalness or conversely the state of disturbance created by human activities or alteration. Integrity is stated in degrees of deviation from the existing landscape character in a national forest. It is the measure of the degree to which a landscape is visually perceived to be complete. The highest scenic integrity ratings are given to those landscapes that have little or no deviation from the character valued by constituents for its aesthetic appeal. Scenic integrity is used to describe an existing situation, standard for management, or desired future conditions.

**Very High:** A scenic integrity level that generally provides for ecological change only.

**High:** A scenic integrity level meaning human activities are not visually evident. In high scenic integrity areas, activities may only repeat attributes of form, line, color, and texture found in the existing landscape character.

**Moderate:** A scenic integrity level that refers to landscapes where the valued landscape character “appears slightly altered.” Noticeable deviations must remain visually subordinate to the landscape character being viewed.

**Low:** A scenic integrity referring to the landscapes where the valued landscape character “appears moderately altered.” Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, effect, and pattern of natural opening, vegetative type changes, or architectural styles within or outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

**Very Low:** A scenic integrity level that refers to landscapes where the valued landscape character “appears heavily altered.” Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such

as size, shape, edge effect, and pattern of natural openings, vegetative type changes, or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition.

**Unacceptable Low:** A scenic integrity level that refers to landscapes where the valued landscape character being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any line, form, color, texture, pattern, or scale from the landscape character. Landscapes at this level of integrity need rehabilitation. This level should only be used to inventory existing integrity. It must not be used as a management objective.

### **Season-long Grazing**

Allowing livestock to graze a single pasture throughout one grazing season.

### **Second Growth (Silviculture)**

Forest growth that has become established after some disturbance with the previous forest stand, such as cutting, serious fire, or insect attack.

### **Sediment**

Material suspended in water or that has been deposited in streams and lakes.

### **Sediment Load**

The solid material transported by a stream and expressed as the dry weight of all sediment that passes a given point in a given period of time.

### **Sediment Yield**

Amount of sediment leaving an analysis area and entering a channel.

### **Seed Cutting (Silviculture)**

A harvest method that removes all mature trees from a stand except for selected seed-bearing trees retained on the site to provide a seed source for stand regeneration. In a two-step shelterwood cutting method, the first of the shelterwood cuttings.

### **Seed Tree, Seed-tree Cutting**

Small number of seed-bearing trees left singly or in small groups after timber harvest to provide seed for regeneration of the site.

### **Seeps**

A spot where water or petroleum flows from the earth, often forming the source of a small stream.

### **Selection Cut (Silviculture)**

A harvest method that periodically removes mature trees individually or in small groups from an uneven-aged forest. By this method, both regeneration cutting and tending of immature stand components are accomplished at each entry.

### **Self-sustaining Fish Population**

A reproducing fish population that does not require supplemental hatchery stocking.

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**Sensitive Species**

Those plant and animal species identified by the Regional Forester for which population viability is a concern, as evidenced 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.

**Seral (Ecology)**

A biotic community that is in a developmental, transitory stage in an ecological succession.

**Seral Stages (Ecology)**

The sequence of a plant community's successional stages to potential natural vegetation.

**Severely Burned Soil**

A condition in which most woody debris and the entire forest floor is consumed down to bare mineral soil. Soil may have turned red due to extreme heat. Also, fine roots and organic matter are charred in the upper one-half inch of mineral soil.

**Severity**

See fire severity.

**Shelterwood, Shelterwood Method (Silviculture)**

A harvest method in which a portion of the mature stand is retained as a source of seed and/or protection during the period of regeneration. The mature stand is removed in two or more cuttings commonly termed seed cutting and removal cutting. The seed cutting may or may not be preceded by a preparatory cutting.

**Short-term Transportation Facility**

A facility developed and operated for a limited period of time that will cease to exist as a transportation facility after the purpose for which it was constructed is completed and the occupied land is reclaimed and managed for natural resource purposes.

**SHPO**

(See "State Historic Preservation Officer.")

**Significant Cave**

A cave located on National Forest System (NFS) lands that has been determined to meet the criteria in §290.3(c) or (d) and has been designated in accordance with §290.3(e).

**Significant Change (Soils)**

Change in productivity of the land as indicated by changes in soil properties that are expected to result in a reduced productive capacity over the planning horizon. Based on available research and current technology, a guideline of 15 percent reduction in inherent soil productivity potential is used as a basis for setting threshold values for measurable or observable soil properties or conditions. The threshold values, along with area extent limits, will serve as an early warning signal of reduced productive capacity. A more stringent basis than 15 percent can be used where appropriate and documented.

### **Silvicultural System**

A management process that tends, harvests, and replaces forests, resulting in a forest of distinctive form with a desired condition.

### **Silvicultural Treatment**

A management practice that utilizes a method of tree culture, harvest, or replacement (See “Single-tree Selection,” “Shelterwood Method,” “Group Selection,” “Even-aged Management,” “Uneven-aged Management,” and “Clearcutting.”)

### **Silviculture**

Generally, the science and art of tree management, based on the study of the life history and general characteristics of forest trees and stands, with particular reference to local factors; more particularly, the theory and practice of controlling the establishment, composition, constitution, and growth of forests for desired conditions.

### **Single-tree Selection (Silviculture)**

A harvest method that develops and maintains uneven-aged stands by removal of selected trees from specified age classes over the entire stand area in order to meet a predetermined goal of age distribution and species in the remaining stand.

### **Site**

An area considered in terms of its physical and/or biological environment; for example, a riparian zone, a homogenous stand of vegetation, or a campground.

### **Site Index**

A measure of the relative productive capacity of an area for growing trees. Measurement is based on height of the dominant trees in a stand at a given age.

### **Site Preparation (Silviculture)**

The activity that prepares a site for natural regeneration or the planting of seedlings. The objective is to create a favorable environment for establishing and growing the desired vegetation classes. Treatments could include chemical, mechanical, or fire.

### **Site Productivity**

Production capability of specific areas of land.

### **Skid Trails (Timber Management)**

Any way, more or less prepared, over which logs are dragged. Any road or trail leading from stump to landing.

### **Skidding (Timber Management)**

Moving logs from the stump to a collecting point.

### **Slash (Timber Management)**

The residue left on the ground after harvesting, sanitation operations, windstorm, or fire. It includes such material as unutilized logs, uprooted stumps, broken or uprooted stems, tops, branches, and leaves.

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**Slope-stability Examinations**

Used to look at the resistance of an inclined surface or areas of suspected mass-wasting potential.

**Snag (Vegetation)**

Standing dead tree or standing portion from which at least the leaves and smaller branches have fallen; often called a stub if it is less than 20 feet tall (Thomas 1979).

**Snag-dependent Species**

(See “Cavity Nesting Species.”)

**Soft Snags (Vegetation)**

A snag composed primarily of wood in advanced stages of decay and deterioration, particularly in the sapwood (outer) portions; generally there are no live branches on the snag.

**Softwood**

A conventional term for both the timber and the trees belonging to the evergreen group, as the pine, spruce, fir, etc.

**Soil Compaction**

A physical change in soil properties that results in a decrease in porosity and an increase in soil-bulk density and strength.

**Soil Erosion**

The detachment and movement of soil from the land surface by water or wind. Soil erosion and sediment are not the same (See “Sediment.”)

**Soil Productivity**

The inherent capacity of a soil to support the growth of specified plants, plant communities, or a sequence of plant communities. Soil productivity may be expressed in terms of volume or weight/unit area/year, percent plant cover, or other measures of biomass accumulation.

**Soil Surveys**

The systematic examination, description, classification, and mapping of soils in an area.

**Special Places**

Those specific locations and expanses in outdoor settings that have attractions and features that are identified as unique, different, distinctive, and extraordinary to people. Special places may range from small areas such as a particular fallen log to large areas such as a landscape unit.

**Special-use Application**

A written request for use of National Forest System (NFS) lands.

### **Special-use Authorization, Special-use Permits**

A permit, term permit, lease, or easement that allows occupancy or use rights or privileges on National Forest System (NFS) lands.

### **Special Uses**

Improvements or activities owned or carried out by private individuals, corporations, or other business entities on National Forest System (NFS) lands under the authorization of a permit.

### **Split-estate Lands (Minerals)**

Lands that do not have both the mineral rights and the surface owned by one party. The most common split estate is federal ownership of mineral rights on lands to which someone else holds ownership. In such instances, the federal government can lease the oil-and-gas rights without the surface owner's consent. Other split-estate lands may be federal ownership with the mineral rights owned by a private party or federal ownership with some percentage of the mineral rights owned by a private party.

### **Spot Road Improvement**

Repair to a relatively short section of road or spot to rectify an unsafe condition or to improve a poorly constructed, high-maintenance situation.

### **Stabilization (Heritage Resources)**

The process of arresting the deterioration of a damaged heritage resource in order to prevent further damage from occurring. Stabilization may include reconstructing portions of the heritage resource.

### **Standard**

Mandatory courses of action; any deviation from standards requires amendment of the LRMP.

### **Stand (Vegetation)**

A community, particularly of trees, possessing sufficient uniformity as regards to vegetation type, age class, risk class, vigor, size class, and stocking class that distinguishes it from adjacent communities and thus forms a management or silvicultural unity. Within a stand, a dominant or primary species and age class is identifiable, but there may be inclusions or clusters of different species or ages. R2 RIS stands are typically greater than 10 acres. IRI stands are typically greater than 5 acres.

### **Stand-replacing Fire**

A fire that kills all or most living overstory trees in a forest and initiates secondary succession or regrowth.

### **Stand Replacement Fire Regime**

Regime in which fires kill or top-kill aboveground parts of the dominant vegetation, changing the aboveground structure substantially. Approximately 80 percent or more of the aboveground dominant vegetation is either consumed or dies as a result of fires. Applies to forests, shrublands, and grasslands.

**Stand Risk Rating (Insects)**

A ranking of relative forest stand conditions that reflects the degree of susceptibility to attack by a particular insect species and the potential level of damage if an outbreak occurs. It does not indicate where or when an infestation will actually occur. For mountain pine beetles in ponderosa pine, a computer model exists to determine low-, medium- and high-risk stands based on measures of stand structure, average basal area, and average tree diameter.

**State Historic Preservation Officer (SHPO)**

A person appointed by a state's governor to administer the State Historic Preservation Program.

**Stipulation (Oil-and-gas)**

A provision that modifies standard lease rights attached to and made a part of the lease.

**Stream Health**

The condition of a stream relative to robust health for that stream type and landscape, considering indicators such as channel pattern; slope; particle size; pool frequency and depth; bank vegetation; and woody debris that reflect the stability and habitat quality of the stream.

**Stream Level**

A classification of the relative position of streams in a channel network. First-level streams drain into the ocean. Second-level streams are tributaries to the first-level streams. For example, the Mississippi is a first-level stream; the Missouri is a second-level stream.

**Stream Order**

A classification of the relative position of streams in a channel network. (On the Black Hills National Forest, the classification includes ephemeral, intermittent, and perennial streams.) Each non-branching channel segment is designated as a first-order stream. The channel segment below the confluence of two first-order streams is designated a second-order stream. A second-order stream has only first-order tributaries. The channel segment below the confluence of two second-order streams is designated a third-order stream.

**Stream Type**

A class of stream reach having a discrete combination of valley geomorphology and climate, flow regime, stream size, and channel morphology; and differing from other stream types in its ability to support aquatic biota and respond to management.

**Structural Stages (Vegetation)**

Any of several developmental stages of tree stands described in terms of tree size and the extent of canopy closure they create. They include

**Structural Stage 1 (Grass/Forb):** The grass/forb stage was historically a product of fires, windthrow or similar disturbances. Under forest management, this stage can be created through harvesting. This stage is dominated by grasses and forbs lasting until tree seedlings become established.

**Structural Stage 2 (Shrub/Seedling):** The shrub/seedling stage consists of shrubs such as chokecherry, rose and serviceberry along with tree seedlings. A stand remains in Stage 2 until the tree seedlings reach one inch diameter at breast height (DBH), which should take less than a decade.

**Structural Stage 3 (Sapling/Pole):** The sapling/pole stage consists of trees with stems one to nine inches DBH. This stage typically persists up to 30 years to age 70. Less than 40 percent canopy closure is 3A; 40 to less than 70 percent canopy closures is 3B; and greater than 70 percent canopy closure is 3C. Understory production is inversely related to overstory pine canopy cover.

**Structural Stage 4 (Mature):** The mature stage begins when trees reach the 9-inch DBH class. Trees remain in this stage until they are about 160 years old. As with Structural Stage 3, understory productivity depends upon the overstory canopy cover. Less than 40 percent canopy closure is 4A; 40 to less than 70 percent canopy closures is 4B; and greater than 70 percent canopy closure is 4C. The sizes of trees in this stage will vary depending upon growing-site potential and the density of the stand.

**Structural Stage 5 (Late Succession):** This structural stage is characterized by very large trees (16+ inches DBH). Trees are at least 160 years in age; ponderosa pine that reach this age are commonly referred to as “yellow barks.” Late succession ponderosa pine may occur in dense stands, but may also grow in the open or in “park-like” stands (Mehl 1992).

### **Structure Ignition Zone**

See Home Ignition Zone.

### **Subdivisions**

Areas of previously undeveloped land divided into individual home sites and/or blocks of lots.

### **Successional Stages (Seral Stages)**

The relatively transitory communities that replace one another during development toward a potential natural community.

### **Suitability**

The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

### **Sundry Notice (Oil and Gas)**

Standard form to notify and/or approve well operations subsequent to Application to Permit to Drill in accordance with Forest Service regulations.

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**Superior Trees**

Trees selected for their desirable traits, such as height, growth, and form.

**Suppress a Fire**

To extinguish a fire or contain it within specified boundaries.

**Suppression**

(See “Fire Suppression” and “Insect and Disease Suppression.”)

**Suspended Sediment**

The very fine soil particles that remain in suspension in water for a considerable period of time without contact with the stream’s or river’s channel bottom.

**Surface fire**

A fire spreading through surface fuels.

**Surface fuels**

Needles, leaves, grass, forbs, dead and down branches and boles, stumps, shrubs, and short trees.

**Sustained Yield**

The amount of renewable resources that can be produced continuously at a given intensity of management.

**Tailings (Minerals)**

The parts or a part of any incoherent or fluid material separated as refuse or separately treated as inferior in quality or value; leaving; remainders; dregs. The sand, gravel, and cobbles that pass through the sluices in hydraulic mining were formerly generally designated as tailings, but of late years in states and U.S. legislative documents they have been called mining debris or simply debris.

**Talus Slopes**

The accumulation of broken rocks that occurs at the base of cliffs or other steep slopes.

**Temporary Facility**

Any structure or other human-made improvement that can be readily and completely dismantled and removed from the site when the authorized use terminates.

**Temporary Roads**

(See “Short-term Transportation Facility.”)

**Tentatively Suitable (Timber)**

Lands which do not fall within categories 36 CFR 219.14(a)(1)-(4) but which for allocation reasons are not for the planning period part of the suitable base or ASQ.

**Thermal Cover (Wildlife)**

Cover used by animals to ameliorate the effects of weather. Optimally, thermal cover is provided by a stand of coniferous trees, 30 to 60 acres in size, at least 40 feet tall, with a

canopy cover of at least 70 percent. South of Highway 16, thermal cover may be provided by shorter trees due to poorer site indices.

### **Thinning (Silviculture)**

The practice of removing some of the trees in a stand to meet desired conditions. Two types of thinning may be done:

**Pre-commercial, Non-commercial:** Removing trees that are too small to make a merchantable product.

**Commercial:** Removing trees that have reached sufficient size to be manufactured into a product and to improve tree spacing and promote more rapid growth.

### **Threatened Species**

Any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range and that has been designated in the Federal Register by the Secretary of Interior as such.

### **Three-step Shelterwood (Silviculture)**

A harvest method that provides a source of seed and/or protection for regeneration; the old crop (shelterwood) is removed in three successive shelterwood cuttings usually termed preparation, seed, and overstory removal cuts.

### **Timber**

A general term applied to tree stands that provide a wood-fiber product.

### **Timber Production**

The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use except fuelwood.

### **Timber Stand Improvement (TSI)**

The elimination or suppression of the less desirable vegetation in favor of the more desirable tree growth, such as thinning, cleaning, weeding, and release cuttings.

### **Timing Limitation (Seasonal Restriction)**

Prohibits surface use during specified time periods to protect identified resource values. The stipulation does not apply to the operation and maintenance of production facilities unless the findings analysis demonstrates the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

### **Title Claim**

A claim of land as a person's own, based on any reasonable evidence that establishes the person's actual use of the land as though the person had obtained ownership in fee. A claim of land as a person's own based on any reasonable evidence that establishes the person's actual use of the land as though the person had full title thereto from the time the person obtained ownership of the abutting land.

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**Torching Index:** The open (6.1-m/20 ft.) windspeed at which crown fire activity can initiate for the specified fire environment.

**Traditional Practitioners**

American Indians who practice traditional cultural lifeways and belief systems.

**Traffic Service Level (TSL)**

A road's significant traffic characteristics and operating conditions. The levels reflect a number of factors, such as speed, travel time, traffic interruptions, freedom to maneuver, safe driving and comfort, convenience, and operating costs. These factors, in turn, affect design elements, such as number of lanes, turnouts, pacing, lane widths, type of driving surface, sight distances, design speed, clearance, horizontal and vertical alignment, curve widening, and turnarounds.

**Trail**

A general term denoting a way usually less than 50 inches wide for purposes of travel by foot, stock, or trail vehicle.

**Trailheads**

The parking, signing, and other facilities available at the beginning of a trail.

**Transportation Facility**

Any developed facility to enhance or allow travel between two points. Transportation facilities include airports, highways, trails, railroads, and other facilities.

**Transportation System**

All roads needed to manage and administer Forest resources. A road network.

**Transportation/Utility Corridor**

A linear strip of land identified for the present location of transportation or utility rights-of-way within its boundaries.

**Travel Corridor**

A strip of land that includes up to a maximum of 1,000 feet for major roads (500 feet either side of the road's centerline) or 500 feet for major trails (250 feet either side of the trail's centerline); travel corridors form a passageway that allows travelers to experience and interact with the quality and character of the landscape.

**Travel Management**

Travel management is the movement of people and products to and through national forests and grasslands. It connects many different varieties of users and multiple uses on National Forest System (NFS) lands.

**Travel Order**

A travel management decision issued by the responsible official to restrict, prohibit, or allow the use of a described area or facility to entry or mode of travel.

### **Treated Area**

Area on which management such as timber harvesting or prescribed burning occurs.

### **Tree Improvement**

(See “Timber Stand Improvement.”)

### **Tree Size**

Small (sapling). The majority of tree stocking is in seedlings and saplings. Two-thirds of the stockable portions of the site have at least 200 seedlings and saplings per acre (15 square feet/seedling) or if aspen cover type, 300 seedlings and saplings per acre (12 square feet/seedling). Of that group, most of the trees are sapling size (1-4.9 inches in diameter).

### **Two-step Shelterwood (Silviculture)**

A harvest method that provides a source of seed and/or protection for regeneration; the old crop (shelterwood) is removed in two successive shelterwood cuttings, usually termed seed and overstory removal cuts.

### **Uncharacteristic Wildfire Effects**

An increase in wildfire size, severity and resistance to control, and the associated impact to people and property, compared to that which occurred in the native system.

### **Understory (Vegetation)**

The lowest layer of vegetation in a forest or shrub community composed of grass, forbs, shrubs, and trees less than 10 feet tall. Vegetation growing under the tree canopy.

### **Uneven-aged (Silviculture)**

A forested area composed of intermingled trees that differ markedly in age. Normally three or more age classes are represented.

### **Uneven-aged Management (Silviculture)**

The application of a combination of actions needed to simultaneously maintain tall, continuous cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to be retained within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection.

### **Utilization Levels (Range)**

The portion of the current year’s forage production by weight consumed or trampled by livestock. Utilization levels are usually expressed as a percentage.

### **Utilization Standards (Timber)**

Standards guiding the removal of timber. They are measured in terms of diameter at breast height (dbh) and top of the tree inside the bark (the top diameter inside the bark or dib) and the percentages of “soundness” of the wood.

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**Valid Existing Rights (Minerals)**

Legal interest that attaches to a land or mineral estate and that cannot be divested from the estate until that interest expires or is relinquished.

**Value (Fire Management)**

(See “Fire Protection Assessment.”)

**Values at Risk (Fire Management)**

Any or all natural resources, improvements, or other values that may be jeopardized if a fire occurs (Compare “Resource Values-at-risk.”)

**Vegetative Buffer Strips**

Strips of grass or other erosion-resisting vegetation between areas of ground disturbance and areas needing protection from sedimentation.

**Vegetative Management, Vegetative Manipulation, Vegetative Treatment**

Any activities undertaken to modify the existing condition of the vegetation.

**Vertical Diversity**

The diversity in an area that results from the complexity of the above-ground structure of the vegetation; has two or more layers; the more tiers of vegetation or the more diverse the species makeup, or both, the higher the degree of vertical diversity.

**Viable Population**

Group of individuals of a particular species that produces enough offspring for long-term persistence and adaptation of the species or population in a given place.

36 CFR 219.19 defines a viable population for planning purposes as one that has the estimated numbers and distribution of reproductive individuals to insure that a continued viable population is well distributed in the planning area. Planning area is further defined by 36 CFR 219.3 as the “area of the National Forest System covered by a regional guide or forest plan.” Direction from the Forest Service Manual (FSM) defines a viable population as one that has the estimated numbers and distribution of reproductive individuals to ensure the continued existence of the species throughout its existing range (or range required to meet recovery for listed species) within the planning area.

**Viewshed**

Total visible area from a single observer position or the total visible area from multiple observer positions. Viewsheds are accumulated seen areas from highways, trails, campgrounds, towns, cities, or other view locations. Examples are corridors, feature, or basin viewsheds.

**Visual Absorption Capability**

Refers to a relative measure of the ability of a tract of land to withstand management manipulations without affecting its visual character. Assessment of visual absorptive capability provides an objective basis for predicting whether management manipulations of the landscape will meet predetermined scenic integrity objectives or how difficult is

will be to meet such objectives. It can be used to predict achievable scenic condition levels resulting from known management activities in a landscape. Visual Absorption Capability is rated as high, moderate, or low.

### **Waiver (Oil and Gas)**

Permanent exemption from a lease stipulation. The stipulation no longer applies anywhere within the leasehold.

### **Walk-in Fishery**

Areas managed for semi-primitive, non-motorized access to fishing in order to protect riparian ecosystems. Areas managed in such a manner will be designated on the recreation map and at the specific sites.

### **Waste Dumps (Minerals)**

The area where the overburden or non-ore material is placed. This material is derived from materials removed in gaining access to the targeted ore. Any dirt or rock that has been removed from its original location by mining operations.

### **Water Influence Zone**

The land next to streams and lakes where vegetation plays a major role in sustaining the long-term integrity of aquatic ecosystems. Includes the geomorphic floodplain, riparian ecosystem, and inner gorge, and has a minimum horizontal width (from top of each bank) of 100 feet or the mean height of mature dominant late-seral vegetation, whichever is greater.

### **Water Rights**

Rights given by state and federal governments for the diversion and use of water.

### **Watershed**

The area of land bounded by a divide that drains water, sediment, and dissolved materials to a common outlet at some point along a stream channel or to a lake, reservoir, or other body of water. Also called drainage basin or catchment.

### **Watershed Level**

The number assigned to an entire drainage basin contributing to the stream segment of a given level and bearing an identical designation; for example, a first-level watershed contains all the drainage area of a first-level stream (See "Stream Level.")

**6th Level Watersheds:** A watershed coded with a 12-digit code, typically 10,000 to 30,000 acres in size.

### **Waters of the United States**

Waters used for navigation and all other waters such as lakes, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, and their tributaries.

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**Water Table**

The upper surface of the groundwater or that level below which the soil is saturated with water.

**Water-use Facilities**

Facilities located in or near the stream channel. Water-use facilities include stockponds; dams; pipes; and water diversion ditches.

**Water Yield**

23. The runoff from a watershed, including groundwater outflow.

24. The measured output of water, usually measured in acre-feet. This water does not necessarily leave the watershed.

**Water Yield Treatments**

Land management methods that affect the amount and/or timing of water yield. For example, certain harvest methods increase the likelihood that there will be increased water yield. This water may percolate into the groundwater system, find its way to stream channels, or be consumed by vegetation. Other management approaches, such as protecting and enhancing riparian areas, increase the likelihood that water flow will be sustained for a longer period of time.

**Weeding (Silviculture)**

A silvicultural operation eliminating or suppressing undesirable vegetation, mainly herbaceous, during the seedling stage of a forest crop so as to reduce competition with the seedling stand.

**Wetlands**

Those areas that are inundated by surface water or groundwater with a frequency sufficient to support and under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.

**Wetland Indicator Category**

**National Indicators** reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetlands versus non-wetland across the entire distribution of the species. A frequency, for example, of 67%-99% (Facultative Wetland) means that 67%-99% of sample plots containing the species randomly selected across the range of the species would be wetland.

When two indicators are given, they reflect the range from the lowest to the highest frequency of occurrence in wetlands across the regions in which the species is found. A positive (+) or negative (-) sign was used with the Facultative Indicator categories to more specifically define the regional frequency of occurrence in wetlands. The positive sign indicates a frequency toward the higher end of the category (more frequently found in wetlands), and a negative sign indicates a frequency toward the lower end of the category (less frequently

found in wetlands). A question mark (?) following a National Indicator denotes a tentative assignment based on the botanical literature and not confirmed by regional review.

**Regional Indicators** express the estimated probability (likelihood) of a species occurring in wetlands versus non-wetlands in the region. Regional Indicators reflect the unanimous agreement of the Regional Interagency Review Panel. An asterisk (\*) following a regional Indicator identifies tentative assignments based on limited information from which to determine the indicator status.

The wetland indicator categories should not be equated to degrees of wetness. Many obligate wetland species occur in permanently or semi-permanently flooded wetlands, but a number of obligates also occur in and some are restricted to wetlands which are only temporarily or seasonally flooded. The facultative upland species include a diverse collection of plants, which range from weedy species adapted to exist in a number of environmentally stressful or disturbed sites (including wetlands), to species in which a portion of the gene pool (an ecotype) always occurs in wetlands. Both the weedy and ecotype representatives of the facultative upland category occur in seasonally and semi-permanently flooded wetlands.

<b>Wetland Type</b>	<b>Comment</b>
Obligate Wetland	Occurs almost always (estimated probability 99%) under natural conditions in wetlands.
Facultative Wetland	Usually occurs in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
Facultative	Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
Facultative Upland	Usually occurs in non-wetlands (estimated probability 67%-99%), but occasionally found on wetlands (estimated probability 1%-33%).
Obligate Upland	Occurs in wetlands in another region, but occurs almost always (estimated probability 99%) under natural conditions in non-wetlands in the regions specified. If a species does not occur in wetlands in any region, it is not on the National List.
No agreement	The regional panel was not able to reach a unanimous decision on this species.
No indicator	Insufficient information was available to determine an indicator status.
No occurrence	The species does not occur in that region.

**Wild and Scenic Rivers**

Rivers or sections of rivers designated by Congressional actions under the 1968 Wild and Scenic Rivers Act, as wild, scenic or recreational by an act of the legislature of the state or states through which they flow. Wild and Scenic Rivers may be classified and administered under one or more of the following categories:

**Wild River Areas:** Rivers or sections of rivers that are free of impoundments with watersheds still largely primitive and shorelines largely undeveloped but accessible in places by roads.

**Scenic River Areas:** Rivers or sections of rivers that are free of impoundments with watersheds still largely undeveloped but accessible in places by roads.

**Recreational River Areas:** Rivers or sections of rivers that are readily accessible by road or railroad that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.

**Wildcat Well (Oil and Gas)**

A well drilled in an area where oil and gas have not been previously discovered.

**Wilderness**

Areas designated by Congressional action under the 1964 Wilderness Act or subsequent Acts. Wilderness is defined as undeveloped federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to be affected primarily by the forces of nature with the imprint of human activity substantially unnoticeable. Wilderness areas have outstanding opportunities for solitude or for a primitive and confined type of recreation. They include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; they may contain features of scientific, educational, scenic, or historic value as well as ecologic and geologic interest.

**Wildfire**

An unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

**Wildland Fire**

Any non-structure fire, that occurs in the wildland. Three distinct types of wildland fire have been defined and include **wildfire**, **wildland fire use** and **prescribed fire**.

**Wildland Fire Use**

The application of the appropriate management response to naturally ignited wildland fires to accomplish specific resource management objectives in predefined designated areas outlined in fire management plans.

**Wildland-Urban Interface**

In applying Title I of the HFRA, this term means:

- An area within or adjacent to an at-risk-community (ARC) identified in recommendations to the Secretary in a Community Wildfire Protection Plan

OR

- In the case of any area for which a Community Wildfire Protection Plan is not in effect:
  - an area extending ½ mile from the boundary of an at-risk community (ARC)
  - An area within 1-1/2 miles of the boundary of an at-risk community (ARC), including any land that
    - Has a sustained steep slope that creates the potential for wildland fire behavior endangering the at-risk community (ARC)
    - Has a geographic feature that aids in creating an effective firebreak, such as a road or ridgetop

OR

- Is in Condition class 3 as documented by the Secretary in the project-specific environmental analysis

AND

—An area that is adjacent to an evacuation route for an at-risk community (ARC) that the Secretary determines—in cooperation with the at-risk community (ARC)—requires hazardous-fuel reduction to provide safer evacuation.

**Windows on the Past**

A nationwide Forest Service program designed to highlight heritage resources and to provide for public education and interpretation of the nation’s heritage resources.

**Windthrow**

The act of trees being uprooted by the wind.

**Withdrawal (Minerals)**

An action that restricts the use of public land and segregates the land from the operation of some or all of the public land and mineral laws.

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# Appendix A, B and C



## Appendix A:

### Related National Goals

National Goals Relevant To Land And Resource Management periodically change. The most recent goals and policies are available at: [www.fs.fed.us/emc/](http://www.fs.fed.us/emc/) and [www.fs.fed.us/im/directives/](http://www.fs.fed.us/im/directives/) (Based On FSM Objective Statements).

## Appendix B:

### Key National and Regional Policies

The Forest Service Manual and the Forest Service Handbook are both quite lengthy -- each comprising nearly 100 three-ring binders. They are both indexed by subject matter. The nationwide direction is printed on white pages, and can be supplemented by Regional direction printed on blue pages, and Forest direction printed on green pages.

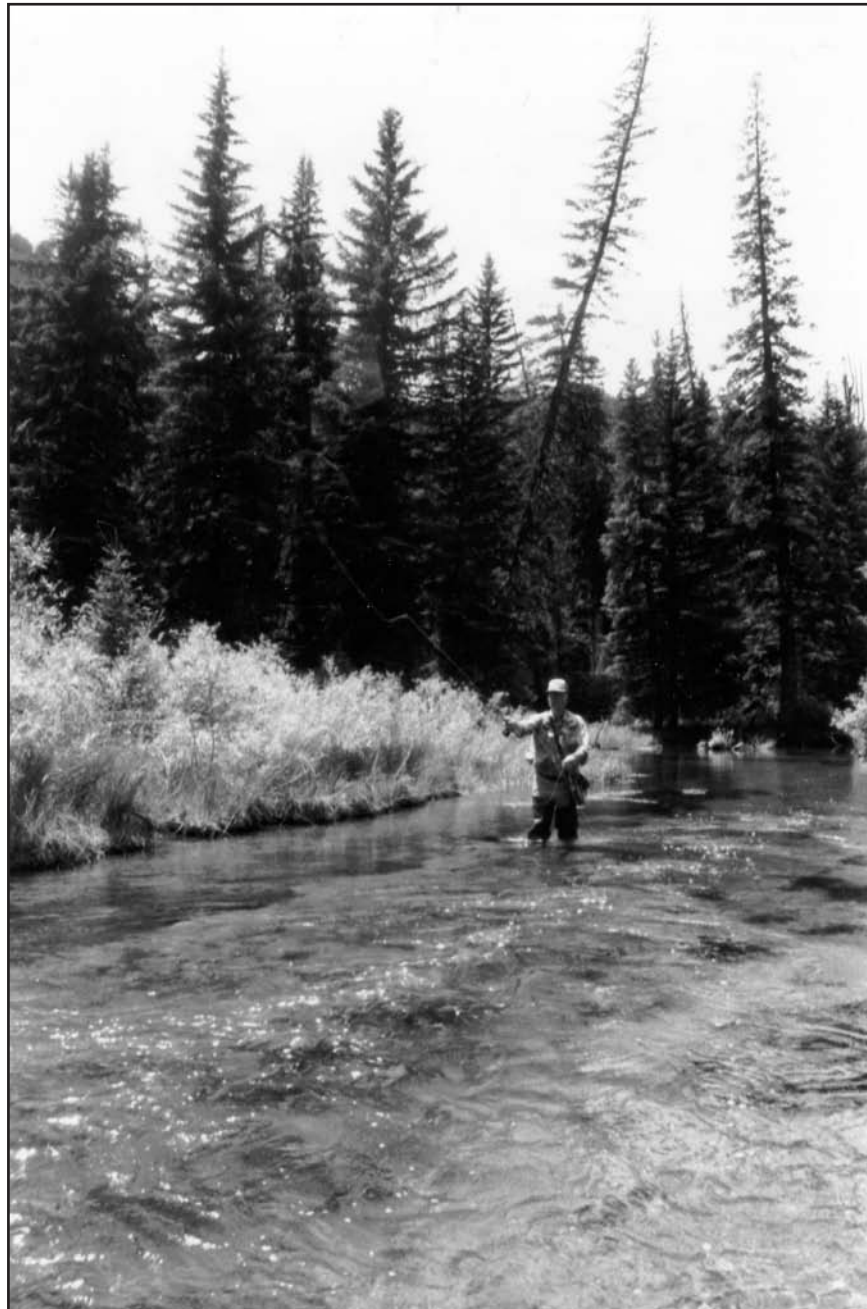
Copies of the Manual or Handbook are available at a charge of 20 cents per page, with no charge for small requests for a few pages. The public may also be added by the Washington, D.C. office to a list to receive amendments when they appear. These are also available at: <http://www.fs.fed.us/im/directives/>. For further information contact the Forest Supervisor's Office, 1019 N 5th Street, Custer, SD 57730-8214.

## Appendix C:

### Relevant Federal and State Statutes, Regulations, Executive Orders, and Agreements

The statutes, regulations, executive orders, and agreements are available at: [www.gpoaccess.gov](http://www.gpoaccess.gov).

# Appendix D



Fly-fishing in Spearfish Creek

# Appendix D:

## Summary of Best Management Practices and Best Mineral Management Practices

### Best Management Practices

A best management practice (BMP) is “a practice or combination of practices that are determined by a State after problem assessment, examination of alternative practices, and appropriate public participation to be practicable and most effective in preventing or reducing the amount of pollution generated by diffuse sources to a level compatible with water quality goals” (40 CFR 130). The emphasis of BMPs is on non-structural controls, such as vegetative buffer strips, that lead to good land stewardship and the prevention of nonpoint pollution. Structural controls, such as check dams, will be implemented when necessary.

Silvicultural BMPs address timber harvest and road building in order to control nonpoint pollution of water. BMPs govern tree felling, skidding, log landing, the construction of temporary roads, the construction and maintenance of permanent (system) roads, slash disposal and timber-stand improvements.

BMPs are:

- (1) developed by the States of South Dakota and Wyoming to ensure compliance with federal and state water-quality standards.
- (2) the minimum requirements.
- (3) incorporated by reference as guidelines into the Forest Plan. Therefore, even if either the State of South Dakota or Wyoming were to decide the use of BMPs were voluntary, the use of BMPs or similar water and soil conservation practices on Forest System lands in the Black Hills would not be voluntary.
- (4) not mitigations. BMPs are the practices Forest Service managers follow so that mitigations are not necessary.

Wyoming BMPs:

- (1) cover those concerns that need monitoring, including sediment and dissolved oxygen.
- (2) establish procedures for determining the width of riparian buffers based on slope, stream classification, channel stability, condition of fisheries habitat, and other dependent resources; they also establish those activities allowed within the buffer.
- (3) provide guidelines on the design of timber units to ensure no decrease of water quality or soil productivity, and no increase of soil erosion or sedimentation.
- (4) provide direction, such as designating skid trails, to carefully control skidding patterns; they also suggest end-lining and felling to the lead.
- (5) suggest the types of harvest methods to use in high-risk areas.
- (6) provide guidelines on the design and location of landings.
- (7) provide guidelines on erosion control along skid trails.
- (8) suggest practices to protect stream channels from management activities.
- (9) give consideration to planning road locations, including road drainage, stream protection, safety, traffic and erosion concerns.
- (10) suggest practices to prevent soil erosion and consequent water-quality degradation (such as the construction of water-bars on fire lines) descriptions of the types of burns, and emergency rehabilitation measures like seeding, fencing, and channel structures.

The USDA-Forest Service Rocky Mountain and Intermountain regions recently entered into a Memorandum of Understanding (FS Agreement #05-MU-11020000-021) with the Wyoming Department of Environmental Quality (DEQ). The purpose of the Agreement is to promote effective cooperation between the two parties to protect water quality and designated uses. In the Agreement, the Wyoming DEQ approved the use of the Forest Service-Rocky Mountain Region Watershed Conservation Practices Handbook (FSH 2509.25 R2 Amendment) as meeting the requirements of Best Management Practices in complying with the Wyoming Nonpoint Source Management Plan.

South Dakota BMPs, like Wyoming BMPs, cover road planning and location, road drainage, stream-crossing design, slope stabilization, design of logging systems, and consideration of skid-trail systems when harvesting takes place within riparian buffer zones.

The State of South Dakota has finalized and released its BMP's for silvicultural and road building practices. Both states have also prepared, or have in draft form, BMP's for grazing practices.

## **Best Mineral Management Practices**

In addition to BMPs, Best Minerals Management Practices (BMMPs) are used on the Black Hills National Forest. The Best Minerals Management Practices document provides Forest managers, government agencies and the mining industry with a uniform set of basic practices and procedures for use in maintaining environmental quality during and following mining exploration and development.

BMMPs have been developed primarily by the States of South Dakota and Wyoming, the Forest Service and the mining industry.

BMMP procedures are guidelines. When properly used, these guidelines allow mining to be accomplished while minimizing long-term adverse environmental impacts. The intent of BMMPs is to provide equivalent habitat upon completion of exploration or mining operations. BMMPs will periodically be reviewed and updated, and new management techniques will be added and described to the BMMP document as they prove successful.

BMMPs address such concerns associated with mining as stream rehabilitation, road construction and maintenance, water quality, soil management, seeding of disturbed sites, revegetation protection, small animal habitat, bird habitat, pre-mining vegetation inventories, storage of petroleum products, test drill holes and test drill hole sites.

NOTE: BMPs and BMMPs standards and guidelines are incorporated in the Forest Plan by reference.

# Appendix E

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Norbeck Wildlife Preserve



# Appendix E:

## Further Direction for Norbeck Wildlife Preserve

### Management Area Standards and Guidelines

Following is further information for some of the Standards and Guidelines in the Norbeck Wildlife Preserve (Management Areas 4.2B and 5.4A).

1. (4.2B-1502; 5.4A-1203) Prohibit mining activities in portions of the Norbeck Wildlife Preserve as specified by the Regional Forester's July 1989 prohibition and in accordance with PL-747.
  - a. Within habitat identified as critical in the July 1989 Norbeck EIS, mining operations requiring more than 2 weeks' continual work and/or involving more than 300 acres are prohibited from December 1 through July 31 annually.
  - b. Within critical wildlife habitat (as defined above), blasting may occur only between the hours of 9 a.m. and 4 p.m.
  - c. Hiding cover for wildlife will be maintained along access roads.
  - d. Topsoil must be stockpiled and/or hauled in for reclamation.
  - e. Reclamation seed mixtures will be those specified in Best Minerals Management Practices.
  - f. Apply other special requirements to protect the environment, such as riparian areas.

#### STANDARD

2. (5.4A-2503) Prevent habitat degradation adjacent to water sources.
  - a. Do not permit livestock access to created water sources except impoundments of less than three acres.
  - b. Unregulated livestock access to water impoundments behind dams must be less than 50 percent of the impoundment perimeter.
  - c. Maintain late seral stage vegetation on at least 20 to 50 percent of the area within a 100 to 400 foot radius around all created water resources, except impoundments behind dams.

#### GUIDELINE

3. (5.4A-3205). In habitat critical to wildlife, as defined in the Norbeck EIS (7/89), the season of operations is limited to August through November for mining, vegetation treatment, road work and other activities requiring more than two weeks' continual work and/or involving more than 300 acres. **GUIDELINE**

4. (5.4A-5102, 9107) The predominant Recreation Opportunity Spectrum (ROS) class is semi-primitive non-motorized. Specific areas and travel routes are open year-round or seasonally for motorized recreation. Otherwise, the area is closed to motorized recreation, including snowmobiling.

a. Off-road motorized recreation is permitted in the detached Stockade Lake tract, in portions of Norbeck north of Highway 244, and in the vicinity of Keystone.

b. Motorized recreation is permitted year-round on federal and state highways, county roads, access to private land, and FDR 345 from Highway 87 through the Iron Creek summer home group. Motorized recreation is permitted seasonally on access roads to developed recreation sites.

**GUIDELINE**

5. (4.2B-5102; 5.4A-5104) New recreation facilities and improvements are prohibited, except for interpretive or directional signing (including trail closure signs), and measures to protect public health/safety or wildlife, soil or water resources.

a. At Willow and Iron Creek horse camps, maintain existing facilities and make improvements necessary to protect resources.

b. Provide facilities at existing trailheads consistent with resource protection.

**GUIDELINE**

6. (4.2B-501; 5.4A-501) If buyer and seller are willing, use any available legal authority to acquire isolated tracts of private land which contain perennial streams and/or contribute to wildlife protection. Tracts in Sections 7, 8, 17, and 18, T2S, R5E are desirable for acquisition.

**GUIDELINE**

7. (4.2B-8101; 5.4A-8101) National Forest System lands may be conveyed out of Federal ownership under any legal authority, only if such conveyance meets specific criteria.

a. Resolves encroachment of permanent high value improvements, such as houses or other structures with permanent foundations;

b. Constitutes an administrative transfer to Mount Rushmore National Memorial of isolated tracts adjacent to the Memorial's boundary; or

c. Resolves a Forest Service administrative problem, in that it reduces the number of small, isolated tracts of National Forest System land; creates no net loss of wildlife habitat Forestwide; and maintains the integrity of the forested

setting, as viewed from the visitor center at Mount Rushmore National Memorial.

**GUIDELINE**

8. (4.2B-502; 5.4A-502) Consolidate ownership of lands generally east of the Iron Mountain Highway, specifically in Sections 8, 9, 16, 17, 20, 21, T2S, R6E under any available legal authority. **GUIDELINE**

9. (4.2B-8502; 5.4A-8502) Issue term special-use permits for Lafferty, Iron Creek, Camp Remington, Grizzly Creek and Sunday Gulch recreational residences. No new recreational residences or additions to existing structures are permitted.

**STANDARD**

- a. If a permit is relinquished without transfer, the structure will be removed and no new permit issued. **GUIDELINE**
- b. If an individual recreation residence burns or is otherwise severely damaged, it may be rebuilt, but not expanded in size. **GUIDELINE**
- c. In the event of catastrophic loss or damage to all or most summer homes in a group, do not permit rebuilding; offer in-lieu sites elsewhere if consistent with current policy. **GUIDELINE**
- d. A recreation residence permit may be terminated for cause, such as non-payment of fees, in which case the structure will be removed and no new permit issued. **GUIDELINE.**

10. (4.2B-8503; 5.4A-8503) The three outfitter-guide permits for horseback riding existing in July 1989 (Lantis -- Centennial Trail, Palmer Gulch KOA, Rushmore Resort and Campground) may continue as long as terms of the permits are met and resources can be protected. Do not expand existing permits or allow new outfitter-guide permits for any activities. **GUIDELINE**

11. (5.4A-8504) Special events may be permitted if they create no adverse effect on wildlife during critical seasons and do not conflict with direction for Black Elk Wilderness.

- a. Yearlong, maximum party size is 25 people and/or recreation stock. Party size limits of fewer than 25 people and/or recreation stock may be established, if resource conditions warrant. Parties larger than established limits may be allowed on a case-by-case basis under special use permit when compatible with wildlife needs.

**GUIDELINE**

12. (5.4A-9101) Manage road use to provide for habitat needs of wildlife and to maintain habitat effectiveness. Construct new local roads or reconstruct existing local roads needed for management activities. Physically block and revegetate local roads between periods of use.

- a. Minimize local road construction and reconstruction standards, i.e., 12-foot driving surface, 50-foot curve radius, with spot graveling only in deep, unstable soils.

**GUIDELINE**

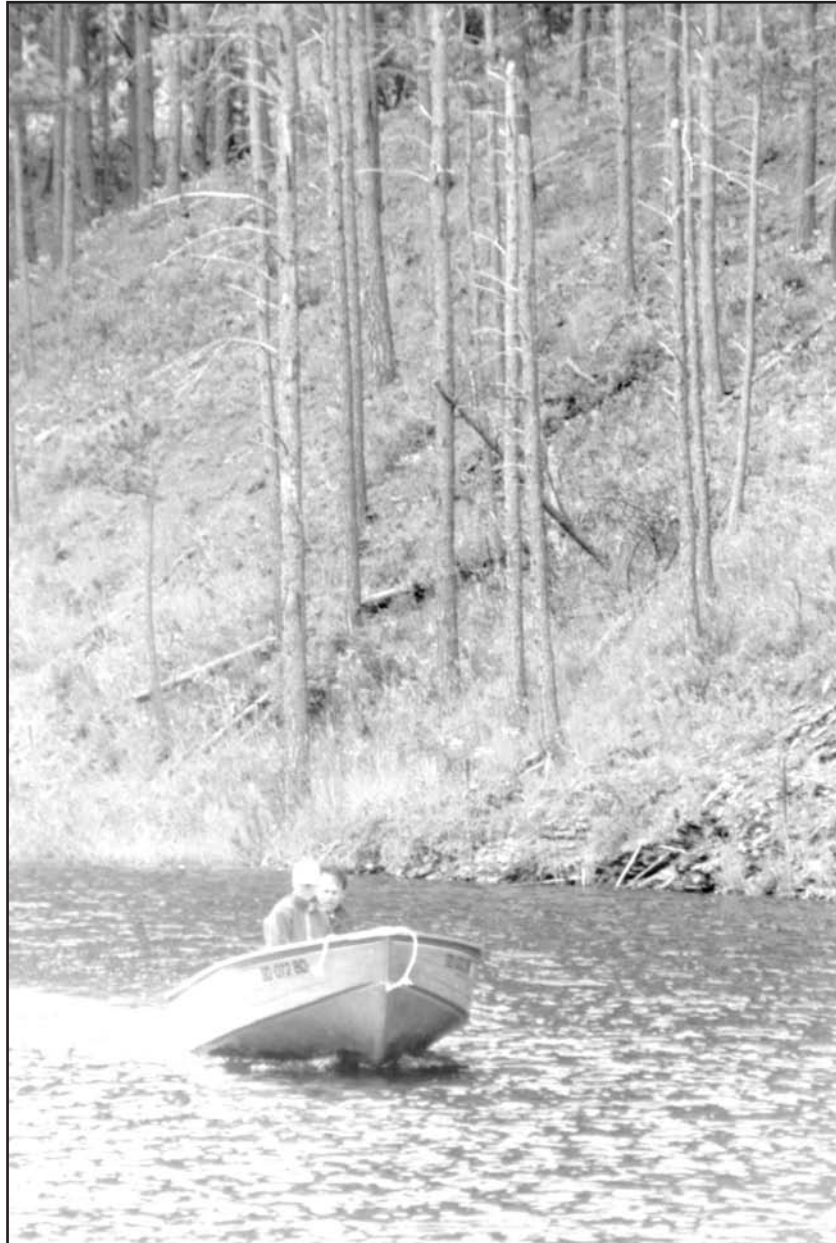
13. (5.4A-9105) Prevent conflicts between log hauling and recreational traffic. Prohibit log hauling from Memorial Day to Labor Day on Highways 16A, 244, 89 and the Palmer Gulch Road (FDR 350). Allow hauling on FDR 345 during the summer season, except on weekends and holidays from Memorial Day to Labor Day. Speed limit on FDR 345 is 15 mph; dust palliatives are required prior to and during cutting/hauling to maintain visibility. **GUIDELINE**

14. (4.2B-9106; 5.4A-9108) Limit motorized travel for administrative purposes to the following:

- (1) Highways, roads, and areas open to all traffic;
- (2) Emergencies threatening human life or property;
- (3) Work which will benefit wildlife and cannot be achieved without vehicles;
- (4) Correction of conditions which are adversely affecting soil or water resources; and
- (5) Access to mining claims.

**GUIDELINE**

# Appendix F



Boating on Pactola Reservoir



# Appendix F:

## Developed Recreational Sites

### Developed Recreation Site Standards

District/Kind of Site	PAOT Capacity	Size in Acres	Dev. Scale	ROS
Bearlodge Ranger District				
Bearlodge Campground (8)	40	8	3	RN
Cook Lake Campground (34)	170	34	3	R
Reuter Campground (24)	120	24	3	RN
Sundance Campground (10)	50	10	3	RN
Subtotal Family Campgrounds	380	76		
Cook Lake Picnic (31)	155	31	3	R
Subtotal Family Picnic Sites	155	31		
Warren Peak Lookout	20	2	3	RN
Subtotal Fire Lookouts	20	2		
Bearlodge District Office	10	1	5	U
Subtotal Information Sites	10	1		
Inyan Kara Interpretive Site - Minor	40	50	1	SPNM
Subtotal Interpretive Sites	40	50		
Cliff Swallow Trailhead	20	2	3	R
Loop A Trailhead	20	2	3	R
Loop B Trailhead	10	1	3	R
Ogden Trailhead	20	2	3	RN
Reuter Trailhead	10	1	3	RN
Sundance Trailhead	50	10	3	RN
Subtotal Trailheads	130	18		
District Total - All Sites	735	178		
Custer-Elk Mountain Ranger District				
Bismarck Boat Site	10	1	3	R
Subtotal Boat Sites	10	1		
Beaver Creek Campground (8)	40	8	3	RN
Bismarck Lake Campground (23)	115	23	3	R

## Developed Recreation Sites

District/Kind of Site	PAOT Capacity	Size in Acres	Dev. Scale	ROS
Comanche Park Campground (34)	170	34	3	RN
Moon Campground (3)	15	3	2	RN
Redbank Spring Campground (4)	20	4	2	RN
Rifle Pit Campground (14)	70	14	3	RN
Subtotal Family Campgrounds	430	86		
Bismarck Lake Picnic (10)	50	10	3	R
Flynn Creek Picnic (5)	25	5	3	RN
Harry Mills Picnic (9)	45	9	3	RN
Hazelrodt Picnic (6)	30	6	3	RN
JH Keith Cascade Falls Picnic (10)	50	10	3	RN
JH Keith Cascade Springs Picnic (8)	40	8	3	RN
Rifle Pit Picnic (2)	10	2	3	RN
Teepee Entrance Picnic (3)	15	3	3	RN
Subtotal Family Picnic Sites	265	53		
Bear Mountain Lookout	10	2	3	RN
Elk Mountain Lookout	15	3	3	RN
Harney Peak Lookout	10	2	3	P
Summit Ridge Lookout	20	4	3	RN
Subtotal Fire Lookouts	55	11		
Iron Creek Campground - Group	45	9	3	RN
Subtotal Group Campgrounds	45	9		
Custer District Office	10	1	5	U
Elk Mountain District Office	10	1	5	U
Subtotal Information Sites	20	2		
Beaver Creek Ski Trailhead	10	2	3	RN
Beaver Creek Hiking Trailhead	15	3	3	RN
Centennial #89 Trailhead	25	5	3	RN
Centennial #89B Trailhead	15	3	3	RN
Grizzly Bear Creek #7 Trailhead	20	4	3	RN
Hell Canyon Trailhead	20	4	3	RN
Iron Creek #15 Trailhead	35	7	3	RN
Iron Mountain #16 Trailhead	10	2	3	RN
Lakota Lake #15 Trailhead	25	5	3	RN
Norbeck #3 Trailhead	15	3	3	RN
Subtotal Trailheads	190	38		
District Total - All Sites	1,015	200		

**Developed Recreation Sites**

District/Kind of Site	PAOT Capacity	Size in Acres	Dev. Scale	ROS
Pactola-Harney Ranger District				
Custer Trail Boat Site	50	4	2	R
Deerfield Cove Boat Site	80	4	2	R
Pactola North Boat Site	195	4	3	R
Pactola South Boat Site	300	5	4	R
Sheridan North Boat Site	135	3	4	R
Sheridan South Boat Site	40	1	3	R
Subtotal Boat Sites	800	21		
Bear Gulch Campground (8)	40	8	3	RN
Black Fox Campground (9)	45	9	3	RN
Castle Peak Campground (9)	45	9	3	RN
Custer Trail Campground (25)	125	25	2	R
Ditch Creek Campground (13)	65	13	3	RN
Dutchman Campground (45)	225	45	3	R
Horsethief Lake Campground (36)	180	36	3	R
Oreville Campground (26)	130	26	3	R
Pactola Campground (80)	440	88	4	R
Sheridan South Campground (129)	645	129	3	R
Whitetail Campground (17)	85	17	3	R
Subtotal Family Campgrounds	2,025	405		
Dakota Point Picnic (9)	45	9	3	RN
Elkhorn Picnic (8)	40	8	3	R
Grizzly Bear Picnic (20)	100	20	3	RN
Iron Mountain Picnic (12)	60	12	3	RN
Jenny Gulch Picnic (8)	40	8	3	RN
Lake Shore Picnic (10)	50	10	3	R
Lakota Lake Picnic (6)	30	6	3	RN
Mountain City Picnic (14)	70	14	3	R
Newton Picnic (6)	30	6	3	RN
Pactola Point Picnic (11)	55	11	3	R
Sheridan North Picnic (17)	85	17	3	R
Sheridan South Picnic (30)	150	30	3	R
Spring Creek Picnic (10)	50	10	3	RN
Veterans Point Picnic (10)	50	10	4	R
Subtotal Family Picnic Sites	855	171		
Seth Bullock Lookout	10	2	3	RN
Subtotal Fire Lookouts	10	2		

## Developed Recreation Sites

District/Kind of Site	PAOT Capacity	Size in Acres	Dev. Scale	ROS
Custer Camp Fishing Site	10	2	3	RN
Fishermans Parking Fishing Site	50	2	4	R
Kinney Canyon Walk-in Fishing Site	45	2	3	RN
Little House Fishing Site	10	2	3	RN
Miller Fishing Site	15	2	3	RN
Pactola Inlet Fishing Site	50	2	3	RN
Silver City Fishing Site	75	2	3	RN
Silver Fishing Site	15	2	3	RN
Subtotal Fishing Sites	270	16		
Sheridan Campground - Group	270	54	4	R
Willow Creek Campground - Group	125	25	3	R
Subtotal Group Campgrounds	395	79		
Harney District Office	10	1	5	U
Pactola District Office	10	1	5	U
Subtotal Information Sites	20	2		
Spokane Mine Interp Site - Minor	100	50	2	RN
Black Hills Interpretive Site - Major	165	5	5	R
Subtotal Interpretive Sites	265	55		
Norbeck Memorial Observation	150	4	3	RN
Pactola North Observation	155	2	3	R
Pactola South Observation	60	2	4	R
Subtotal Observation Sites	365	8		
Pactola Point Swimming	345	5	4	R
Sheridan North Swimming	500	5	4	R
Sheridan South Swimming	345	5	4	R
Subtotal Swimming Sites	1,190	15		
Bear Mountain Ski Trailhead	50	2	3	RN
Big Pine Trailhead	30	2	3	RN
Boarding House Trailhead	30	2	3	RN
Boulder Hill Trailhead	35	2	3	RN
Brush Creek Trailhead	30	2	3	RN
Calumet Trailhead	75	2	3	R
Coon Hollow Trailhead	35	2	3	RN
Custer Trail Trailhead	25	2	3	RN
Deer Creek Trailhead	30	2	3	RN
Gold Run Trailhead	60	2	3	RN
Hill Top Trailhead	25	2	3	RN
Horsethief Trailhead	15	2	3	RN
Kinney Canyon Trailhead	40	2	3	RN

Developed Recreation Sites

District/Kind of Site	PAOT Capacity	Size in Acres	Dev. Scale	ROS
Mystic Road Trailhead	25	2	3	RN
North Shore Trailhead	30	2	3	RN
Rapid Creek Trailhead	30	2	3	RN
Samelius Trailhead	25	2	3	RN
Spring Creek Trailhead	35	2	3	RN
Stratobowl Trailhead	10	2	4	R
Tamarack Trailhead	30	2	3	RN
Willow Creek Trailhead	40	2	3	RN
Subtotal Trailheads	705	42		
District Total - All Sites	6,900	816		
Spearfish-Nemo Ranger District				
Boxelder Forks Campground (14)	70	14	3	RN
Dalton Lake Campground (8)	40	8	3	RN
Hanna Campground (13)	65	13	3	RN
Rod & Gun Campground (7)	35	7	3	RN
Roubaix Campground (55)	275	55	3	R
Timon Campground (7)	35	7	3	RN
Subtotal Family Campgrounds	520	104		
Botany Bay Picnic (2)	10	2	3	RN
Custer Crossing Picnic (7)	35	7	3	RN
Dead Ox Picnic (3)	15	3	3	RN
Hellsgate Picnic (2)	10	2	3	RN
Long Valley Picnic (3)	15	3	3	RN
Mt. Roosevelt Picnic (5)	25	5	3	RN
Roubaix Picnic (9)	45	9	3	R
Steamboat Rock Picnic (21)	105	21	3	RN
Strawberry Picnic (11)	55	11	3	RN
Subtotal Family Picnic Sites	315	63		
Cement Ridge Lookout	10	1	3	RN
Custer Peak Lookout	10	1	3	RN
Subtotal Fire Lookouts	20	2		
Nemo District Office	10	1	5	U
Spearfish District Office	10	1	5	U
Subtotal Information Sites	20	2		
Roubaix Swimming Site	150	5	3	R
Subtotal Swimming Sites	150	5		
Big Hill Trailhead	70	2	3	RN
Crow Peak Trailhead	20	2	3	RN

## Developed Recreation Sites

District/Kind of Site	PAOT Capacity	Size in Acres	Dev. Scale	ROS
Dalton Lake Trailhead	40	2	3	RN
Deadman Trailhead	10	2	3	RN
Elk Creek Trailhead	30	2	3	RN
Holey Rock Trailhead	15	2	3	RN
Little Spearfish Trailhead	20	2	3	RN
Old Baldy Trailhead	10	2	3	RN
Pilot Knob Trailhead	30	2	3	RN
South Boxelder Trailhead	30	2	3	RN
Subtotal Trailheads	275	20		
District Total - All Sites	1,300	196		
Forest Total - All Sites	9,950	1,390		

### Development Scale

- 1 = Minimum Site Modification
- 2 = Little Site Modification
- 3 = Moderate Site Modification
- 4 = Heavy Site Modification
- 5 = High Degree of Site Modification

ROS = Recreation Opportunity Spectrum (See Glossary)

- P = Primitive
- RN = Roaded Natural
- R = Rural
- SPNM = Semi-Primitive Non-Motorized
- U = Urban

SUMMARY BY KIND OF DEVELOPED RECREATION SITE			
Kind of Recreation Site	Number of Each	PAOT Capacity	Acres
Boat Sites	7	810	22
Family Campgrounds	27	3,355	671
Family Picnic Sites	32	1,590	318
Fire Lookouts	8	105	17
Fishing Sites	8	270	16
Group Campgrounds	3	440	88
Information Sites	7	70	7
Interpretive Sites (Major)	1	165	5
Interpretive Sites (Minor)	2	140	100
Observation Sites	3	365	8
Swimming Sites	4	1,340	20
Trailheads	47	1,300	118
Total	149	9,950	1,390

PAOT = Persons At One Time = The number of people who can use a recreational facility or area at one time.

# Appendix G



Mystic District

# Appendix G:

## Timber Suitability

### Background

The planning regulations at 36 CFR 219.14 require lands suited or not suited for timber production to be identified as part of the forest planning process. The following table displays the results of this process and the suitable and available land base associated with the Revised Forest Plan.

The information was derived from the Rocky Mountain Resource Information System (RMRIS). Maps of individual RIS sites were scanned and processed using ARC/INFO. The data represents RIS sites as they appeared in the summer of 1995. Some errors may have occurred due to drawing of the maps, coding of the information, or processing in the ARC/INFO system. Continual refinement of this information will occur. These corrections will be maintained in the RMRIS data base.

The suitability determination is used in developing the allowable sale quantity. It does not imply that timber harvest will be limited to these lands. Unscheduled commercial harvest may occur on unsuitable lands to meet other multiple use objectives where provided for in standards and guidelines.

A map displaying these acres accompanies this document.

**Table G-1. Land Suitable Or Not Suitable For Timber Harvest**

	Acres of Classification	Running Totals after Deduction
<b>Black Hills National Forest Acres</b>		1,531,715
a. Less Private land	289,002	
<b>Net National Forest Acres</b>		1,242,713
b. Less Non-forested Acres (36CFR219.14(a)(1))		
Meadows, Rock, etc.		
Non-vegetated	8,717	
Grassland	104,174	

## Timber Suitability

	Acres of Classification	Running Totals after Deduction
Shrubland	3,085	
Water	2,012	
TOTAL	117,988	1,124,725
<b>Total Forested</b>		<b>1,124,725</b>
c. Less Forested Portion of Areas Administratively Withdrawn (36CFR219.14(a)(4))		
Black Elk Wilderness (MA 1.1A)	9,831	
TOTAL	9,831	1,114,894
d. Less Areas Not Technologically Feasible Without Resource Damage (36CFR219.14(a)(2))		
Unstable Soils (Comp. 720 & 722)	9,101	
Not Accessible (Comp. 721 & 701)	35,354	
TOTAL	44,455	1,070,439
e. Less Areas That Cannot Be Restocked Within 5 Years (Comp. 710) (36CFR219.14(a)(3))	1,693	
TOTAL	1,693	1,068,746
<b>Tentatively Suitable (See 36cfr219.14 (B))</b>		<b>1,068,746</b>
<b>Tentatively Suitable (See 36CFR219.14 (b))</b>		<b>1,068,746</b>
f. Less Areas Incapable of Producing Industrial Wood (Hardwoods)		
Aspen (Comp. 822)	48,062	
Oak (Comp. 826)	8,881	
Other Hardwoods (Comp. 831 & 900)	3,328	
TOTAL	60,271	1,008,475
g. Less Areas With Inadequate Response Information (Comp.740)	43,935	
TOTAL	43,935	964,540
h. Less Remaining Portions of Areas Managed for Other Multiple-Use Objectives or to meet NFMA Management Requirements (36CFR219.14(c)(1) or (2))		
Late Successional Landscapes (MA 3.7, Comp. 802)	14,427	
Late Successional Sites (Comp. 801)	24,504	
Botanical Areas (MA 3.1, Comp. 803)	6,075	

	Acres of Classification	Running Totals after Deduction
Riparian Areas (MA 804)	4,407	
Experimental Forest (MA 5.3A, Comp. 810)	3,368	
Experimental Watershed (MA 5.3B, Comp. 810)	886	
Developed Recreation Sites (Comp. 825)	892	
Administrative Sites (Comp. 850)	318	
Seed Collection Sites (Comp. 860)	42	
Backcountry Recreation Areas (MA 3.31 and 3.32, Comp. 871)	12,710	
Spearfish Canyon (MA 4.2A, Comp. 871)	6,391	
Inyan Kara Mountain (MA 3.2A, Comp. 872))	1,171	
Southern Hills (MA 5.1A, Comp. 872)	11,533	
TOTAL	86,724	877,816
i. Less Remaining Areas Uneconomical For Timber Harvest (36 CFR 219.14(c)(3))		
Steep Slopes (Comp. 820 & 821)	6,884	
Roading Problems (Comp. 823)	2,461	
Isolated Patches (Comp. 824)	2,581	
TOTAL	11,926	865,890
<b>Suitable And Available Acres</b>		<b>865,890</b>
j. Suitable Acres With Recreation or Visual Emphasis		
Ponderosa Pine	28,887	
White Spruce	1,436	
TOTAL	30,323	835,567
k. Suitable Acres With Wildlife Emphasis		
Ponderosa Pine	337,702	
White Spruce	534	
TOTAL	338,236	497,331
l. Suitable Acres With Timber Emphasis		
Ponderosa Pine	482,961	
White Spruce	14,370	
TOTAL	497,331	0

# Appendix H



Bearhouse Project, Harney District, 1992



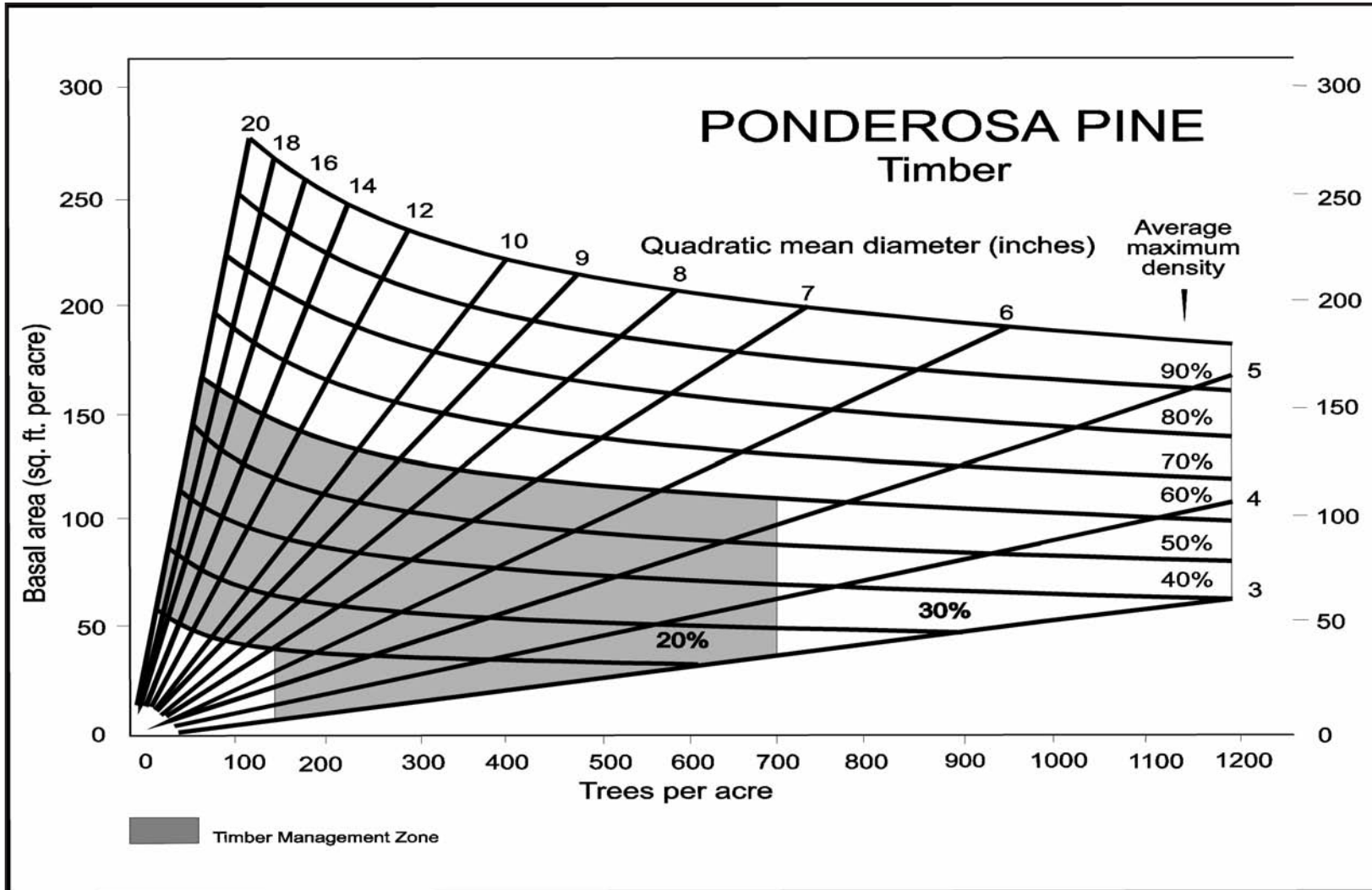
# Appendix H:

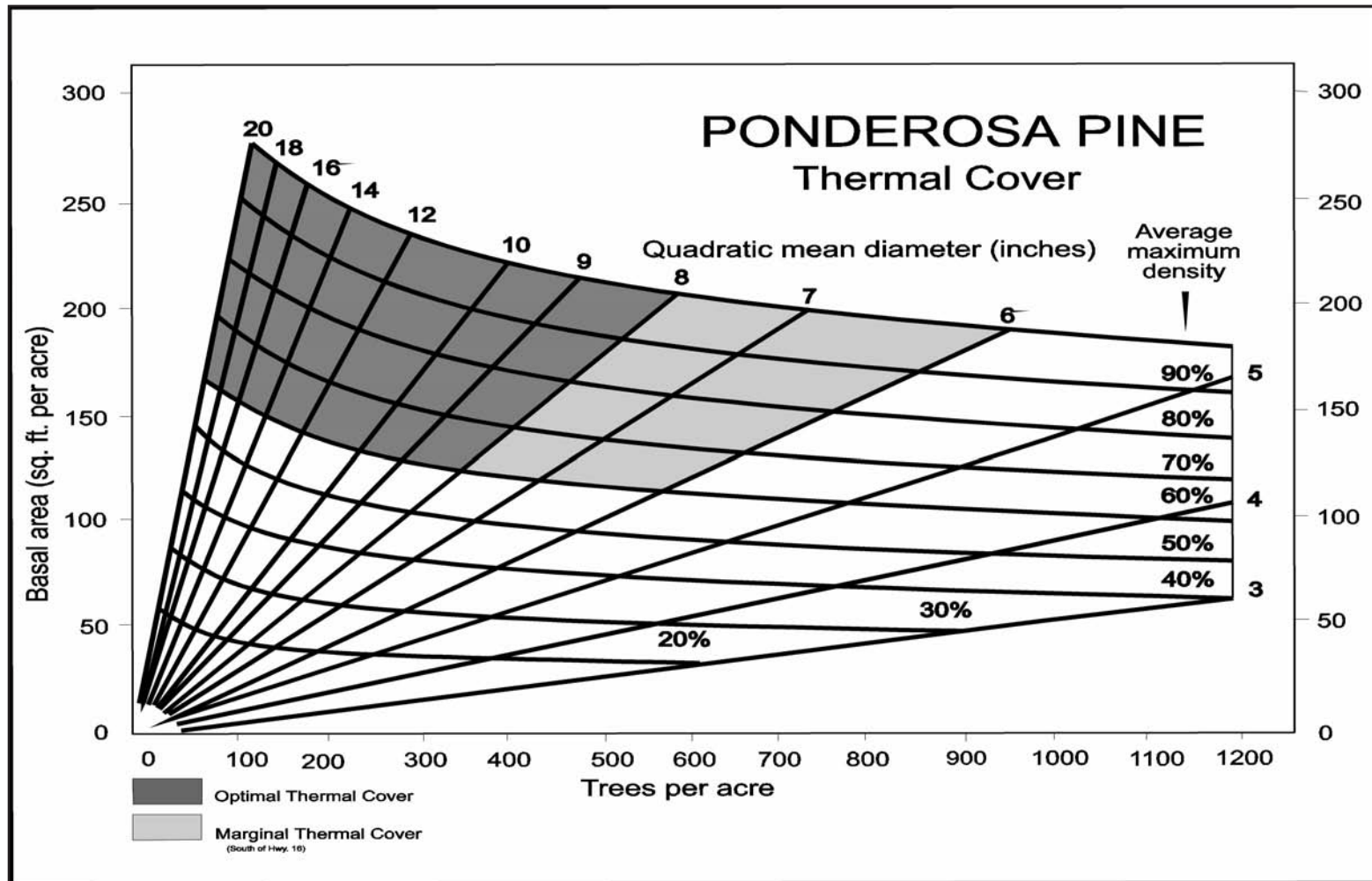
## Timber Stocking Charts

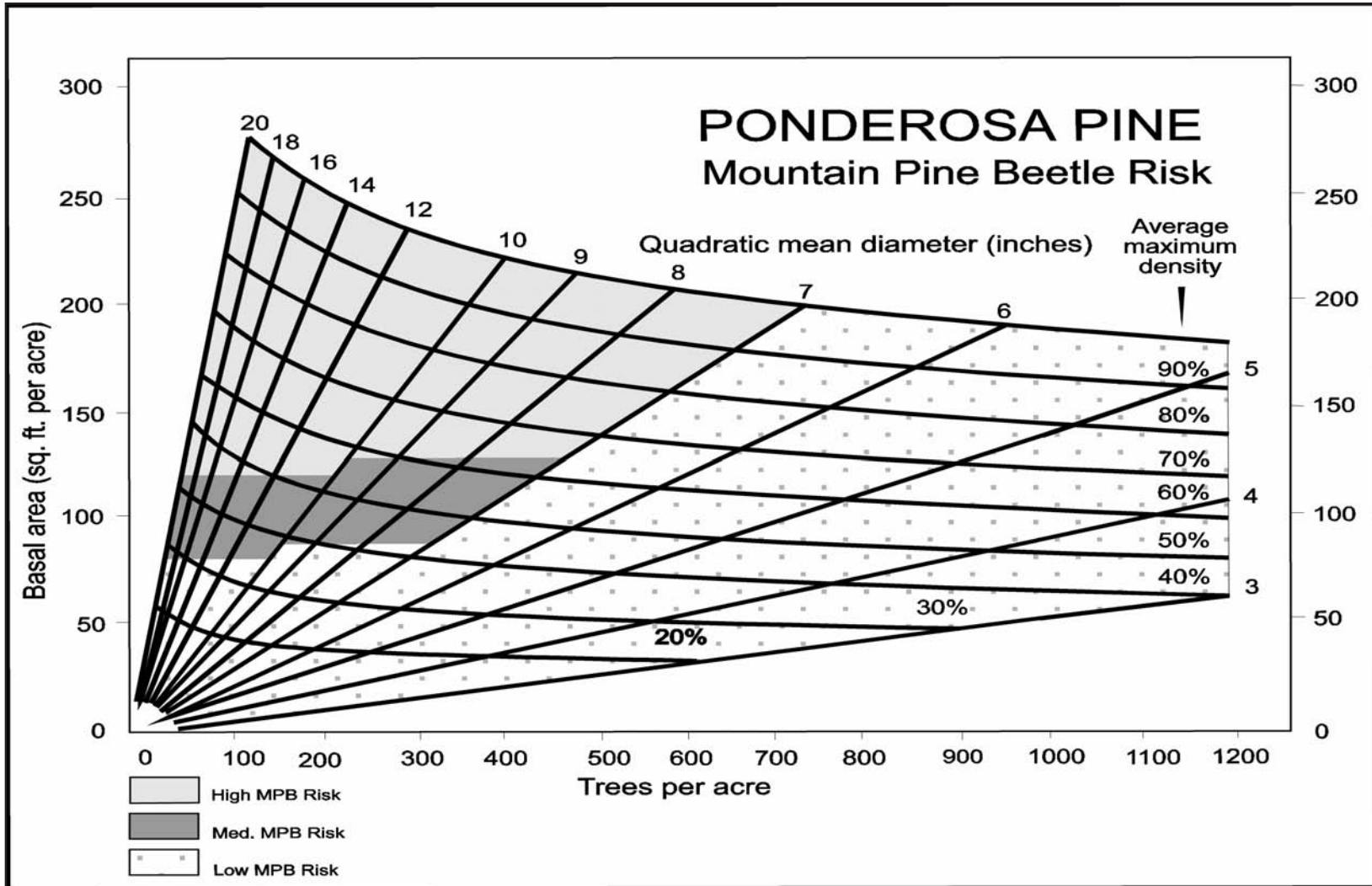
Following are stocking charts which display the range of timber conditions to be met by intermediate harvest such as thinning. Different charts are provided for different management objectives.

The charts display basal area, trees per acre and quadratic mean diameter. The curves on the chart express density of the stand as a percentage of the average maximum density for ponderosa pine stands.

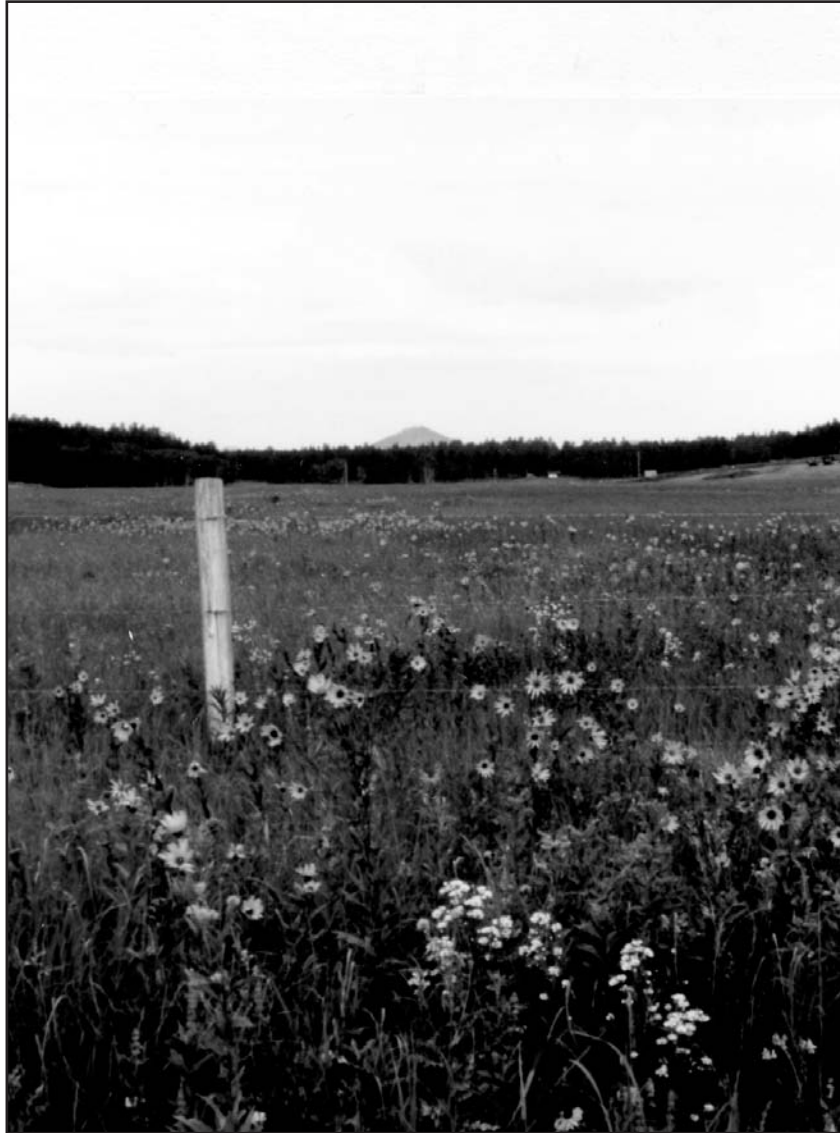
Timber Stocking Charts







# Appendix I



Rangeland on the Black Hills National Forest

# Appendix I:

## Suitability for Grazing and Browsing

### Background

The planning regulations at 36 CFR 219.20 requires lands to be identified which are capable and suitable for producing forage for grazing animals and for providing habitat for indicator species. The following table displays the results of this process and the capable and suitable land base associated with the Revised Forest Plan.

A map displaying these acres accompanies this document.

The information was derived from 30-meter digital elevation data, from the Rocky Mountain Resource Information System (RMRIS) and from information on 1:24000 scale maps. The information was processed using ARC/INFO. Some errors may have occurred due to drawing of the maps, coding of the information, or processing in the ARC/INFO system. Continual refinement of this information will occur, and will be maintained in the ARC/INFO system.

Capability and suitability for grazing and browsing use is presently determined at two Forest Service planning levels (i.e. Forest Plans (suitability) and project plans (AMPs) (capability)). This appendix represents the Forest Plan level, in accordance with the planning regulations.

Capable rangelands are accessible to livestock, produce forage or have inherent forage producing capabilities, and can be grazed on a sustained basis. Capable rangelands include lands that can also become accessible and will produce forage. These lands are called transitory range even though forage may be produced 10 or more years before natural or man-caused changes terminate the production or accessibility.

Suitable rangelands are appropriate for grazing considering environmental and economic consequences, and alternative uses.

The suitability determination is used to determine capacities for livestock use. It does not imply that livestock are to be limited to these lands. Livestock may be seen in areas designated as unsuitable if they have not been restricted from access by a fence or other means or if they are being used as a tool within the unsuitable area for management of the vegetative resource.

Some land uses are incompatible with grazing and browsing. Existing commitments render some lands as inappropriate for grazing. Lands which have been or can be closed to grazing or browsing include administrative sites, fenced recreation sites, fenced highway rights-of-way, designated management areas or parts there of, long term research study sites and exclosures, special use sites, RNAs, critical habitat for T&E species, etc.

Other areas across the Forest have been closed to grazing or browsing for biological reasons on either a temporary or permanent basis. These lands include regeneration sites for ponderosa pine and aspen, riparian areas, developed springs, fens and bogs, and other sites. Generally, these types of closed sites are fenced to exclude livestock grazing until conditions of a temporary closure have been fulfilled or they are permanently closed for long term site needs. Areas which are closed permanently to grazing are considered as lands of foregone uses relative to rangeland resources management.

No acres were classified as being unsuitable solely on the basis of economics. The Black Hills is largely roaded, and severe terrain was already considered not capable. In addition, the planning regulations do not prohibit grazing which may be below cost. The intent of Congress is to have a managed livestock grazing program, where cost efficiencies are taken into consideration when deciding between range management prescriptions (36 CFR 219.20(b)).

**Table I-1. Acres Of Land Determined As Suitable Or Unsuitable For Livestock Grazing And Browsing**

	Acres of Classification	Running Totals after Deduction
<b>Black Hills National Forest Acres</b>		<b>1,531,715</b>
a. Less Private land	289,002	
<b>Net National Forest Acres</b>		<b>1,242,713</b>
b. Less Non-vegetated Acres or Water		
Rock, Developed, etc.	398	
Water	2,012	
TOTAL	2,410	1,240,303
c. Less Roads or Streamcourses		
Roads	5,779	
Streams	304	
TOTAL	6,083	1,234,220
d. Less Dense Overstory Spruce Forest Types	21,737	
TOTAL	21,737	1,212,483
e. Less Steep Slopes or other Areas Where Resource Damage Could Occur	139,198	
TOTAL	139,198	1,073,285
<b>TOTAL CAPABLE FOR LIVESTOCK GRAZING</b>		<b>1,073,285</b>
f. Less Capable Portions of Areas Managed for other Multiple Uses		
Black Elk Wilderness outside of Palmer Gulch Allotment	3,971	
Upper Pine Creek RNA (Not included in the Wilderness acres above)	510	
Spearfish Canyon MA 4.2A	2,853	
Portion of Norbeck Wildlife Preserve in Spokane Allotment	7,150	
Fenced Recreation Complexes	3,093	
Fenced Developed Recreation Sites outside of Recreation Complexes	304	
Administrative Sites	585	
Primary and Secondary Road Right-of-Ways Fenced	1,648	
Fenced Springs/Ponds	546	
Mine Sites	0	
Special Uses	334	
Resource Protection	427	
Other (Exclosures, Study Sites, Outside of Allotments, Walk-in Fisheries, etc.)	1,126	
TOTAL	22,547	1,050,738
g. Less Capable Portions of Closed Allotments	13,140	
TOTAL	13,140	1,037,598
h. Less Uneconomical Areas (See narrative)	0	1,037,598
TOTAL	0	1,037,598
<b>TOTAL SUITABLE ACRES</b>		<b>1,037,598</b>

# Appendix J



Beaver Dam, Custer District

# Appendix J:

## Vegetative Buffer Equation

Vegetated buffers are the most cost effective method to protect streams from damage caused by erosion and sediment.

...Eroded sand is particularly damaging--when excess sand overwhelms the natural bedload transport process, sand fills in the spaces around and under rocks resulting in reduced macro-invertebrate habitat and loss of in-stream plants (C. Ohlander 1993).

The vegetated buffer equation calculates the potential sediment flow distance below a typical road drainage structure. This is the distance needed to trap sand-sized particles (0.06 to 2.0 mm) generated by road ditch and surface erosion.

Based on research conducted on the Black Hills during the summer and fall of 1993 by Coryell Ohlander (Regional Hydrologist, unpublished), the following equation determines a vegetated buffer width effective at protecting water courses from road generated sediment. This equation was found to work for typical gravel and dirt roads in most areas of the Black Hills National Forest.

The equation is:  $V_{bfr} = (10 + 10 \times R_{ms} + 100 \times G_{dp}) / (V_{cvr})$  where:

$V_{bfr}$  = Vegetated buffer needed to trap road and ditch erosion (feet)

$R_{ms}$  = (The distance between drainage structures/1000) x (Road slope percent)

$G_{dp}$  = Ditch cutting or gullying in the ditch bottom (0.1 feet)

$V_{cvr}$  = Buffer type and vegetative cover factor (ranges from 0.1- 1.0)

There are seven basic buffer types used to characterize the general patterns of flow concentration or dispersion. These are:

S = Swales: as undisturbed vegetation and no concentrated flow;

E = Eroded: healed rills or small gullies disconnected from stream;

D = Drops: holes or depressions;

F = Fans: smooth sideslopes or ridges that allow sediment to fan out;

L = LWD: large woody debris (4 inches) oriented to create barriers;

O = Open: flow along paths or trails (disconnected from stream); and

W = Wandering: spreading flow through rocky material (2.5 inches), or hummocks.

## Vegetative Buffer Equation

Except for the “fan” type, the  $V_{cvr}$  element is controlled by the buffer type. The “fan”  $V_{cvr}$  factor is dependent on the density of vegetative cover made up of live plant, coarse herbaceous litter, and woody debris. Use the decimal (90 percent = .90).

BUFFER TYPE	CONDITION	$V_{cvr}$	
		EXPECTED	RANGE
Swale	Undisturbed; no rills	0.4	0.3 - 0.5
Eroded	Old rills common	0.2	0.1 - 0.2
Drops	Holes, depressions	1.0	0.9 - 1.0
Fans	Sidehill and ridge; no rills	vegetated	0.3 - 1.0
LWD	Windows, slash, natural falls	1.0	0.8 - 1.0
Open	Trails, paths; not connected	0.4	0.2 - 0.7
Wander	Cobbles, hummocks; no rills	1.0	0.8 - 1.0

For example, given:

Distance between culverts: 500 feet

Road slope: 6 percent

Ditch cutting: 0.2 feet

Buffer type: fan

60 percent well-distributed litter and rooted plant cover, on granite soil

To calculate the buffer distance, first calculate  $R_{ms}$ :

$$R_{ms} = (500/1000) \times 6 \text{ percent} = 3.0$$

Next calculate  $V_{bfr}$ :

$$V_{bfr} = (10 + 10 \times 3 + 0.2 \times 100) / 0.6 = 100 \text{ feet}$$

Therefore, 100 feet should provide an adequate buffer between the normal high water line and soil disturbance. However, if there were some reason that this buffer distance could not be met, the outcome can be changed by changing the “givens.” For example:

- rocking the ditch changes the  $G_{dp}$  from 0.2 to 0 ( $V_{bfr} = 67$  feet);
- adding LWD changes  $V_{cvr}$  from 0.6 to 1.0 ( $V_{bfr} = 60$  feet);
- doing both changes  $V_{bfr}$  from 100 feet to 40 feet

In this study (C. Ohlander, unpublished), the effects from 2-track roads, as well as single and double lane gravel roads were observed. Data was also collected from both water-barred and out-sloped roads. Roads were selected from four major geologies (schist, limestone, quartz monzonite, and sandstone and mixed shaly

sandstone). Roads were chosen with steep grades and of an age that would allow long-term effects to be studied. When possible, the roads were observed following intense thunderstorms so that the greatest effects could be noted.

The conclusion of the research was that this equation works well for determining buffer distances on the Black Hills, except for the highly erosive “red bed” sandstones in the Elk Mountain area. In this situation, the equation may provide a start, but it would be wise to add substantially to the buffer, or install a sediment basin to decrease the chance for damage to stream resources. However, even on the rest of the Forest, when the actual buffer distance is approaching the calculated buffer distance, additional measures, such as installing small sediment basins below the drainage release to protect against a sudden sediment flush which could occur during construction, need to be considered.

### **Literature Cited**

Ohlander, C. Watershed sciences glossary. USDA-Forest Service. Region 2: Denver; 1993.

# Appendix K

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Aspen Stand

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# Appendix K:

## Landtype Associations

### Landtype Associations

Following are the landtype associations and ecological land units for the Black Hills. Landtype associations are combinations of the ecological land units. This information may be useful in project planning to identify areas with common resource potential and common responses to land management activities.

Ecological land units (ELUs) were originally identified in conjunction with the 1983 Forest Plan (Forest Service, 1980) using earlier reports and maps (Svatos, 1976). ELUs were identified by overlaying 14 geomorphic subunits with six vegetative units, resulting in 61 individual units. Additional information was developed on soils, water, and wildlife.

In 1988, the geomorphic subunits (expanded to 16) were redefined as landtype associations (Hoeft, 1988). Landtype associations range in size from about five square miles to several hundred square miles.

Landtype associations are a layer in the Forest Service's hierarchical framework of ecological units (Forest Service, 1994), as shown in Table 1.

**Table 1.** Black Hills As Identified in the Hierarchical Framework of Ecological Units

Domain	300 - Dry
Division	M330 - Temperate Steppe Regime, Mountains
Province	M334 - Black Hills Coniferous Forest Province
Section	M334A - Black Hills
Subsection	Subsections in the Black Hills have not been identified.
Landtype Associations	(As Shown in this Appendix)
Landtypes	Currently identified as the soil map units in NRCS soil survey reports.

## Landtype Associations

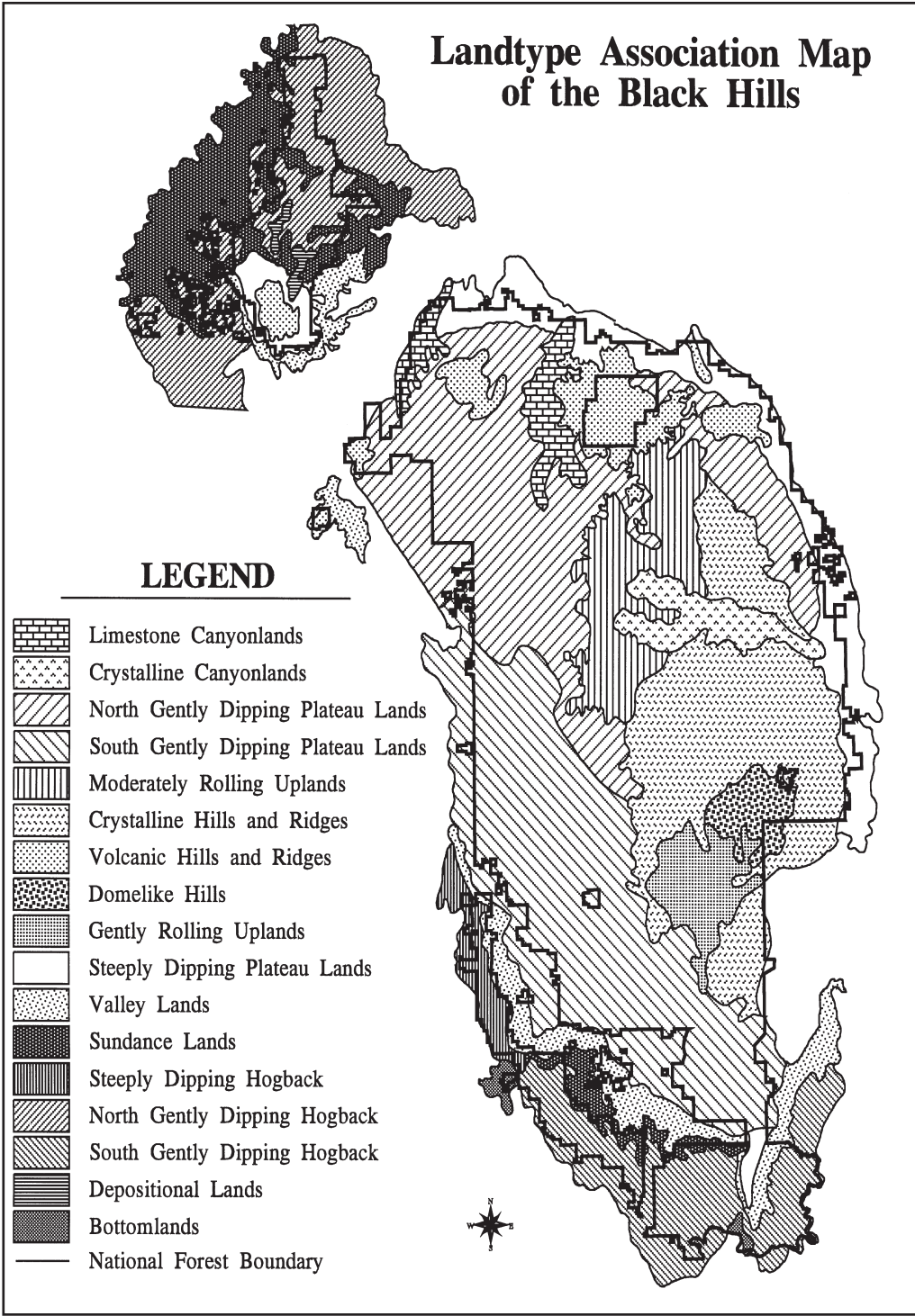
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Table 2 lists the landtype associations and associated ecological land units upon which they are based.

**Table 2.** Black Hills Landtype Associations and Ecological Land Units

<b>LANDTYPE ASSOCIATION</b>	<b>ECOLOGICAL LAND UNIT</b>
1. Limestone Canyonlands	ELUs 29 30 33
2. Crystalline Canyonlands	ELUs 9 10
3. North Gently Dipping Plateau Lands	ELUs 23 25 26 27 31 32
3. South Gently Dipping Plateau Lands	ELUs 21 22
4. Moderately Rolling Uplands	ELUs 8 13 14
5. Crystalline Hills and Ridgeland	ELUs 2 3 6 7 11 12
6. Volcanic Hills and Ridgeland	ELUs 15 60 61 62 63 64 65 66 67 68 69
7. Domelike Hills	ELU 1
8. Gently Rolling Uplands	ELU 5
9. Steeply Dipping Plateau Lands	ELU 20 24 28 35 36
10. Valley Lands	ELU 40 41 43 44 45 46
11. Sundance Lands	42 47 48
12. Steeply Dipping Hogback	ELU 52
13. North Steeply Dipping Hogback	ELU 53 54 55 56
14. South Gently Dipping Hogback	ELU 50 51
15. Depositional Lands	ELU 72 73
16. Bottomlands	ELU 70 71



## Management Implications

### **LTA 1. Limestone Canyonlands**

This landtype association has narrow ridges, very steep sideslopes, narrow valley bottoms and rock outcrops. Sideslopes generally are steeper than 40 percent. The valley bottoms generally are less than 300 feet in width. There is strong dissection.

Soils in the riparian zones are Maitland, Marshdale and Cordeston.

The very steep sideslopes have a high erosion potential when disturbed. Erosion control measures are needed to reduce erosion and stream sedimentation.

The very steep sideslopes also have a mass movement potential when disturbed. Management activities on very steep sideslopes near the riparian zones may cause mass movement and stream sedimentation.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

Marshdale soils are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshdale soils. Livestock use may need to be restricted when soils are wet.

### **LTA 2. Crystalline Canyonlands**

This landtype association has narrow ridges, very steep sideslopes, narrow valleys and outcrops of slate and schist. Sideslopes generally are steeper than 40 percent. Rock outcrops comprise 30-45 percent of the unit. The valley bottoms generally are less than 300 feet in width. There is strong dissection.

Major soils in the riparian zones upstream from Pactola Reservoir are Marshbrook and Cordeston soils. Marshbrook soils are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshdale soils. Livestock use may need to be restricted when soils are wet.

The very steep sideslopes have a high erosion potential when disturbed. Erosion control measures are needed to reduce erosion and stream sedimentation.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

In some areas near riparian zones, the angle of the tilted bedrock is parallel to the soil surface. These areas may have a potential for mass movement when disturbed. This could result in some stream sedimentation.

### **LTA 3. Gently Dipping Plateau Lands.**

This landtype association has broad and narrow ridges and valley bottoms, moderately sloping to steep sideslopes and rock outcrops. Sideslopes dominantly have slopes of 15-30 percent. Rock outcrops of sandstone and limestone comprise 10-15 percent of this unit. There is weak to strong dissection. The unit also includes Hell, Redbird and Gillette Canyons which have very steep sideslopes.

Soils in the riparian zones are Cordeston, Maitland, Marshbrook and Marshdale. The drier Cordeston and Maitland soils are dominant.

The Marshbrook and Marshdale soils are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshbrook and Marshdale soils. Livestock use may need to be restricted when soils are wet.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales. Generally, the narrow valley bottoms are more likely to have narrow buffer zones.

### **LTA 4. Moderately Rolling Uplands**

This landtype association has broad ridges, moderately sloping to steep sideslopes, narrow to broad valley bottoms and rock outcrops. Sideslopes dominantly have 15-30 percent slopes. Valley bottom widths are variable; some are less than 300 feet. Rock outcrops of slate and schist comprise 10-20 percent of this unit. There is moderate dissection.

Major soils in the riparian zones are Cordeston, Maitland, Marshbrook and Marshdale. The Marshbrook and Marshdale soils are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshbrook and Marshdale soils. Livestock use may need to be restricted when soils are wet.

Since this unit has some narrow valleys, the vegetative buffer zones may be too narrow in some places to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

This unit has a moderate erosion potential when disturbed.

### **LTA 5. Crystalline Hills and Ridgeland.**

This landtype association has narrow ridges, moderately steep to steep sideslopes, narrow valley bottoms and rock outcrops. Most sideslopes range from 20-35 percent slope. Rock outcrops are mainly slate and schist with some granite outcrops. Rock outcrops comprise 15-25 percent of the unit. The valley bottoms generally are less than 300 feet in width. In some areas, valley bottoms are wider than 300 feet. There is strong dissection.

Major soils in the riparian zones are Cordeston, Maitland and Marshdale. The dominant Cordeston and Maitland soils do not have the compaction potential and high water tables of Marshdale and Marshbrook soils.

The Marshbrook and Marshdale soils are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshbrook and Marshdale soils. Livestock use may need to be restricted when soils are wet.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales. Generally, the narrow valley bottoms are more likely to have narrow buffer zones.

There is moderate to high erosion potential when disturbed.

### **LTA 6. Volcanic Hills and Ridgeland.**

This landtype association has broad and narrow ridges, steep to very steep sideslopes, narrow valley bottoms and rock outcrops. Sideslopes dominantly are 30-45 percent slopes. Valley bottoms generally are less than 300 feet in width. Rock outcrops comprise 10 to 20 percent of this association. There is strong dissection.

Major soils in the riparian zones are Maitland and Marshdale. The dominant Maitland soils are drier than Marshdale soils.

Portions of this association are on very steep sideslopes which have a high erosion potential when disturbed. Erosion control measures are needed to reduce erosion and stream sedimentation.

The Marshbrook soils are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshbrook soils. Livestock use may need to be restricted when soils are wet.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales. Generally, the narrow valley bottoms are more likely to have narrow buffer zones.

### **LTA 7. Domelike Hills**

This landtype association has narrow ridges, steep to very steep sideslopes, narrow valley bottoms and outcrops of granite. Sideslopes generally are steeper than 30 percent. Rock outcrops of granite comprise 25 to 40 percent of the unit. The valley bottoms generally are less than 300 feet in width. There is strong dissection.

Major soils in the riparian zones are Cordeston and Marshbrook. The dominant Cordeston soils do not have the compaction potential and high water tables of Marshbrook soils.

The Marshbrook soils have some management problems. They are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshbrook soils. Livestock use may need to be restricted when soils are wet.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

Portions of this landtype association are on very steep sideslopes which have a high erosion potential when disturbed. Erosion control measures are needed to reduce erosion and stream sedimentation.

### **LTA 8. Gently Rolling Uplands**

This landtype association has broad ridgetops, gently to moderately sloping sideslopes, broad valley bottoms and rock outcrops. Sideslopes generally have slopes of 10-20 percent. The valley bottoms generally are more than 300 feet in width. Rock outcrops of slate, schist and granite comprise about 5-10 percent of the unit. There is moderate dissection.

Major soils in the riparian zones are Cordeston and Marshbrook. The dominant Cordeston soils do not have the compaction potential and high water tables of Marshbrook soils.

This unit has a low to moderate erosion potential from management activities.

The wider valley bottoms are more capable of filtering sediment compared to other units with narrow valley bottoms.

The Marshbrook soils have some management problems. They are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact Marshbrook soils. Livestock use may need to be restricted when soils are wet.

### **LTA 9. Steeply Dipping Plateau Lands**

This landtype association has broad ridges, steep to very steep sideslopes, narrow valley bottoms and rock outcrops. Sideslopes dominantly have slopes of 30 to 50 percent. Rock outcrops of sandstone, limestone and some shale comprise 10 to 20 percent of the unit. The valley bottoms generally are less than 300 feet in width. There is strong dissection.

Major soils in the riparian zones are Cordeston and Winetti. These soils generally do not have high water tables.

Portions of this landtype association are on very steep sideslopes which have a high erosion potential when disturbed. Erosion control measures are needed to reduce erosion and stream sedimentation.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

The wetter Marshbrook and Marshdale soils are subject to soil compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use on these wetter soils could compact them. Livestock use may need to be restricted when soils are wet.

There may be some landslides in this association. Management activities on steeper slopes near riparian zones may cause some mass movement and stream sedimentation.

### **LTA 10. Valley Lands**

This landtype association has broad ridges, gently to moderately sloping sideslopes, broad valley bottoms and rock outcrops. Sideslopes dominantly have 5-20 percent slopes. Rock outcrops of reddish sandstone, shale and siltstone and gypsum comprise 10 to 20 percent of the unit. The valley bottoms generally are more than 300 feet wide. There is weak to moderate dissection.

Major soils in the riparian zones are Barnum and Haverson. Soils in the riparian zones are well drained. They generally do not have compaction problems or high water tables.

Soils on the ridges and sideslopes are quite silty and have a high erosion potential even though slopes are not steep. Severely-eroded areas and numerous gullies are common in this association. Gullies form easily where runoff concentrates on livestock and vehicle trails and road ditches.

**LTA 11. Sundance Lands**

This landtype association has broad ridges, moderately sloping to steep sideslopes, narrow valley bottoms and rock outcrops. Sideslopes dominantly have 20-35 percent slopes. Valley bottoms generally are less than 300 feet in width. Rock outcrops of shale, sandstone and limestone comprise 10 to 15 percent of this unit. There is moderate dissection.

Dominant soils in the riparian zones are Colombo and Lynx.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

Although the wetter soils are minor, they are subject to compaction and rutting from operation of heavy equipment. Restricting use of heavy equipment until soils are dry or frozen reduces compaction and rutting.

Concentrated livestock use will also compact the wetter soils. Livestock use may need to be restricted when soils are wet.

There is moderate erosion potential when disturbed.

**LTA 12. Steeply Dipping Hogback**

This landtype association has broad ridges, moderately steep to very steep sideslopes, narrow valley bottoms and rock outcrops. Dominant slopes on the backslope are 20-30 percent. Dominant slopes on the front slope are steeper than 40 percent. The valley bottoms are less than 300 feet wide. Rock outcrops of sandstone, shale and limestone comprise 15-20 percent of this unit. There is strong dissection.

Soils in the riparian zones are Barnum and Winetti. They are well drained and generally do not have compaction problems or high water tables.

The very steep sideslopes have a high erosion potential when disturbed. Erosion control measures are needed to reduce erosion and stream sedimentation.

Some landslide areas are present on the very steep front slopes.

### **LTA 13. Gently Dipping Hogback**

This landtype association has broad and narrow ridges, moderately steep to steep sideslopes, narrow valley bottoms and rock outcrops. Sideslopes dominantly have 20-35 percent sideslopes. Valley bottoms generally are less than 300 feet in width. Rock outcrops of shale, sandstone and limestone comprise 10 to 20 percent of this unit. Moderate dissection is dominant.

There are several soils associated with this association as it occurs around the Bearlodge Mountains and also the Hot Springs/Edgemont area. Soils of the riparian zones include Colombo, Cordeston, Haverson and Lynx. These soils generally do not have high water tables.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

The steeper sideslopes have a high erosion potential when disturbed. Erosion control measures are needed to reduce erosion and stream sedimentation.

Although the wetter soils are minor, they are subject to compaction and rutting from operation of heavy equipment. Use of heavy equipment should be restricted until soils are dry or frozen to reduce compaction and rutting.

Concentrated livestock use will also compact the wetter soils. Livestock use may need to be restricted when soils are wet.

In the Bearlodge Mountains, this association contains some landslide areas. Management activities on steeper slopes near riparian zones may cause some mass movement and stream sedimentation.

### **LTA 14. Depositional Lands**

This landtype association has broad ridgetops, gently to moderately sloping sideslopes, narrow valley bottoms and rock outcrops. Sideslopes dominantly have 10-20 percent slopes. Valley bottoms generally are less than 300 feet wide. Rock outcrops of clay, sandstone and limestone comprise 5-10 percent of this unit. There is weak dissection.

Major soils in the riparian zones are Cordeston and Lynx.

In places, the vegetative buffer zones may be too narrow to filter sediment before it reaches the stream. These areas may need sediment barriers such as logs or straw bales.

Although the wetter soils are minor, they are subject to compaction and rutting from operation of heavy equipment. Use of heavy equipment should be restricted until soils are dry or frozen to reduce compaction and rutting.

Concentrated livestock use will also compact the wetter soils. Livestock use may need to be restricted when soils are wet.

This association may contain some landslide areas on the steeper slopes. Management activities on the steeper slopes near riparian zones could cause some mass movement problems and stream sedimentation.

There is low to moderate erosion potential when disturbed.

### **LTA 15. Bottomlands**

This landtype association has broad ridges, nearly level to moderately sloping sideslopes, broad valley bottoms and some rock outcrops. The sideslopes dominantly have 5-15 percent slopes. Valley bottoms generally are more than 300 feet in width. Rock outcrops of shale comprise 5-10 percent of the unit. There is weak dissection.

Dwyer, Glenberg and Haverson are the major soils of the riparian zones. They are well to excessively drained. They do not have season-long high water tables. Sometimes, the soils may be flooded for short periods.

There is low erosion potential when disturbed.

### **Literature Cited**

Black Hills National Forest Ecological Land Units Study; USDA Forest Service; 1980.

Svatos, T. Ecological Land Units. Black Hills National Forest; March 4, 1976.

Ecological Subregions of the United States; Section Descriptions, WO-WSA-5; USDA Forest Service; July 1994.

Hoeft, D. Land Classification System and Soils Information; Black Hills National Forest; February 1988.

# Appendix L



Riparian Habitat, Hell Canyon District

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# Appendix L:

## Supplemental Species Information

### **Habitat Capability/Suitability Models**

Habitat capability/suitability models are a useful analysis tool for comparing project alternatives. The use of such models is encouraged as a consistent method of comparing effects among project alternatives. Habitat capability/suitability models are available for some management indicator species (MIS), Sensitive Species, Species of Local Concern and Demand Species.

### **Threatened and Endangered Species**

Threatened and Endangered species occurring on the Black Hills National Forest are identified through consultation with the US Fish and Wildlife Service. The list of species may change as species are listed or de-listed by the US Fish and Wildlife Service. For the most recent list of species in the Black Hills, consult with the US Fish and Wildlife Service.

### **Sensitive Species**

Sensitive Species for Region 2 are identified by the Regional Forester. The list of sensitive species is periodically updated by the Regional Forester. For the latest list of Region 2 sensitive species, refer to the Regional Supplement to Forest Service Manual (FSM) 2670.

### **Species of Local Concern**

Species of Local Concern on the Black Hills National Forest are identified by the Forest Supervisor through a Forest Supplement to the Forest Service Manual. The list is periodically updated by the Forest Supervisor. For the latest list of Species of Local Concern, see FSM 2622, Black Hills Supplement.

## Species for Analysis in Norbeck

Red-naped Sapsucker (*Sphyrapicus nuchalis*)

Hairy Woodpecker (*Picoides villosus*)

Warbling Vireo (*Vireo gilvus*)

MacGillivray's Warbler (*Oporornis tolmiei*)

Vesper Sparrow (*Pooecetes gramineus*)

White-crowned Sparrow (*Zonotrichia leucophrys*)

Ruby-crowned Kinglet (*Regulus calendula*)

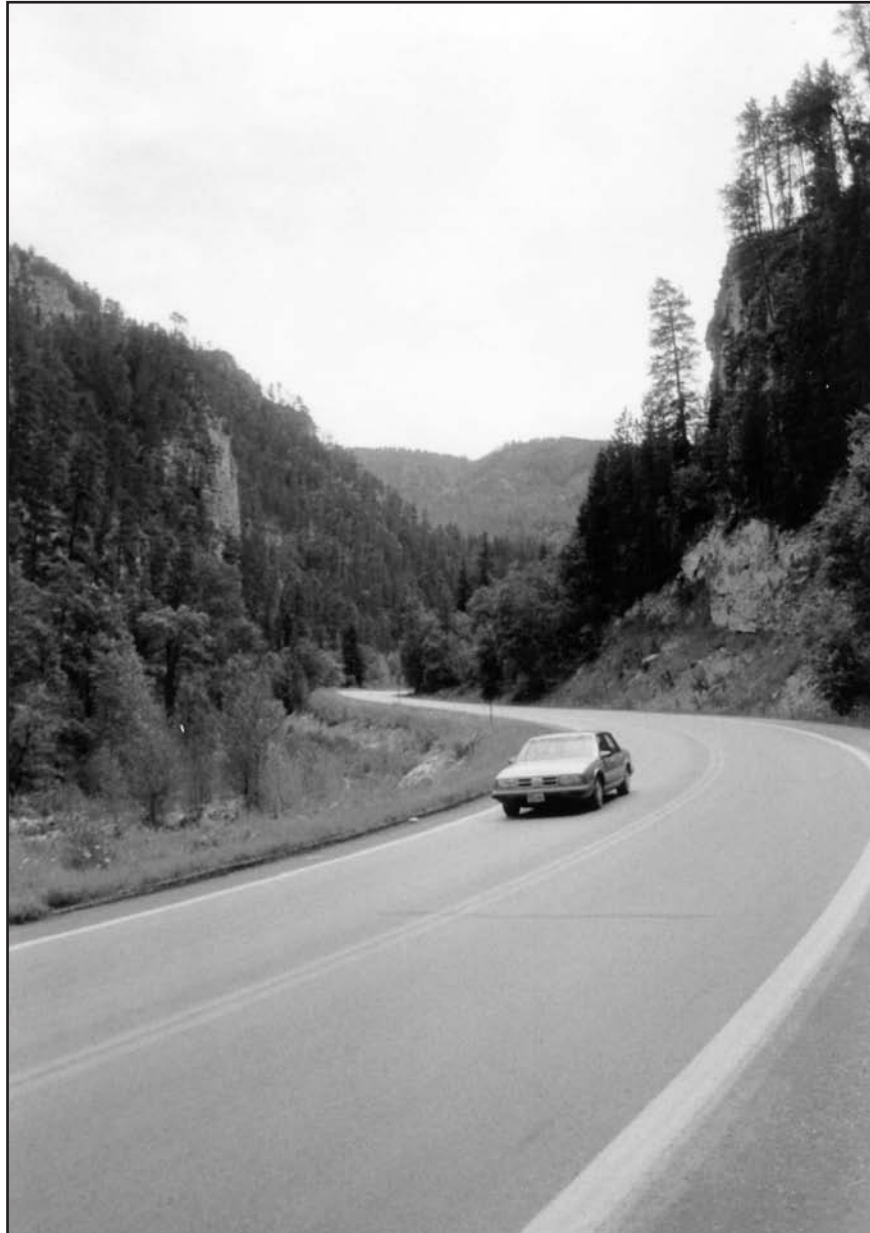
Ruffed grouse (*Bonasa umbellus*)

Northern Flicker (*Colaptes auratus*)

Mountain Bluebird (*Sialia currucoides*)

Red-breasted Nuthatch (*Sitta canadensis*)

# Appendix M



Spearfish Canyon Scenic Byway



# Appendix M:

## 6th Level Watersheds

<b>Watershed No.</b>	<b>Watershed Name</b>	<b>Area (Acres)</b>
01-01	Pleasant Valley Creek	77,218
01-02	Hawkwright Creek	17,121
01-03	Lower Pleasant Valley Creek	23,891
01-04	Craven Canyon	15,912
02-01	Cold Brook Canyon	44,870
02-02	Hot Brook Canyon	39,183
02-03	Fall River	21,933
03-01	Line Creek	27,586
03-02	Cheyenne Face	36,721
03-03	North Cheyenne Face	42,760
03-04	Cascade Creek	20,872
03-05	Sheps Canyon	24,447
05-01	Hell Canyon	58,554
05-02	Teepee Canyon	50,862
05-03	Pass Creek	23,439
05-04	Lower Pass Creek	15,005
07-01	Stockade Beaver Creek	72,167
07-02	Redbird Canyon	49,553
07-03	Gillette Canyon	51,050
07-04	Whoopup Creek	19,087
07-05	Horsethief Canyon	3,219
77-01	Soldier Creek	5,044
77-02	Upper Inyan Kara Creek	31,948
77-03	Bear Den Canyon	6,129
77-04	Lower Inyan Kara Creek	9,485
79-01	Belle East Creek	6,486
79-02	Miller Creek	35,188
79-03	Lytle Creek	24,094
79-04	Whitetail Creek	18,009

**6th Level Watersheds**

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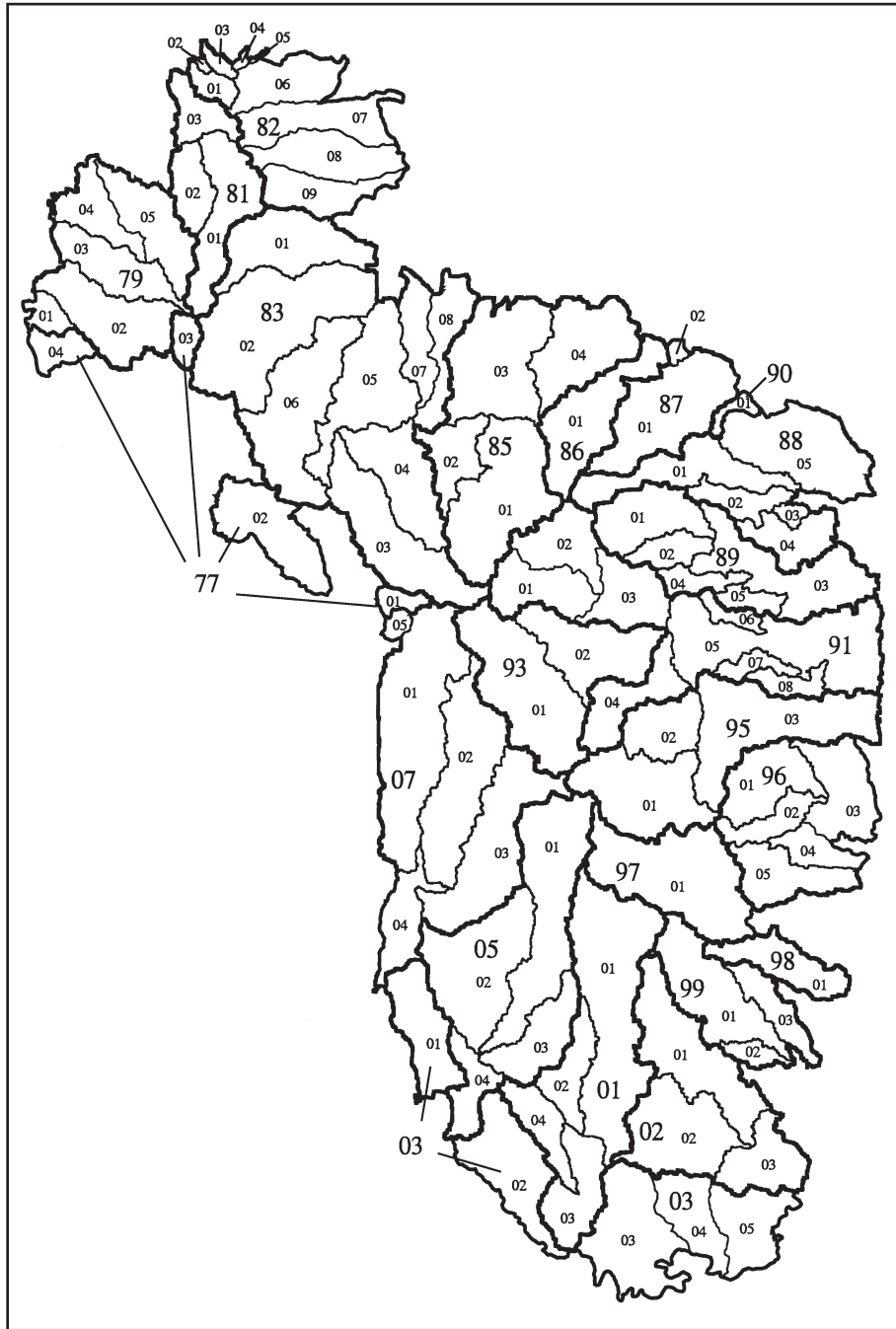
<b>Watershed No.</b>	<b>Watershed Name</b>	<b>Area (Acres)</b>
79-05	Blacktail Creek	27,200
81-01	Beaver Creek	32,297
81-02	Lame James Creek	14,063
81-03	Lower Beaver Creek	13,448
82-01	East Creek	6,164
82-02	Teddi Esther Draw	781
82-03	Arnold Creek	2,895
82-04	Buffalo Draw	994
82-05	Three Bears Gulch	433
82-06	East Deep Creek	22,270
82-07	Oak Creek	26,553
82-08	Middle Fork Hay Creek	26,007
82-09	South Fork Hay Creek	19,961
83-01	North Redwater Creek	35,730
83-02	South Redwater Creek	71,879
83-03	Cold Springs Creek	45,101
83-04	Grand Canyon	33,116
83-05	Sand Creek	42,742
83-06	Red Canyon	53,038
83-07	Shephard Gulch	16,193
83-08	Crow Creek	19,505
85-01	Upper Spearfish Creek	55,321
85-02	Little Spearfish Creek	17,966
85-03	Lower Spearfish Creek	48,987
85-04	False Bottom Creek	36,311
86-01	Whitewood Creek	37,359
87-01	Bear Butte Creek	46,777
87-02	North Spring Creek	1,872
88-01	Elk Creek	31,676
88-02	Little Elk Creek	11,624
88-03	Piedmont Creek	2,825
88-04	Stagebarn Canyon	17,598
88-05	North Pleasant Valley Creek	44,613
89-01	Upper Boxelder Creek	26,617
89-02	South Boxelder Creek	10,349
89-03	Lower Boxelder Creek	41,193
89-04	Jim Creek	8,159

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<b>Watershed No.</b>	<b>Watershed Name</b>	<b>Area (Acres)</b>
89-05	Bogus Jim Creek	6,631
90-01	Upper Alkali Creek	3,799
91-01	Upper Rapid Creek	22,632
91-02	North Fork Rapid Creek	22,011
91-03	Middle Rapid Creek	22,104
91-04	Slate Creek	23,311
91-05	Lower Rapid Creek	60,702
91-06	Deer Creek	5,440
91-07	Prairie Creek	6,543
91-08	Victoria Creek	7,950
93-01	Upper Castle Creek	57,873
93-02	Lower Castle Creek	35,658
95-01	Spring Creek	43,130
95-02	Newton Fork Creek	20,267
95-03	Lower Spring Creek	56,248
96-01	Battle Creek	25,186
96-02	Iron Creek	12,123
96-03	Lower Battle Creek	27,375
96-04	Spokane Creek	11,054
96-05	Grace Coolidge Creek	22,834
97-01	Upper French Creek	60,889
98-01	Lame Johnny Creek	21,438
99-01	Beaver Creek	37,921
99-02	Cottonwood Creek	5,642
99-03	Highland Creek	14,237

Figure M-1. 6th Level Watersheds



# Appendix N



Large Deposits of Oil and Gas Surround the Black Hills



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**Floodplain And Wetland Lease Notice (R2-fs-2820-17 (92)) . . . . .8**

# Appendix N:

## Oil and Gas Stipulations

This Appendix contains stipulations to be used for oil and gas leasing. A map that displays areas available for leasing and the stipulations which apply accompanies this document.

### **No Surface Occupancy Stipulation (R2-fs-2820-14 (92))**

This stipulation will be included where requirements under the Standard Lease Terms are not adequate to protect the resources. The following is a partial list of the types of activities and management objectives that will require this stipulation to be included in the lease.

- Reservoirs
- Riparian areas
- Developed Recreation Areas
- Steep Slopes 40%+
- Cultural Sites
- Raptor nests
- Designated non motorized areas
- Designated significant cave locations.
- Designated Historic sites.
- Designated significant scenic landscape

R2-FS-2820-14 (92)

Serial No. \_\_\_\_\_

**NO SURFACE OCCUPANCY STIPULATION**

No surface occupancy or use is allowed on the lands described below (legal subdivision or other description).

For the purpose of:

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

### **Timing Limitation Stipulation (R2-fs-2820-15 (92))**

This stipulation will be included where requirements under the Standard Lease Terms are not adequate to protect the resources. The following is a partial list of the types of activities and management objectives that will require this stipulation to be included in the lease.

- Areas of high recreation activity
- Wildlife winter range
- Wildlife raptor nests
- Areas of high seasonal public use.
- Wildlife grouse nesting zone
- Wildlife spring elk calving range

R2-FS-2820-15 (92)

Serial No. \_\_\_\_\_

### **TIMING LIMITATION STIPULATION**

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

On the lands described below:

For the purpose of (reasons):

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

### **Controlled Surface Use Stipulation (R2-fs-2820-16 (92))**

This stipulation will be included where requirements under the Standard Lease Terms are not adequate to protect the resources. The following is a partial list of the types of activities and management objectives that will require this stipulation to be included in the lease.

- Visual Resource Management (VRM) Condition Classes II, III, IV
- Riparian Areas
- Areas of visibility to the visiting public
- Areas of known significant cave locations.

R2-FS-2820-16 (92)

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**CONTROLLED SURFACE USE STIPULATION**

Surface occupancy or use is subject to the following special operating constraints.

On the lands described below:

For the purpose of:

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

**Floodplain And Wetland Lease Notice (R2-fs-2820-17 (92))**

This stipulation will be included in all leases that contain floodplain and/or wetlands that meet the intent of Executive Order 11988 - Floodplain Management and Executive Order 11990 - Protection of Wetlands.

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## **USDA - FOREST SERVICE**

### **FLOODPLAIN AND WETLAND LEASE NOTICE**

The lessee is hereby notified that this lease contains the riparian ecosystem (Management Area \_\_\_\_, Forest Plan, pages \_\_\_\_). The lands affected include:

All activities within this area may be precluded or highly restricted in order to comply with Executive Order 11988 - Floodplain Management and Executive Order 11990 - Protection of Wetlands, in order to preserve and restore or enhance the natural and beneficial values served by floodplains and wetlands.

Management Area \_\_\_\_, the riparian ecosystem, will be managed by the Forest Service to protect from conflicting uses in order to provide healthy, self-perpetuating plant and water communities that will have optimum diversity and density of understory and overstory vegetation. Occupancy and use of lands within Management Area \_\_\_\_ proposed in a Surface Use Plan of Operations will be considered in an environmental analysis done to identify the mitigation measures necessary to protect the riparian area. Measures such as road design, well pad size and location or directional drilling, will be made part of the permit authorizing the activity.