



SOUTH DAKOTA FIELD OFFICE

FIRE MANAGEMENT PLAN

United States Department of the Interior
Bureau of Land Management
South Dakota Field Office
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ACRONYMS AND ABBREVIATIONS

ACEC	Areas of Critical Environmental Concern
AMR	Appropriate Management Response
AWP	Annual Work Plan
BLM	Bureau of Land Management
BHM	Black Hills Meridian
BMP	Best Management Practice
CAR	Communities at Risk
DOI	Department of Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMFZ	Eastern Montana Fire Zone
ESR	Emergency Stabilization and Rehabilitation
FBFM	Fire Behavior Fuel Model
FBPS	Fire Behavior Predictions Fuel Modules
FCZ	Fire Containment Zones
FIL	Fire Intensity Level
FLMPA	Federal Land Management and Policy Act of 1976
FM	Fuel Module
FMP	Fire Management Plan
FMRA	Fort Meade Recreation Area
FMU	Fire Management Unit
FMZ	Fire Management Zone
FRCC	Fire Regime Condition Class
GIS	Geographical Information System
IDIQ	Indefinite Delivery Indefinite Quantity
MCFO	Miles City Field Office
MEL	Most Efficient Level
MIS	Management Information System
MIST	Minimum Impact Suppression Tactics
NEPA	National Environmental Policy Act
NFDRS	National Fire Danger Rating System
NFMAS	National Fire Management Analysis System
NFPORS	National Fire Plan Operations Reporting System
NHPA	National Historic Preservation Act of 1966
NWCG	National Wildfire Coordinating Group
NWR	National Wildlife Refuge
NWS	National Weather Service
NYR	Normal Year Readiness
OHV	Off Highway Vehicle
PPE	Personal Protective Equipment

PFC	Proper Functioning Condition
PNVG	Potential Natural Vegetation Groups
RAMS	Risk Assessment and Mitigation Strategies Plan
RAWS	Remote Automated Weather Stations
RFA	Rural Fire Assistance
RIPS	Range Improvement Project System
RMP	Resource Management Plan
ROD	Record of Decision
ROW	Right-of-Way
SDFO	South Dakota Field Office
SDFWS	South Dakota Division of Wildland Fire Suppression
SMA	Special Management Area
SRMA	Special Recreation Management Area
T&E	Threatened & Endangered
TFM	Technical Fire Management
UAM	Unit Aviation Manager
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
VFD	Volunteer Fire Department
VRM	Visual Resource Management
WFIP	Wildland Fire Implementation Plan
WFSA	Wildland Fire Situation Analysis
WSA	Wilderness Study Area
WUI	Wildland Urban Interface

I. INTRODUCTION

The South Dakota Field Office (SDFO) manages 280,672 acres of public lands administered by the Bureau of Land Management (BLM.) BLM administered lands in South Dakota generally are small scattered tracts with the exception of the Fort Meade area at 6,700 acres and Northern Butte County at 145,000 acres of public lands. This plan was developed as a result of the Federal Wildland Fire Management Policy and Program Review (1995, 2000), National Fire Plan (2000) and the Federal Fire Policy (2001.) These policies require development of a Fire Management Plan (FMP) consistent with land management objectives for all areas subject to wildland fires. The development of this strategic FMP within the SDFO meets this requirement. An interdisciplinary approach, employing expertise from all disciplines was used to assure compliance with resource management objectives, activities of the area and environmental laws and regulations.

A. Purpose

The purpose of the BLM, SDFO FMP is to identify and integrate all wildland fire management guidance, direction, and activities required to implement national fire policy and fire management direction from the South Dakota Resource Management Plan (RMP.) Overall direction from the RMP and associated implementation plan allows fire to be used to restore ecosystems to meet resource management objectives and improve protection of human life and property through the reduction of hazardous fuels. The FMP allows management direction to be accessible by fire and resource personnel and highlights management direction to facilitate development and implementation of fire management strategies. A glossary is provided at the end of this document to assist in clarifying technical terms.

B. Relationship to Environmental Compliance

The SDFO FMP tiers to the South Dakota RMP (1985) and associated amendments as the Fire/Fuels Management Environmental Assessment/Plan Amendment for Montana and the Dakotas (2003) and gives fire managers an array of options and directions to accomplish fire management goals and objectives.

C. Collaborative Process Identification

The SDFO FMP is a strategic document identifying approved fire management direction determined by the RMP and analyzed in the final environmental impact statement (EIS). This RMP was developed with input from and consultation with representatives from federal, state and local agencies and other interested parties. The SDFO FMP meets the national requirement that all BLM administered lands subject to wildland fires are managed under a current FMP. The SDFO FMP meets regulatory compliance requirements with the National Environmental Policy Act (NEPA) as a strategic document that does not make resource management decisions or project specific implementation decisions and therefore is categorically excluded from further NEPA analysis (Categorical Exclusion 516 DM2, Appendix 1, Chapter 2, 1.10.) Prior to implementing fire management projects on-the-ground, additional environmental analysis and compliance with other federal and state

regulatory requirements, such as the National Historic Preservation Act (NHPA), the Endangered Species Act, the Clean Water Act and the Clean Air Act, will be required.

D. Authorities

Authorities for the development of the SDFO FMP are listed below.

- Protection Act of September 20, 1922 (42 Stat. 857; U.S.C. 594.)
- Taylor Grazing Act of June 28, 1934 (48 Stat. 1269; U.S.C. 315.)
- Reciprocal Fire Protection Act of May 27, 1955(69 Stat. 66; 42 U.S.C. 1856, 1856a.)
- Economy Act of June 30, 1932 (47 Stat. 417; 31 U.S.C. 686.)
- The Federal Land Management and Policy Act of 1976 (FLMPA) (Public Law 94-579; 3 U.S.C. 1701.)
- Disaster Relief Act, Section 417 (Public Law 93-288.)
- Annual Appropriations Acts for the Department of the Interior.
- United States Department of the Interior Manual (910 DM 1.3.)
- 1995 Federal Wildland Fire Management Policy.
- 2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy Update.)
- 1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures.
- Federal Noxious Weed Act (Public Law 93-628; 7 U.S.C. 2801-2813.)
- Carlson-Foley Act (Public Law 90-583)

II. RELATIONSHIP TO LAND MANAGEMENT PLANNING/FIRE POLICY

The SDFO FMP derives overall program guidance from the following:

- 2003 BLM Handbook 9214, “Prescribed Fire Management” describes authority and policy for prescribed fire use on public lands administered by the BLM.
- September 2000, “Managing the Impacts of Wildfires on Communities and the Environment.”
- October 2000, National Cohesive Strategy goal is to coordinate an aggressive, collaborative approach to reduce the threat of wildland fire to communities and to restore and maintain land health www.fireplan.gov.
- August 2001, “Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment -10 Year Comprehensive Strategy” provides a foundation for wildland agencies to work closely with all levels of government, tribes, conservation, and commodity groups and community-based restoration groups to reduce wildland fire risk to communities and the environment.

- May 2002, “Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10 Year Comprehensive Strategy – Implementation Plan.”
- August 2002, “Healthy Forests - An Initiative for Wildfire Prevention and Stronger Communities.”
- 1987 Cultural Resource Management Plan for the Fort Meade Recreation Area.
- 1994 Miles City District Oil and Gas RMP/EIS Amendment.
- 2003 Off Highway Vehicle (OHV) EIS and Plan Amendment for Montana, North Dakota, and South Dakota.
- 1998 Environmental Assessment (EA) and Plan Amendment of Billings, Powder River, and South Dakota RMPs for ACEC Protection Plan.
- 1997 Standards for Rangeland Health and Guidelines for Grazing Management EIS.
- 1985 South Dakota RMP.
- 1996 Resource Management Plan Amendment and EA for the Fort Meade Recreation Area, Area of Critical Environmental Concern (ACEC.)
- 2003 Exemption Area Wildland Urban Interface Project EA.
- 2003 Healthy Forests Restoration Act.

Using the program guidance, the SDFO will employ a variety of strategies within the SDFO in meeting the following management goals, standards and guidelines from the following plans: the South Dakota RMP (1985) and associated amendments, the Fire/Fuels Management Environmental Assessment/Plan Amendment for Montana and the Dakotas (2003.) Broad programmatic directions are:

- Protect/maintain existing riparian areas in properly functioning condition (PFC.)
- Improve riparian areas that are functioning at risk and non-functioning by implementing best management practices (BMP) to promote health and vigor of preferred plant species and maintain a desired plant community.
- Maintain air quality to meet or exceed applicable federal and state standards and regulations.
- Reduce fire risk to Wildland Urban Interface (WUI) communities. Operationally the roles of federal agencies are as partners in wildland firefighting, hazardous fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of tribal, state, or local governments. Federal agencies may assist with exterior structural protection activities under a formal fire protection agreement.
- Manage for healthy and balanced populations of native wildlife in their natural habitat.
- Manage the habitat for threatened and endangered (T&E) species of plants and animals to keep viable populations in their natural ecosystems.
- Management tools such as mechanical thinning, prescribed fire, biological, cultural and/or chemical treatments may be used to promote greater diversity within plant communities.

- Utilize BMP with land treatments to conserve site moisture and protect long-term stream health from damage of increased runoff.
- Establish a fire effects monitoring system that inventories pre-burn species composition and resulting post fire response.
- Implement interagency fire prevention strategies that reduce the occurrence of unplanned human ignition.
- Manage the areas for aesthetics and minimize all visual impacts as much as practical.

III. WILDLAND FIRE MANAGEMENT STRATEGIES

A. General Management Considerations

In order to comply with direction provided in current National Fire Plan guidance, the RMP as amended and additional documents cited in Section II.A., the SDFO will:

- Use fire to restore and/or sustain ecosystem health based on sound scientific principles and information, balanced with other societal goals, including public health and safety, and air quality.
- Provide an appropriate management response (AMR) on all wildland fires, emphasizing minimization of suppression costs, considering firefighter and public safety, benefits and values to be protected consistent with resource objectives, and meeting standards and guidelines.
- Meet management goals and objectives through the use of prescribed fire, mechanical, chemical, biological, and cultural treatments.
- Work collaboratively with communities at risk (CAR) within the WUI to develop plans for risk reduction.
- Work collaboratively with federal, state, and local partners to develop cross boundary management strategies, operational procedures, education and prevention programs and prioritize cross agency fire management actions.

B. Wildland Fire Management Goals

The SDFO will conduct all wildland fire management actions in compliance with the 1995 Federal Wildland Fire Policy, the 2001 Federal Wildland Fire Policy Update guiding principles and the Interagency Standards for Fire and Fire Aviation Operations 2004. These principles are:

- **Firefighter and public safety are the highest priority in every fire management activity.**
- Assess risk to communities in terms of direct wildland fire impact and economic values, and implement effective programs to mitigate that risk through collaborative planning and projects.
- Implement the full range of fuels management practices, including prescribed fire, mechanical, chemical, biological, and cultural treatments that will move all affected landscapes toward desired future condition as described in the RMP.

- Establish partnerships with all interagency cooperators to develop compatible training and qualification requirements, operational procedures, value assessments, and public education programs for all fire management activities.
- Develop and use the best scientific information available to deliver technical and community assistance to support ecological, economic, and social sustainability.
- Create an integrated approach to fire and resource management.

Specific fire programmatic direction for each Fire Management Unit (FMU) of the SDFO is outlined in Chapter III, Section D of the SDFO FMP.

C. Wildland Fire Management Options

The SDFO does not fund a staff for fire suppression. The Eastern Montana Fire Zone (EMFZ), Miles City Field Office (MCFO) fire program provides suppression for the Harding County, South Dakota FMU. All other lands within the state are protected by federal, state, local and county fire departments through existing interagency agreements listed in Chapter V: Section B. The SDFO will provide an AMR on all wildland fires using intergovernmental orders or interagency agreements. Emphasis will be placed on minimizing suppression costs, considering fire fighter and public safety, benefits and values to be protected consistent with resource objectives, standards and guidelines. Responses to each wildland fire will be initiated in a timely manner with suppression resources, based upon established fire management direction as documented in the approved RMP and associated amendments.

D. Description of Wildland Fire Management Strategies by Fire Management Unit

This FMP establishes geographic areas as FMUs. In this section, the FMP establishes prescriptive criteria and other guidance, which provide additional direction to allow managers to implement the objectives of the RMPs and activity-level plans for each FMU.

All three FMUs within South Dakota are designated Category "B."

Categories "B" are areas where unplanned wildland fire is not desired and likely to cause negative effects because of current conditions.

Suppression Strategy:

Use AMR to suppress all fires in accordance with management objectives based on current conditions and fire location. AMR strategies will be tailored to address areas where plant communities are at risk due to current conditions, time of year or other ecological constraints. Multiple fire priority is high.

Rationale for Categorization:

Unplanned ignitions would have negative effects, including risks to private lands, urban interfaces, cultural resources, and visitor use areas.

Fire/Fuels Management Activities:

Suppression required; fire and non-fire fuels treatments may be used.

E. Category B Fire Management Units (FMUs)

1. B2 Exemption Area FMU

Location:

This FMU is located at T 4,5N R 3E Black Hills Meridian (BHM.) It is approximately 50 miles northwest of Rapid City in Lawrence County, South Dakota. The Exemption Area is 22,400 acres of mixed ownership lands. This area includes 5,220 acres of public land (23 percent of the total area) managed by the SDFO that is intermingled with private land (77 percent of the total area) around the communities of Deadwood and Lead, South Dakota. The Exemption Area is surrounded by United States Forest Service (USFS) lands administered by the Black Hills National Forest.

Characteristics:

The area consists primarily of ponderosa pine with a mixed grass/brush understory. The topography in the Exemption Area is steep rocky slopes ranging from 30 to 90 percent with dissecting drainages. Forested lands cover approximately 90 percent of the public lands. Average annual precipitation ranges from 18 to 22 inches. This FMU has multiple steep rocky slopes. Elevations range from 4500' to 7000'. Whitewood Creek is the primary drainage to the north and east. Throughout the FMU, all aspects are represented. This FMU is accessed by a road network ranging from paved all weather to narrow and steep two track unimproved trails. Various roads cross private lands with locked gates that limit public access. Dispersed recreation takes place throughout the area. Agencies that border this FMU are BLM, USFS, and State of South Dakota, municipal boundaries and Lawrence County. This area is best represented by Fire Behavior Fuel Model (FBFM) 2 which is pine with a grass understory and FBFM 9 which is a forest timber litter fuel model.

Fire History:

Between 1984 and 2003, federal, county and state agencies responded to 28 fires that burned an estimated 12 acres. Average fire size was .4 acres. The Grizzly Gulch fire of 6/29/2002 was the exception, burning a total of 11,589 acres, 1,982 acres of which were BLM lands.

Fire Regime/Condition Class (FRCC):

The Standard Landscape Method was applied to characterize FRCC for the Exemption Area FMU, per direction in the *Interagency Fire Regime Condition Class Guidebook* (Hann et al., 2002.) One potential natural vegetation group (PNVG) makes up the Exemption Area FMU: (1) Ponderosa Pine.

Table 1. FRCC Within the Exemption Area FMU

Exemption Area FMU				
PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PPIN9	I	III	22,400	100

The ponderosa pine strata are in Condition Class III, as a result of advanced succession and highly altered fire regime. In this PNVG, uncharacteristic succession and numerous missed

fire intervals have caused a high departure in FRCC. Potential FRCC changes in these strata include mechanical treatments as well as prescribed burning.

Values at Risk:

Intermixed private lands, forest ecosystem, and historical and cultural sites are values at risk. The most significant concern is the amount and proximity of the existing urban interface. The risk of wildland fire in an urban interface area is a major concern in the Exemption Area. Most of the land in this area lies within 3 miles of either Deadwood or Lead. Dozens of permanent and vacation homes, businesses, municipal buildings, industrial and commercial developments are in close proximity to BLM administered public lands and hazardous fuels. Former mining lands are being sold off and subdivided throughout the Exemption Area expanding the urban interface. The combination of steep slopes and dense stands of pine cover create a hazardous fuel load for much of the area. Private lands will place constraints on fire management opportunities and will require close coordination and consultation with state and local government, private landowners and the USFS.

Other concerns focus around air quality and smoke dispersal, aesthetics, social and political considerations on both permanent residents and the visiting public.

The Exemption Area has been heavily explored and mined since the time of European-American settlement. Many mine features have not been reclaimed and are unmarked. Heavy equipment operators and personnel should use extreme caution to avoid mishaps with unmarked mining features throughout the area. Mine features should not be entered by personnel or approached by equipment or personnel, due to the danger of falling rock, collapsing tunnels, and the danger of falling and crumbling edges of shafts.

Communities at Risk (CAR):

The Federal Register CAR list includes the communities of Lead, Deadwood, Central City, Pluma and Englewood. Numerous additional residential and commercial developments recognized by state and local cooperators as CAR are scattered throughout the private lands within the boundaries of this area. This includes a large number of mostly permanent dwellings, many of which are built within a few feet of public land.

Fire Management Objectives:

The following objectives are found in the South Dakota RMP and the Exemption Area WUI EA.

- Reduce the canopy closure to less than 40 percent, increase the spacing between crowns to 10 to 15 feet, increase the spacing between boles to 20-25 feet, and decrease the basal area to 60-80 square feet.
- In hardwood clumps (areas where hardwoods are the dominant species) that are approximately 1-acre or larger, remove all conifers, ponderosa pine and white spruce inside and within 66 feet of the hardwood clump.
- Implement an interagency vegetative management strategy to reduce fuels, reduce the potential for human caused fires, restoration and rehabilitation, fuels management to reduce wildland fire severity. Prescribed fire may be used in conjunction with mechanical and other treatments to meet this objective.

Fire Management Strategy:

Suppression:

Wildland fire is not desired due to urban interface and scattered land pattern. Consistent with BLM 9200 Manual and the Interagency Standards for Fire and Fire Aviation Operations 2004, Montana/Dakotas East Zone Fire Managers will make an aggressive initial attack fire suppression response primarily through Cooperative Agreements and approved operating plans. These agencies would include the USFS, Black Hills National Forest, the South Dakota Division of Wildland Fire Suppression (SDWFS), Lead City Fire Department and the Deadwood City Fire Department. The SDFO will use an aggressive AMR with the intent of protecting life, property and natural resources, and protecting cultural and historic resources and minimizing cost. The AMR is guided by the suppression targets listed by Fire Intensity Level (FIL.) All fires occurring at FILs 1-3 will be suppressed at <10 acres 90 percent of the time. All fires occurring at FIL 4-6 will be suppressed at <10 acres 75 percent of the time.

Constraints:

Use of heavy equipment is restricted in riparian areas, streamside zones and identified cultural properties in order to reduce impacts to sensitive soils and plants and to minimize soil erosion.

The area around the Belle Eldridge Mine, southeast of Deadwood, was contaminated with heavy metals from mining activities. This reclaimed mine is located in the W1/2 NW1/4 of Sec. 25, and the E1/2 NE1/4 of Sec. 26, T.5N., R.3E., BHM. This area has been cleaned up, however, due to the fragility of the slowly reestablishing vegetation and the possibility of exposing tailings that may have been missed, the soils and surface rocks in the reclaimed area should not be disturbed. The permanent tailings repository, defined by a permanent fence as well as “no entry” signs, and located in the W1/2 NE1/4 of Sec. 25, T.5N, R.3E, BHM, should not be disturbed. It has a very expensive subsurface cap which must be protected

Use of heavy equipment is excluded from the Belle Eldridge Mine, Repository and other observed mine features for safety purposes. Mechanical and fire treatments are addressed in site-specific documents and project plans. Review Appendix A Section 2.5.1.1-1, 2, 3, 4, 5 and Section 2.5.3.1-8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 23, 29, for specific management constraints which apply to this FMU.

Wildland Fire Use:

The South Dakota RMP does not allow wildland fire use. Opportunities for wildland fire use will not be discussed in this plan.

Prescribed Fire:

In cooperation with the cities of Lead, Deadwood and Central City, Lawrence County, SDWFS, and the USFS, Black Hills National Forest, a project is underway to reduce the forest density and fuel hazard on 2,675 acres of BLM lands within the WUI, using multi-step treatments, beginning with commercial tree removal and ending with prescribed fire treatments. Forest removal will be followed by machine piling, hand piling and burning the piles and other concentrations of fuel.

There is potential for 6,044 acres of similar treatments on adjoining private lands. Treatments on up to 2,500 acres additional BLM surface are possible due to expanding WUI and the Healthy Forest Act.

Treatment along 13 miles of Fire Containment Zones (FCZ) across BLM surface to provide safe corridors to contain fires will be implemented. The term “Fire Containment Zones” was identified during the planning process by local and state cooperators who felt that the usual definition for “fuel breaks” would not fit their desire to have a safe corridor where firefighters could make a safe attack and provide safe access and egress. An FCZ corridor still has some resemblance of a natural forest appearance; i.e., variation in spacing with tree diameter and the retention of some small patches of seedling/saplings (less than ¼-acre size.) Potential also exists for an additional 65 miles on adjoining private and Black Hills National Forest lands. These FCZs have been incorporated into the county and USFS planning process.

Desired plant communities resulting from the above treatments will be maintained with 500 to 1,000 acres of prescribed burning or other fuel reduction methods annually within 5 to 10 years of project completion.

Non-fire fuels Treatment:

An interagency effort involving local, state and the Black Hills National Forest is currently underway to reduce fuel hazard on 2,675 acres of BLM lands and 6,044 acres of adjoining private lands. These lands are within the WUI area and fuel treatments are primarily multi-step, beginning with commercial removal. Fuel hazard treatments on up to 2,500 acres additional BLM surface are possible due to expanding WUI and the Healthy Forest Act.

Post Fire Rehabilitation and/or Actions Needed for Restoration:

Approximately eight projects totaling 800 acres of mechanical treatments are planned for each year across the SDFO. These areas will be moved from Condition Class III to Condition Class II or I. Currently there has been no public interest in biomass other than saw logs and minimal amounts of firewood. Two projects are currently under stewardship contracting for 57 acres.

All specific non-fire fuels treatment project plans include pre/post project criteria. For specific action items refer to each individual project plan.

Equipment and seasonal use restrictions are identified in Appendix A. Specific project area restrictions are located in the project plans. For information on the restrictions refer to the individual project plans.

Monitoring requirements are developed in response to resource management and project objectives from interdisciplinary input. For information on the requirements refer to the individual project plans.

Project level reporting requirements have been established and include submissions in Rangeland Improvement Project System (RIPS), Annual Work Plan (AWP), Management Information System (MIS), and National Fire Plan Operations Reporting System (NFPORS.)

Documentation requirements including weather, monitoring, and project notes are completed or reviewed by the project manager. For information on the requirements refer to the individual project plans.

Community Protection/Community Assistance:

City of Lead and Lawrence County have community protection plans. Fuel reduction projects are performed adjacent to BLM lands. The SDFO is engaged in training and education with local residents and fire departments. Community assistance/protection strategies are:

- Fires are suppressed at a minimum cost, considering firefighter and public safety, benefits and values to be protected, consistent with resource objectives.
- Provide planning and implementation assistance to private landowners and CAR to reduce hazardous fuels as identified in county mitigation plans.
- Maintain mutual aid agreements with county, city and volunteer fire departments (VFD.)
- Continue to support fire departments through the use of Rural Fire Assistance (RFA) grant opportunities and making available surplus federal wildland fire apparatus and equipment to increase the local fire departments' wildland fire capabilities.
- Continue to collaborate with and support county governments and fire suppression agencies in the development and implementation of countywide wildfire mitigation plans through community assistance/protection, considering CAR.
- Continue to focus on public prevention/education activities relating to the reduction of human caused wildland fire ignitions and the promotion of defensible space through Firewise education.
- Use fuels treatments to move toward a natural fire regime and Condition Class I.

2. B3 Fort Meade Recreation Area, Area of Critical Environmental Concern (ACEC)

Location:

This FMU is located in T 5,6N, R5E in Meade County 30 miles Northwest of Rapid City within the confines of the historical Fort Meade Military Reservation. This multiple use area contains 6,700 acres of public lands. The FMUs' political boundaries include BLM, USFS, Meade County, the State of South Dakota, Veterans Administration, Black Hills National Cemetery, Bear Butte State Park, City of Sturgis, private land and the Meade County School District.

Characteristics:

The major vegetative types in the area are mid-grass prairies and ponderosa pine, bur oak, and smooth brome. Plants include bluestem, western wheatgrass, green needle grass, smooth brome, alpine timothy and pine grass. Average annual precipitation ranges from 18 to 22 inches. The elevation ranges from 3200 to 4300 feet. Topography consists of rolling grass-covered hills, steep slopes, rocky ledges, and high hills covered with a combination of mid-grasses and ponderosa pine. This FMU is accessed by a road network suitable for two-wheel drive vehicle traffic. Dispersed recreation takes place throughout the area. Motorized travel is restricted to designated roads except in emergency situations.

Ponderosa pine stands range from thick closed canopy represented by FBFM 9 to open, scattered pine with grass understory represented by FBFM 2. Grassland areas containing, Canadian wild rye and assorted bromes are represented by FBFM 1.

Fire History:

Between 1984 and 2003, local cooperating agencies responded to six fires that burned an estimated 512 acres. Average fire size was 85.3 acres. Fire ignitions were predominately human caused.

Table 2. Fort Meade Recreation Area ACEC Fire History by Fire Size Class

Fire History by Fire Size Class									
FMU	Fire Class							Total # Fires	Total Acres
	A	B	C	D	E	F	G		
Fort Meade	2	2	1	0	1	0	0	6	512
TOTALS	2	2	1	0	1	0	0	6	512

Fire Regime/Condition Class:

The Standard Landscape Method was applied to characterize FRCC for the Fort Meade FMU, per direction in the *Interagency Fire Regime Condition Class Guidebook* (Hann et al., 2002.) Two PNVGs make up the Fort Meade FMU: (1) Ponderosa Pine and (3) Plains Grasslands with Shrub.

Table 3. FRCC Within the Fort Meade Recreation Area ACEC FMU

Fort Meade Recreation Area ACEC FMU				
PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PPIN9	I	III	2,680	40
PGRA3	I	II	4,020	60

The ponderosa pine strata are in Condition Class III, as a result of advanced succession and highly altered fire regime. In this PNVG, uncharacteristic succession and numerous missed fire intervals have caused a high departure in FRCC. Potential FRCC changes in these strata include mechanical treatments as well as prescribed burning.

The plains grasslands with shrub strata are in Condition Class II, corresponding to moderate levels of departure as a result of conifer encroachment. In addition, this strata is in Condition Class II as a result of removing fire as an ecological process. Potential FRCC changes in these strata may be possible through mechanical and prescribed fire.

Values at Risk:

Historical buildings, recreation sites, visual resources, range improvements and wildlife habitat are at risk. This area is a designated ACEC and contains historic and cultural sites. It is adjacent to the city of Sturgis, Fort Meade Medical Center, Black Hills National Cemetery, and housing developments. Special concerns and constraints include cultural, paleontological

and vegetative values that might be affected by fire fighting equipment and the use of earth moving/tillage equipment.

Communities at Risk:

The west boundary of the FMU is adjacent to the east side of Sturgis city limits. The National Register CAR list includes Sturgis, Historic Fort Meade, Fort Meade Medical Center, Black Hills National Cemetery and Blucksburg Estates and other housing developments that are adjunct to the FMU.

Fire Management Objectives

The following objectives are found in the Fort Meade Recreation Area ACEC Management Plan:

- Enhance or preserve the overall visual character of the Fort Meade Recreation Area (FMRA.) Ensure that any discretionary action is compatible with the existing historic landscape.
- Remove and control pine encroachment in meadow areas and deciduous draws using prescribed fire and or selective fuel woodcutting.
- Maintain existing acreage and increase regeneration of hardwoods through selective fuel woodcutting, prescribed burning and grazing management.
- Maintain existing stands of ponderosa pine, control insect and disease infestations, prevent excessive fuel buildups and reduce safety hazards.
- Maintain and preserve the historic structures and associated resources contributing to the historic landscape.
- Increase vegetation diversity and effective edge (transitional zones where two plant communities or successional stages meet); retaining and enhancing key habitat components for game and non-game wildlife species.
- Maintain the 40-acre Blucksberg Fuel Break through prescribed fire and other fuel reduction methods. Other fuel treatments in these areas may be considered as needed by a site-specific plan.

Wildland fire is not desired due to urban interface and ACEC values. The AMR to wildland fire within the Fort Meade ACEC would be aggressive fire suppression in order to protect resource values, adjacent residential and city interface property. Hazardous fuel reduction efforts may be initiated to reduce the threat of wildland fire to adjacent private land and structures. Prescribed fire may be desirable. However, concerns focus around structural developments and historical areas. Social and political considerations will dictate how each fire occurrence will be managed.

Fire Management Strategy:

Consistent with the Interagency Standards for Fire and Fire Aviation Operations 2004, Montana/Dakotas East Zone Fire Managers will make an initial attack fire suppression response primarily through Cooperative Agreements and approved Operating Plans. An agreement exists with the Fort Meade Veterans Administration's Fort Meade Fire Department for initial attack. The SDWFS is also a cooperator within this FMU.

Suppression:

Suppress all fires using the AMR with the intent of protecting life and property, protecting cultural and historic resources and protecting natural resources, and minimizing cost. The AMR is guided by the suppression targets listed by FIL. All fires occurring at FILs 1-3 will be suppressed at <10 acres 90 percent of the time. All fires occurring at FILs 4-6 will be suppressed at <10 acres 75 percent of the time.

Management Constraints:

Use of heavy equipment is restricted to the upland areas in order to reduce impacts to sensitive soils and plants and to minimize soil erosion. Review Appendix A Section 2.5.1.1-1, 2, 3, 4, 5, 7 and Section 2.5.3.1-8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 23, 29, 31, 32, 33 for specific management constraints which apply to this FMU

Wildland Fire Use:

The South Dakota RMP does not have provisions for wildland fire for resource benefit.

Prescribed Fire:

Prescribed fire is used to protect, maintain or enhance native plants and sensitive plant communities, reduce the spread of exotic plant species, reduce hazardous fuels, and stimulate grasses, forbs, shrubs or trees.

Non-Fire Fuels Treatments:

Non-fire fuels treatments are utilized for controlling forest insect infestation, facilitating cultural surveys and controlling pine encroachment on 100 to 200 acres annually.

Silvicultural treatments are applied to reduce fuels and promote forest health.

Post Fire Rehabilitation and/or Actions Needed for Restoration:

Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health and safety, and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatments will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the landscape, reduce the potential for erosion, invasion of noxious weeds and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistance:

Meade County has completed a countywide hazard assessment and community fire protection plan and a community assistance agreement with Montana/Dakotas BLM. This plan has identified priority treatment areas, including treatment of fuels in and adjacent to Blucksburg Estates where a joint effort between the county, the SDWFS and the BLM have treated 100 acres of hazardous fuels. Short-term plans for BLM lands near the Black Hills National Cemetery include 65 acres of fuel hazard reduction. This treatment unit is adjacent

to the cemetery and other private development. The national cemetery, the county and the state will be involved in planning this project.

Community assistance/protection strategies are:

- Fires are suppressed at a minimum cost, considering firefighter and public safety, benefits and values to be protected, consistent with resource objectives.
- Provide planning and implementation assistance to private landowners and CAR to reduce hazardous fuels as identified in county mitigation plans.
- Maintain mutual aid agreements with county, city and VFDs.
- Continue to support fire departments through the use of RFA grant opportunities and making available surplus federal wildland fire apparatus and equipment to increase the local fire departments' wildland fire capabilities.
- Continue to collaborate with and support county governments and fire suppression agencies in the development and implementation of countywide wildfire mitigation plans through community assistance/protection, considering CAR.
- Continue to focus on public prevention/education activities relating to the reduction of human caused wildland fire ignitions and the promotion of defensible space through Firewise education.

3. B4 Remainder of the SDFO FMU

Location:

Excluding those lands within the two previous FMUs, the remainder of the SDFO FMU includes all BLM lands in South Dakota west of the Missouri, plus 520 acres east of the Missouri River in Brule County T70W, R101N 5th Principal Meridian. This FMU encompasses 268,752 BLM administered acres, mostly in scattered isolated tracts throughout South Dakota. Land ownerships within the area include the BLM, USFS, State of South Dakota, counties, municipalities, Native American reservation lands and private lands.

Characteristics:

The vegetation in this FMU is comprised of short and mixed-grass prairie interspersed with sagebrush and western juniper in the Belle Fourche and Cheyenne River breaks. The topography consists of rolling grasslands, steep timber, woodland covered draws and badlands. Elevations range from 1,200 to 7,242. The highest elevation is Harney Peak in the Black Hills and the lowest elevations are along the Missouri River. Precipitation varies from 13 to 17 inches in an average year. This FMU is accessed by a road network suitable for two-wheel drive vehicle traffic. Various roads cross private lands with locked gates that limit public access. Dispersed recreation and grazing takes place throughout the area. Motorized travel within the Fossil Cycad ACEC is restricted to designated roads except in emergency situations.

Ponderosa pine stands range from thick closed canopy represented by FBFM 9 to open, scattered pine with grass understory represented by FBFM 2. Grassland areas containing alpine timothy, pine grass, Canadian wild rye and assorted bromes are represented by FBFM 1. Shrub lands containing Rocky Mountain juniper, bur oak, cottonwood, ash, elm, and sagebrush mixed with a grass understory are represented by FBFM 6.

Fire History:

Wildland fire history is shown for all BLM administered lands in South Dakota except for Harding County in which the fire history is included in the MCFO FMP. Between 1984 and 2003, federal, state and local agencies responded to 72 fires which burned an estimated 30,415 acres. Average fire size was 422 acres. Due to the land pattern wildfires in the FMU typically burn across ownership boundaries.

Table 4. Remainder of the SDFO FMU Fire History by Fire Size Class

Fire History by Fire Size Class									
FMU	Fire Class							Total # Fires	Total Acres
	A	B	C	D	E	F	G		
Exemption Area/South Dakota	21	32	11	1	2	3	2	72	30,415
TOTALS	21	32	11	1	2	3	1	72	30,415

Fire Regime/Condition Class:

The Standard Landscape Method was applied to characterize FRCC for the South Dakota FMU, per direction in the *Interagency Fire Regime Condition Class Guidebook* (Hann et al., 2002.) Two PNVGs make up the South Dakota FMU: (1) Plains grasslands with shrub and (2) Plains grasslands with trees.

Table 5: FRCC Within the Remainder of the SDFO FMU

Remainder of the SDFO FMU				
PNVG	Historic Fire Regime	Condition Class	Acres	% of FMU
PGRA3	I	II	19,550,000	85
PGRA2	I	II	3,450,000	15

The plains grasslands with shrub strata is in Condition Class II, corresponding to moderate levels of departure as a result of conifer encroachment. In addition, this strata is in Condition Class II as a result of removing fire as an ecological process. Potential FRCC changes in these strata may be possible through mechanical and prescribed fire.

The plains grasslands with trees strata is in Condition Class II, corresponding to moderate levels of departure as a result of higher density of conifers. In addition, this strata is in Condition Class II as a result of removing fire as an ecological process. Potential FRCC changes in these strata may be possible through mechanical and prescribed fire.

Values at Risk:

These scattered tracts are mostly within grazing allotments. Hunting and dispersed recreation are the primary public uses. There are minimal opportunities where commercial timber or post and pole products would be available. Values include wildlife habitat, especially sagebrush, riparian zones, public and private properties, forage and the Fossil Cycad ACEC. The scattered land pattern is intermixed with state and private lands

Communities at Risk:

This FMU includes the National Register CAR of Belle Fourche, Buffalo, Camp Crook, Cascade Springs, Custer Highlands, Dewey, Hermosa, Hot Springs, Minnekahta, Pringle, Rapid City, Reva, and Sturgis. However the minimal scattered tracts which may contain hazardous fuels are generally several miles from these communities and do not pose a threat to the CAR. These need to be assessed in the next planning cycle scheduled for 2008. The remaining interface consists of those scattered tracts adjacent to ranch buildings and will also need to be assessed. After identifying those tracts needing fuel hazard treatment, opportunities for cooperative projects would be pursued with adjoining landowners.

Fire Management Objectives/Desired Future Condition -

The following objectives/desired future conditions are found in the Fire/Fuels Management Plan EA/Plan Amendment for Montana and the Dakotas:

- Sustain ecological health and function of fire-adapted ecosystems, minimize adverse effects of wildland fire suppression, and use fuels management methods to reduce hazardous fuels while meeting other resource objectives.
- Protect, maintain, preserve and/or restore habitats necessary for the conservation of species and the ecosystems upon which they depend. Maintain viable and diverse populations of native plant, animal and aquatic species including special status species.
- Improve ecosystem health and maintain or restore the range of ecological conditions in which native aquatic, vegetative, terrestrial and special status species evolved. Manage native vegetation to meet standards for rangeland health. Sagebrush habitats, especially those in identified sage grouse nesting and wintering areas and big game concentration areas should be maintained. Manage for healthy perennial vegetation and to reduce noxious weed infestations.
- Protect high value cultural and paleontological resources by limiting use of heavy equipment in these sites.
- Maintain stable soils and sustain current land uses.

The AMR to wildland fire would generally be aggressive fire suppression. Prescribed fire could be used in the Remainder of the SDFO area to reduce hazardous fuels or to meet other resource management objectives. The BLM could also be a cooperator on a prescribed fire initiated by another party.

The following concerns/objectives are found in the ACEC EA for the Fossil Cycad Area:

- Within the Fossil Cycad ACEC, the fire situation will be carefully analyzed before committing heavy equipment. BLM will use the AMR based on cost, consideration of resource loss and benefits, firefighter and public safety and threats to private property. Intensity level of fire suppression is not predetermined and will vary with conditions, including impending weather forecasts, conditions of vegetation and firefighting forces committed to other fires.
- Wood product sales within the Fossil Cycad ACEC are prohibited to protect the integrity of the paleontological resources.

Fire Management Strategy:

Consistent with BLM 9200 Manual and the Interagency Standards for Fire and Fire Aviation Operations 2004, Montana/Dakotas East Zone Fire Managers will make an appropriate suppression response primarily through cooperative agreements and approved operating plans.

Suppression:

Suppress all fire using the AMR with the intent of protecting life and property, protecting paleontological, cultural and historic resources, protecting natural resources, and minimizing cost. The AMR is guided by the suppress targets listed by FIL. All fires occurring at FILs 1-3 will be suppressed at <100 acres 90 percent of the time. All fires occurring at FILs 4-6 will be suppressed at <300 acres 75 percent of the time.

Management Constraints:

Protecting the fossil resource within the Fossil Cycad ACEC will dictate the use of AMR employing Minimal Impact Suppression Tactics (MIST.) Review Appendix A Section 2.5.1.1-1, 2, 3, 4, 5, 6 and Section 2.5.3.1-8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30 for specific management constraints which apply to this FMU.

Use of heavy equipment and other vehicles off designated roads and trails is prohibited in the Fossil Cycad ACEC northeast of Edgemont to protect geologic and paleontological values. Oil wells south of Edgemont contain hydrogen sulfide, which poses a safety concern for firefighters in the area. Obvious concerns include structural developments, croplands, livestock and livestock forage needs. Social and political considerations will dictate how each fire occurrence will be managed.

Wildland Fire Use:

The South Dakota RMP does not have any provisions for wildland fire for resource benefit.

Prescribed Fire:

Prescribed fire will be used to enhance vegetation and habitat and reduce hazardous fuels. Prescribed fire may be used to meet resource objectives, such as restoring fire adapted grass and shrub lands, or increasing variation of age classes in shrub lands. Treatments would be designed to achieve mosaic patterns.

Under the present staffing levels, the SDFO anticipates treating 100 acres every three years with the potential to increase those acres. However, due to priority project areas and workload within the WUI areas, the field office will not be able to successfully increase any treatment acres in the FMU.

Non-fire fuels Treatment:

Potential timber and post sales may be used to decrease fuel density and reduce encroachment into meadows.

Post Fire Rehabilitation and/or Actions Needed for Restoration:

Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health and safety and to help communities protect infrastructure.

Based on the potential effects of wildland fires to overall water quality and riparian systems, suppression, rehabilitation and fuels treatments will be carried out according to the Emergency Stabilization and Rehabilitation Guide (ESR) DM 620-3.

Management actions during wildfire events, prescribed fire or mechanical treatments will be conducted in the manner necessary to maintain the existing visual character of the landscape, reduce the potential for erosion, invasion of noxious weeds and reduce the potential for the establishment of new roads and trails.

Community Protection/Community Assistance:

The SDFO is currently working with the counties of Butte, Pennington, and Custer to develop community fire protection plans. This is a cooperative effort with other federal agencies as well as local partners including the USFS, Black Hills National Forest, Wind Cave National Park, Badlands National Park, Buffalo Gap National Grasslands and the State of South Dakota.

Community assistance/protection strategies are:

- Fires are suppressed at a minimum cost, considering firefighter and public safety, benefits and values to be protected, consistent with resource objectives.
- Provide planning and implementation assistance to private landowners and CAR to reduce hazardous fuels as identified in county mitigation plans.
- Maintain mutual aid agreements with county, city and VFDs.
- Continue to support fire departments through the use of RFA grant opportunities and making available surplus federal wildland fire apparatus and equipment to increase the local fire departments' wildland fire capabilities.
- Continue to collaborate with and support county governments and fire suppression agencies in the development and implementation of countywide wildfire mitigation plans through community assistance/protection, considering CAR.
- Continue to focus on public prevention/education activities relating to the reduction of human caused wildland fire ignitions and the promotion of defensible space through Firewise education.

IV. FIRE MANAGEMENT COMPONENTS:

A. Wildland Fire Suppression

The SDFO FMP is based on the concept that all wildland fires will be subject to an initial response (initial action.) Copies of the FMP outlining constraints and management objectives will be made available to cooperators who provide suppression services.

1. Fire History

Between 1984 and 2003 there were 78 fires that occurred in the area included in this FMP. Approximately 95 percent of the fires were lightning caused and 5 percent were human caused. These fires generally occurred between the months of May and August. Human caused fires are usually associated with main travel corridors.

Multiple-fire days consisting of 3 to 5 fires or more per day have occurred 6 times.

The number of incidents varies from year to year and is dependent on the amount of moisture associated with lightning-producing thunderstorms. The size of fires fluctuates from year to year depending on the availability of the primary fire carrier. Annual grasses and brush are the primary fire carriers in the lower to middle elevations, and their growth is dependent upon precipitation received during the late winter and spring months. At the higher elevations primary fire carriers are pine needles and litter.

While the majority of this field office experiences primarily Class A, B and C fires, the area has a history of large fire activity. A total of six fires, classes E & F have occurred.

Table 6. SDFO Fire History by Size Class

Fire History by Fire Size Class									
FMU	Fire Class							Total # Fires	Total Acres
	A	B	C	D	E	F	G		
Exemption Area/South Dakota	21	32	11	1	2	3	2	72	30,415
Fort Meade	2	2	1	0	1	0	0	6	512
TOTALS	23	33	12	1	3	3	2	78	30,927

2. Suppression/Preparedness Actions

Use AMR to suppress all fires in accordance with management objectives based on current conditions and fire location. A response can vary from an aggressive initial action to monitoring. AMR strategies would be tailored to address areas of significant constraints including ACECs, critical habitat for T&E species, areas of soil instability and areas of other critical resource constraints.

Required fire operations/suppression plans can be found in the Interagency Standard for Fire and Fire Aviation Operations 2004 (Red Book) and the Office of Fire and Aviation website at <http://www.fire.blm.gov/>. All plans for the SDFO are located for fire and resource personnel use at the SDFO and the appropriate dispatch offices.

Harding County is in the Remainder of South Dakota FMU, however the MCFO provides fire suppression for BLM and the Sioux Ranger District of the Custer National Forest within Harding County. These lands are within the Northern Rockies Geographic Area. BLM administered lands in the remainder of South Dakota are protected through cooperative agreements with other federal, state and local agencies for fire suppression. These remaining lands are within the Rocky Mountain Geographic Area.

3. Fire Prevention, Community Education, Community Risk Assessment and other Community Assistance Activities.

Education and prevention is an active part of the SDFO fire management program. The SDFO makes from 300 to 500 public contacts per year.

The SDFO is active within the South Dakota Interagency Prevention Committee of the South Dakota Interagency Fire Council and the South Dakota Firewise organization. Community risk assessments and mitigation activities are conducted in partnership with the local communities each year primarily at the county level. In 2004 the SDFO completed community protection plans with five counties. Another partner with the SDFO in prevention and education is the South Dakota Project Learning Tree organization. Project Learning Tree is an environmental education organization that provides Firewise training to teachers of youths.

a. Prevention Program

South Dakota fire prevention is accomplished through the interagency prevention committee of the Interagency Fire Council. Recent efforts have included poster contests, billboards and agency presence at special events including the Sturgis Motorcycle rally and the Central States Fair.

b. Special Orders and Closures

These fire orders and closures are done in coordination with the counties and the Interagency Fire Council.

c. Industrial Operations and Fire Precautions

Timber sales and mechanical fuel treatment contracts are monitored closely for compliance with special fire stipulations.

4. Fire Training Activities

a. Qualifications and Certification

Training and fitness requirements for all agency personnel involved in fire activities can be found in the Interagency Standards for Fire and Fire Aviation Operations 2004. Annual attendance at refresher training along with successful completion of the appropriate level of work capacity testing is a prerequisite for the annual issuance of a red card. Non-agency employees meet the requirements of the National Wildfire Coordinating Group (NWCG) Handbook 310-1. The Field Office Manager will ensure that all employees meet mandatory training and fitness requirements and are made available locally, regionally and nationally as the situation demands.

b. Fire Season Readiness

The Field Office Manager insures that all personnel complete preseason training and fitness requirements. Readiness reviews are done in conjunction with the EMFZ.

5. Detection

Detection of fires within the SDFO is generally dependent upon reports from other agencies, the public and field office employees.

6. Fire Weather and Fire Danger

Fire weather and fire danger indices are determined by the Rapid City office of the National Weather Service (NWS) using data from fire weather stations maintained by cooperating agencies.

7. Aviation Management

The Unit Aviation Manager (UAM) is located at the MCFO and prepares and reviews aviation plans for the SDFO. Non-tactical resource aviation management is coordinated through the UAM. Aviation operations within the boundaries of the SDFO for tactical missions, with the exception of Harding County, are under operational control of the South Dakota Interagency Suppression Organization.

8. Initial Attack

All fires within the SDFO will be managed with suppression actions consistent with preplanned dispatch protocols in conformance with resource management objectives identified in this plan. Tactics and strategies will be based on the current and predicted weather and fire behavior. In areas where hazards have been identified, less aggressive attack strategies may be used to insure firefighter safety. The information below will be used for determining initial attack priorities.

The highest priority FMUs within the fire-planning unit for initial attack are ranked as follows:

- a. Exemption Area*
- b. Fort Meade Recreation Area ACEC*
- c. Remainder of South Dakota*

9. Extended Attack and Large Fire Suppression

These activities are handled through the Northern Great Plains Interagency Dispatch Center in Rapid City.

10. Other Fire Suppression Considerations

None.

B. Wildland Fire Use

No areas within the SDFO Office are designated for Wildland Fire Use.

C. Prescribed Fire

1. Planning and Documentation

a. Program Summary

The SDFO prescribed fire program is undertaken on an interagency basis to treat natural fuel accumulations to meet resource management objectives, standards and guidelines as outlined in the RMP. Treatments have traditionally included wildlife habitat enhancement, site preparation for artificial and natural regeneration, range habitat improvement and hazardous fuels reduction (See 9214 Prescribed Fire Handbook.)

Priority projects for treatment are in the WUI areas within the Fort Meade and Exemption Area FMU's. All specific prescribed fire plans include pre/post project criteria. For specific action items refer to the individual project plans.

Primary burn windows occur in both spring and fall time periods. Pile burning is completed from November through March. A listing of the SDFO priority projects can be found in Table 7.

Project level analysis through the NEPA process and other state and federal regulatory compliance processes document the purpose and need for treatment and identifies the goals and objectives that the prescribed fire treatment is intended to realize. The direction for FMUs identified in the RMPs and this FMP permits the use of management-ignited fire on BLM lands in the Exemption Area, Fort Meade Recreation Area and the Remainder of the SDFO.

Prescribed burns will be coordinated with key agency staff and publics focusing on special use permittees, recreationists and public or communities that could be potentially affected by a prescribed fire. Agency public affairs staff will prepare pre/post project news releases. Additional coordination will include informing staff members.

The SDFO will retain the following documentation for all prescribed fire projects:

- Prescribed Fire Plan including all attachments.
- A copy of the NEPA documents.
- Maps and photos pre/post burn.
- Agreements.
- Prescribed fire report go/no go checklist, briefing checklist and test fire documentation.
- All weather forecast information including observations, field moistures and unit logs.
- Fire report DI 1202.
- Resource monitoring reports and post-incident evaluation.
- Financial documents including cost information. A Management Information System (MIS) should be included.
- Names and locations of pertinent Geographic Information Specialist (GIS) files.

Table 7. SDFO Projects Ranked In Order

FIRE MANAGEMENT UNIT	Exemption Area B2	Exemption Area B2	Ft Meade B3	Ft Meade B3	Remainder SDFO B4
WUI/NON WUI	WUI	WUI	WUI	WUI	Non WUI
FRCC	III	III	III/II	III	II
PROPOSED PROJECT NAME	Exemption Area Community protection Project	Exemption Area Additional Lands	Ft Meade Rx	Ft Meade Forest Health Sales	SD Prairie Rx
PROJECT IDENTIFIER	HG	HG	HG	HG	HG
PROPOSED ACRES	2,675	2,500	100-300 annually	2,000	100-300 biannually
NEPA REQUIRED	Yes	Yes	Yes	Yes	Yes
NEPA COMPLETED	2001	No	No	No	No
PROPOSED COST	\$3,000,000	\$2,000,000	\$100,000 annually	\$200,000	\$100,000
YEAR STARTED	2001	2004	2005	2006	2006
YEAR COMPLETED	Est. 2010	Est. 2015	On going	Not Known	Not Known

All specific prescribed fire plans include project maps. To review these maps refer to the individual project plans.

i. Number of projects implemented through local contractors.

There are no plans to use contractors to complete prescribed fire projects within the SDFO at this time. However the SDFO will be using cooperator resources routinely to conduct prescribed fire projects. Operating plans will be used to transfer funds under existing agreements.

ii. Total acres treated in Condition Class II moved to Condition Class I.

Post fire treatments under the Exemption Area Community Protection Project in the Grizzly Gulch Fire area will move 937 acres from FRCC II to FRCC I. This part of the project will be completed in 2006 when piles are burned. Prescribed fire projects in the Fort Meade Grasslands will move FRCC II lands into FRCC I. An in-progress evaluation will determine the exact need and schedule for this project by spring of 2005. This could be approximately 100-200 acres annually.

Plans for burning South Dakota prairie lands will be evaluated in the next South Dakota RMP scheduled for 2009. This would move FRCC II lands into FRCC I. This could be as much as 100-300 acres biannually.

iii. Total number of acres treated in Condition Class III moved to Condition Class II or I

Maintenance prescribed fire will be used to maintain BLM lands in FRCC I once mechanical treatments are completed on the 5,000 acres within the Exemption Area. This will involve from 200-500 acres annually.

A planning project is in progress as a Technical Fire Management (TFM) Project to determine a schedule of prescribed fire for the Fort Meade ACEC and is scheduled for completion in April 2005. This will involve approximately 100-200 acres annually.

b. Qualified personnel necessary to plan and execute proposed annual prescribed fire program:

The SDFO employs a seven-person fuels module consisting of one permanent full time, three career seasonal and three to four 1039-appointed seasonals. The fuels module maintains two ATV torches, skid steer loader with mower and grapple attachments and hand firing devices.

Identified position needs to meet prescribed fire workloads are two qualified type II burn bosses, 4 ignition specialists and 4 holding specialists.

2. Air Quality and Smoke Management

a. Pertinent Air Quality Issues:

BLM Manual Sections 9211.31 (E), Fire Planning, and 9214.33, Prescribed Fire Management, require compliance with individual state and local smoke management programs that specify the condition under which burning may be conducted. South Dakota has no overriding smoke management laws or regulations. Site-specific burn plans will each evaluate the need for smoke management considerations.

b. Mitigation:

i. Location of Class I air sheds

There are none that would be affected by prescribed fire on BLM lands.

ii. Pre-identified Smoke Sensitive Areas

Smoke sensitive areas will be identified in specific prescribed fire plans and mitigation measures specified.

iii. Local and Regional Restrictions and Procedures

South Dakota has no specific state air quality regulatory procedures, however every effort to minimize adverse impacts from smoke from prescribed fire projects will planned for.

3. Documentation and Reporting

Documentation and reports are found in the specific prescribed fire burn plans.

4. Non-fire Fuels Treatments

a. Number of acres treated by non-fire methods:

The SDFO expects to treat up to 8,000 acres with mechanical treatments in the next 10 years. 1,000 to 1,500 acres will be treated annually depending on funding available.

b. Number of acres treated mechanically with by-products utilized:

Six SDFO projects have produced a commercial product, mainly saw logs. The Black Hills area has several sawmills which process saw logs and several which process smaller material, mainly post and poles. There will be from two to four of these projects offered each year for the next 10 years.

c. Number of projects implemented through local contractors:

Indefinite Delivery/Indefinite Quantity (IDIQ) contracts and local contractor removal and use of wood products for firewood, as well as individual firewood gathering and prescribed fire will continue to be used. The use of stewardship projects are desired to facilitate the use of local contractors. The number of projects using local contractors is expected to be from 2-4 each year for the next 10 years.

d. Total acres treated in Condition Class II moved to Condition Class I:

There will be very little mechanical treatment acres which meet these criteria.

e. Total number of acres treated in Condition Class III moved to Condition Class II or Condition Class I:

Within the Exemption Area there will be approximately 3,000 acres treated by mechanical means which will move from FRCC III to FRCC I.

Within the Fort Meade ACEC there are potentially 2,000 acres of ponderosa pine that will be treated by mechanical means to meet fuel reduction and forest health objectives. This would move these lands from FRCC III to FRCC I.

D. Emergency Stabilization and Rehabilitation

The SDFO stabilization and rehabilitation program is undertaken to prevent further and unacceptable resource damage from soil erosion due to the effects of wildland fire. For information see the BLM Supplemental Emergency Stabilization and Rehabilitation (ESR) Guidance. This supplement provides specific BLM guidance and is tiered to the 2002 Department of Interior (DOI) ESR Handbook (<http://fire.r9.fws.gov/ifcc/esr/handbook/>) relative to planning and implementing ESR projects on public lands administered by the BLM. Treatment activities must conform to the BLM Supplemental Emergency Stabilization and Rehabilitation Guidance and RMP. SDFO treatments have traditionally included aerial seeding, ground seeding, construction of protective fences and construction of water erosion abatement structures.

Project-specific analysis through the NEPA process documents the purpose and need for treatment and identifies the goals and objectives that the treatment is to realize. Emergency rehabilitation needs will be established in a wildland fire rehabilitation plan. Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health and safety and to help communities protect infrastructure. The SDFO develops program planning and budgeting information for rehabilitation treatments in accordance with the Resource Area Plan and updates this information on a yearly basis in the Normal Year Fire Plan.

Documentation requirements have been established by the resource and fire management staff and are identified in the SDFO in RIPS, AWP, MIS, and NFPORS.

Short-term monitoring requirements include evaluation of the application methodology immediately upon completion of application. Post-treatment monitoring may include vegetative transects or establishing permanent photo points depending on the specific project objectives.

Resource specialists and fire management staff with GIS support will conduct long term monitoring.

E. Community Protection/Community Assistance

The SDFO has been completing risk assessment and community fire protection plans with the city of Lead and counties of Lawrence and Meade. Risk assessment and community fire planning has been initiated with Butte, Pennington and Custer counties. The SDFO will be expanding their community protection and assistance by incorporating three more western South Dakota counties. Counties will be prioritized in collaboration with the South Dakota Interagency Fire Council.

During consultation and coordination with these fire departments the SDFO insures that it is clear that the operational role of the federal agencies includes wildland firefighting, hazardous fuels reduction, cooperation prevention and education and technical assistance. The responsibility for fires that occur in structures is the responsibility of tribal, State and local governments.

Rural fire assistance funds are distributed by the SDFO through the state of South Dakota in cooperation with U.S. Fish and Wildlife service (USFWS) and the USFS volunteer fire assistance program. In 2002 \$30,000 was distributed to five volunteer fire departments, in 2003 \$60,000 was distributed to 24 volunteer fire departments, and in 2004 \$100,000 dollars was distributed to 30 volunteer fire departments. Requests included needs for Personal Protective Equipment (PPE), training and wildland equipment.

V: ORGANIZATION AND BUDGET

A. Workforce and Equipment Identification

Under the organization described in the preferred alternative of the most recent National Fire Management Analysis System (NFMAS) analysis (June 2003), the SDFO zone fire staff

requires the following staff, equipment, and funding to accomplish the program goals and objectives:

Table 8. SDFO Requirements for Program Goals and Objectives

Resource	Current Staffing*	Desired Staffing*	Normal Activation	Cost
FMO	0	1	Yearly	12 WM
Fuels Specialist	1	1	Yearly	\$73,778.00 (GS-11)
Fuels Crew Supervisor	1	1	Yearly	\$60,978.00 (GS-09) or \$49,850.00 (GS-07)
Fuels Crew Leader	1	1	Feb-Jan	\$46,183.00 (GS-06)
Fuels Crewmember	2	1	Feb-Jan	\$80,496.00 (GS-05) – (2)
Fuels Crewmember (1039)	4	4	April-Nov	\$71,985.00 (GS-04) – (4)
Risk/Mitigation/Education Specialist	0	1	Yearly	6 WM

*All requests based on NFMAS mdb information (1999.) NYR is based on Resource objectives.

The EMFZ program provides suppression (initial and extended attack), investigation, prevention and education and fuels management services for public lands that lie within the Harding County FMZ. National support is provided when requested resources or personnel are available. The EMFZ provides oversight for these programs primary under the existing South Dakota Interagency Agreement.

B. Assistance Agreements and Intra/Interagency Agreements

Cooperative fire management agreements exist between the BLM and the following agencies:

- South Dakota Interagency Cooperative Fire Management Agreement (2002)
- State of South Dakota (Division of Wildland Fire Suppression)
- U.S. Department of Agriculture (USDA) USFS Rocky Mountain Region and Northern Rockies Region
- U.S. Department of the Interior (DOI) Bureau of Indian Affairs (BIA) Great Plains Region and Rocky Mountain Region
- USDI USFWS Mountain Prairie Region
- USDI National Park Service (NPS) Midwest Region

Initial attack is provided within the Fort Meade Recreation Area ACEC under the Interagency Agreement between the BLM and the Veterans Administration, Black Hills Healthcare Network, Fort Meade.

The South Dakota Division of Wildland Fire Suppression enters into fire suppression agreements with volunteer and municipal fire departments within South Dakota. The departments that may initial attack a wildland fire on or adjacent to BLM land include the following:

- Alkali VFD
- Ardmore VFD
- Argyle VFD
- Belle Fourche VFD
- Belvidere VFD
- Bison VFD
- Bonesteel VFD
- Box Elder VFD
- Buffalo Gap VFD
- Buffalo VFD
- Camp Crook VFD
- Cascade VFD
- Castle Rock VFD
- Colome VFD
- Dallas VFD
- Deep Creek VFD
- Dewey VFD
- Draper VFD
- Dupree VFD
- Eagle Butte VFD
- Edgemont VFD
- Enning VFD
- Fairburn VFD
- Fairfax VFD
- Faith VFD
- Folsom VFD
- Fort Perre VFD
- Four Corners VFD
- Glad Valley VFD
- Grand River VFD
- Green Valley VFD
- Gregory VFD
- Harding VFD
- Hayward VFD
- Hereford VFD
- Hermosa VFD
- Highlands VFD
- Hot Springs VFD
- Interior VFD
- Isabel VFD
- Kadoka VFD
- Kennebec VFD
- Kyle VFD
- Lemmon VFD
- Lodgepole VFD
- Long Valley VFD
- Ludlow VFD
- Martin VFD
- McIntosh VFD
- McLaughlin VFD
- Meadow VFD
- Mileville VFD
- Minnekahta VFD
- Mission Twp VFD
- Mission VFD
- Morristown VFD
- Mud Butte VFD
- Murdo VFD
- New Underwood VFD
- Newell VFD
- Nisland VFD,
- Norris VFD
- North Haines VFD
- NW Corner VFD
- Oelrichs VFD
- Opal VFD
- Oral VFD
- Philip VFD
- Pine Ridge VFD
- Prairie City VFD
- Presho VFD
- Quinn VFD
- Ralph VFD
- Rapid Valley VFD
- Red Scaffold VFD
- Redig VFD
- Reliance VFD
- Robbs Flat VFD
- Running Antelope VFD
- Saint Francis VFD
- Scenic VFD
- Smithwick VFD
- Sorum/Reva VFD
- St Onge VFD
- Sturgis VFD
- Timber Lake VFD
- Trail City VFD
- Tuthill VFD
- Vale VFD
- Vetal VFD
- Vivian VFD
- Wall VFD
- Wanblee VFD
- Wasta VFD
- White River VFD
- Winner VFD
- Witten VFD
- Wood VFD

Copies of the national Federal Interagency Agreement for Fire Management are kept at the BLM-Office of Fire and Aviation's Procurement Office.

Copies of assistance agreements are kept at the SDFO and the BLM State Office.

C. Equipment Rental Agreements

For a copy of all contracts see the service and supply plan located at Miles City Interagency Dispatch Center or Northern Great Plains Interagency Dispatch Center.

D. Contract Suppression and Prescribed Fire Resources

For a copy of all contracts see the service and supply plan located at Miles City Interagency Dispatch Center or Northern Great Plains Interagency Dispatch Center.

VI. MONITORING AND EVALUATION

The SDFO FMP is a working reference for wildland fire management and hazardous fuels treatments within the SDFO. It will be reviewed annually and revised as needed to ensure that the strategic guidance provided in the plan is assisting the SDFO in meeting its resource management and fire management goals and objectives in the South Dakota RMP. Revisions, additions and adjustments that are compliant with the RMP may be incorporated into the FMP. The review will also ensure that the fire program is being implemented in a safe, cost effective manner and as directed in this FMP. As national wildland fire performance measures are issued, monitoring and evaluation protocols will be developed to meet those requirements and follow DOI and BLM guidelines.

Monitoring for each project is described in the project level plan and is designed to evaluate the action and ensure it meets the purposes and needs identified. Photo points and plots are established where needed depending on site-specific objectives. In addition, an evaluation of each project will be completed to determine effectiveness of projects in implementation of the 2001 Federal Fire Policy. The evaluation will assure accountability, resource capabilities and priorities.

Accomplishments will be reported in MIS.

GLOSSARY

affected environment - The natural environment that exists at the present time in an area being analyzed.

aircraft rental agreement - Obtains aircraft for aerial missions under operational control of the BLM. The DOI-Aviation Management Directorate regionally administrates aircraft rental agreements for type III helicopters and fixed wing aircraft. There is a web based source list maintained by Aviation Management Directorate and typically this procurement mechanism is for short time duration and may be ordered direct by the local dispatch unit to the vendor.

annual work plan - Written plan which delineates specific functions which must be accomplished by specific deadlines, who is responsible for accomplishing how the task will be completed and what is needed to complete the task.

appropriate management response - Specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. It allows managers to utilize a full range of responses. It does not lock tactical options to fire type designations. As conditions change, the particular response can change to accomplish the same objective.

area of critical environmental concern - An area which needs special management attention to preserve historic, cultural, or scenic values; to protect fish and wildlife resources or other natural systems or processes; or to protect life and provide safety from natural hazards.

aspect - The direction a slope faces.

big game - Large mammals, such as deer, elk, and antelope that are hunted for sport.

biological diversity - The number and abundance of species found within a common environment. This includes the variety of genes, species, ecosystems, and the ecological processes that connect everything in a common environment.

biological treatment - The use of animals, (e.g. sheep and goats) and insects to control noxious weeds.

browse - Twigs, leaves, and young shoots of trees and shrubs that animals eat. Browse is often used to refer to the shrubs eaten by big game, such as elk and deer.

budget – For IIAA budget analysis purposes, the budget consists of those funds which are (or would be) allocated to the planning unit to cover the costs of the units planned Pre-suppression/initial attack fire management organization that is analyzed. Funds that are used to pay fire's share of indirect overhead and administrative costs should be included.

call when needed (CWN) - A contract used to obtain aircraft for aerial missions under operational control of the BLM. The DOI-Aviation Management Directorate nationally administrates CWN contracts for type I and II helicopters as well as Single Engine Air

Tankers. Vendors are not required to respond unless they accept an offer to provide services and the government may release the aircraft as needed.

canopy - The part of any stand of trees represented by the tree crowns. It usually refers to the uppermost layer of foliage, but it can be use to describe lower layers in a multistoried forest.

categorical exclusion - A category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a federal agency in implementation of these regulations, and neither an environmental assessment or an environmental impact statement is required.

Category 1 - substantial biological information on file to support the appropriateness of proposing to list as endangered or threatened.

Category 2 - current information indicates that proposing to list as endangered or threatened is possibly appropriate, but substantial biological information is not on file to support an immediate ruling (U.S. Fish and Wildlife Service.)

chemical treatment -The use of pesticides and herbicides to control pests and undesirable plant species.

Clean Air Act - A federal law enacted to ensure that air quality standards are attained and maintained. Initially passed by Congress in 1963, it has been amended several times.

condition class– Condition classes are a function of the degree of departure from historical fire regimes resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, and canopy closure. One or more of the following activities may have caused this departure: fire exclusion, timber harvesting, grazing, introduction and establishment of exotic plant species, insects and disease (introduced or native), or other past management activities.

Class I - The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. It also would not preclude those activities specifically authorized by the Wilderness Act of 1964 and described in BLM Manual H-8550-1. This is an interim classification until Congress determines which areas is wilderness. Lands designated as wilderness by Congress would continue to be managed under Class I objectives. Lands not designated wilderness would be managed under VRM Class II objectives.

Class II - The objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominate natural features of the characteristic landscape.

Class III - The objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV - The objective is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

contiguous - Continuous, generally used to describe areas of land.

cooperator – In IIAA it is any fire agency, fire department, commercial or other entity that provides initial attack forces to the Planning Unit for dispatch on a planned basis.

cultural resource - The remains of sites, structures, or objects used by people in the past; this can be historical or pre-historic.

default FIL – The lowest Fire Intensity Level at which an initial attack unit will be used (dispatched) by the IIAA under a program option which uses the default FIL dispatch mode. The default FIL may be assigned as a default for all units of a **Producer Type**, or individually set for units on the **Edit Line Item** form.

density - Number of trees in an area, generally measured as trees per acre.

disturbance - Any event, such as forest fire or insect infestations that alter the structure, composition, or functions of an ecosystem.

ecosystem - An arrangement of living and non-living things and the forces that move among them. Living things include plants and animals. Non-living parts of ecosystems may be rocks and minerals. Weather and wildfire are two of the forces that act within ecosystems.

Emergency stabilization and rehabilitation (ESR) – Emergency stabilization actions are initiated within one year of a fire to stabilize and prevent unacceptable damage of natural and cultural resources, minimize threats to life and property resulting from the affects of a fire, and repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Rehabilitation actions are taken within three years of the fire to repair or improve lands that are unlikely to recover to a management-approved condition, and repair or replace minor facilities damaged by fire.

encroachment - The progression of trees from forested areas into grassland or shrub land.

endangered species - A plant or animal that is in danger of extinction throughout all or a significant portion of its range. Endangered species are identified by the Secretary of the Interior in accordance with the Endangered Species Act of 1973.

Environmental Assessment (EA) - A record of the environmental factors involved in a land management action.

Environmental Impact Statement (EIS) - An analysis of site-specific BLM activities used to determine whether such activities have a significant effect on the quality of the human environment, and whether a formal environmental impact statement is required.

exclusive use – A contracts for aircraft services that are solicited and awarded by DOI-Aviation Management Directorate nationally for the BLM for a specific time period (e.g. 30-day, 90-day, etc..)

extended attack - A wildland fire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving or being ordered by the initial attack incident commander. Extended attack implies that the complexity level of the incident will increase beyond the capabilities of initial attack incident command.

fauna - The animal life of an area.

Fire Behavior Prediction Models (FBPS) - A set of mathematical equations that can be used to predict certain aspects of fire behavior when provided with an assessment of fuel and environmental conditions.

fire cycle - The average time between fires in a given area.

fire intensity level - A measure of fire behavior used in IIAA (A NFMAS term.) It is based on the calculated flame length, where FIL 1 is 0-2 feet, FIL 2 is 2-4 feet, FIL 3 is 4-6 feet, FIL 4 is 6-8 feet, FIL 5 is 8-12 feet and FIL 6 is greater than 12 feet. The NFDRS Burning Index (BI) is the indicator for the fire danger for dispatching and is used to categorize rate of spread and to assess fire effects. **FIL=BI/10**

fire management - The integration of knowledge of fire protection, prescribed fire, and fire ecology into multiple use plans, decision making, and land management activities. Fire management places fire in perspective with overall land management objectives.

fire management plan (FMP) - Activity plans developed to support and accomplish resource management objectives and applicable land-use decisions authorized in BLM resource management plans. It contains an economic analysis, establishes the basic direction for fire management, identifies priorities for execution, and determines levels of fire resources (personnel, engines, aircraft, and facilities.)

fire management unit (FMU) - Any land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regimes groups that set it apart from the management characteristics of an adjacent FMU. Fire Management Units are scaleable, and cannot be separated geographically. The FMUs may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives. The development of FMUs should avoid redundancy. Each FMU should be unique as evidenced by management strategies, objectives and attributes.

fire planning unit (FPU) - Describes the geographic planning area. It can include a single or multiple land use plan planning area(s), cross-jurisdictional boundaries including adjacent

BLM office lands, and/or other partner lands. The FPU will be a key component of the new Fire Program Analysis (FPA) software program.

Fire Regime Condition Class (FRCC) - Classes of fire regimes grouped by categories of frequency (expressed as mean fire return interval) and severity. Refers specifically to five groups used in federal policy and planning: 0-35 years, low severity; 0-35 years, stand replacement; 35-100 years, mixed severity; 35-100 years, stand replacement; 200+ years, stand replacement.

fire regime- The characteristics of fire in a given ecosystem, such as the frequency, predictability, intensity, and seasonality of fire.

fire use - The management of naturally ignited wildland fire to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in approved Fire Management Plans.

fire-adapted – Evolved strategies that allow populations to be maintained on sites where fires commonly occurred.

flora - The plant life of an area.

forage - All browse and non-woody plants that are eaten by wildlife and livestock.

forb - A broadleaf plant that has little or no woody material in it.

fuel – The combustible plant material, both living and dead that is capable of burning in a wildland fire situation.

fuel break – A zone in which fuel quantity has been reduced or altered to provide a position for suppression forces to make a stand against wildfire. Used for suppression safety and fire behavior modification. Fuel breaks may consist of one or a combination of the following: Natural barriers, constructed fuel breaks, manmade barriers. The effectiveness of fuel breaks is improved when strategically located adjacent to areas containing low fuel accumulation (Tons/Acre.) In the long-term fuel breaks are more effective when managed to maintain a low fuel loading. Tools used for fuel break maintenance include mechanical treatment, prescribed burning, and grazing.

fuel model (FM) - Simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

fuels management - The treatment of fuels that would otherwise interfere with effective fire management or control. For instance, prescribed fire can reduce the amount of fuels that accumulate on the forest floor before the fuels become so heavy that a natural wildfire in the area would be explosive and impossible to control.

fuels treatment - The rearrangement or disposal of natural or activity fuels to reduce fire hazard.

Geographical Information System (GIS) - Specific actions taken in response to a wildland fire to implement protection and fire use objectives. Formerly known as the appropriate suppression response which consisted of the confine, contain, and control tactical strategies. (NWCG terminology adopted 06/12/97) OR Computer program which consists of layers of files of data which describe components of landscape. The information can be reproduced on a map.

habitat - A place where a plant or animal naturally or normally lives or grows.

historic fire regime (HFR) – Periodicity and pattern of naturally occurring fires in a particular area or vegetative type, described in terms of frequency, biological severity, and area of extent.

initial attack - For the purpose of NFMAS IIAA budget analysis, initial attack is defined as the suppression action that is carried out exclusively by the forces that are planned and used for action on initiating fires as included in the IIAA included items list.

ladder fuels - Vegetation located below the crown level of forest trees which can carry fire from the forest floor to tree crowns. Ladder fuels may be low-growing tree branches, shrubs, or smaller trees.

landscape - An area composed of interacting and inter-connected ecosystems that are repeated because of the geology, landform, soils, climate, biota, and human influences through the area. A landscape is composed of watersheds and smaller ecosystems.

large fire - A fire burning more than a specified area of land e.g., 300 acres. A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

Management Information System (MIS) - BLM workload measures web based, uses designations of specific tasks to track field office workloads and accomplishments.

mechanical treatment - Treatment of an area by mechanical means, such as contour furrowing, pitting, plowing and seeding, chiseling, scalping, and water spreading.

minimum impact suppression tactics (MIST) – The concept of MIST is to use the minimum amount of force necessary to achieve wildland fire management protection objectives, consistent with land and resource management objective (USDA 1993.)

mitigation - Actions taken to avoid, minimize, or rectify impacts of a land management practice; reducing or eliminating the impact by preservation and maintenance operations.

mosaic - Areas with a variety of plant communities over a landscape, such as areas with trees and areas without trees occurring over a landscape.

most efficient level (MEL) - The fire program (budget and associated program option) that will result in the expected minimum cost + net resource value change. Conceptually, this is the most efficient funding level for the planning unit, and any increase in budget beyond

MEL will have a negative benefit-cost ratio; that is the return in reduced suppression costs and resource losses will not offset the budget increase.

multi-story - A vertical arrangement of three or more canopy layers within the same area.

National Environmental Policy Act (NEPA) – Congress passed NEPA in 1969 to encourage productive and enjoyable harmony between people and their environment. One of the major tenets of NEPA is its emphasis on public disclosure of possible environmental effects of any major action on public lands.

National Fire Danger Rating System (NFDRS) - A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

National Fire Management Analysis System (NFMAS) - The analysis process which systematically evaluates fire management programs based on an economic efficiency criterion. NFMAS uses a simulation model to estimate the performance over time of existing and proposed local initial attack organizations and other fire-related activities such as prevention and fuels management. Budget cost, variable suppression costs, and economic consequences of fire on planned resource outputs are all considered in making the efficiency estimate.

National Fire Plan - A planning document that directs the actions of USDA Forest Service and Departments of the Interior agencies in preparing for wildland fires and reduce their impacts on people and resources. The National Fire Plan is based on the five key points of firefighting, rehabilitation and restoration, hazardous fuel reduction, community assistance, and accountability.

National Fire Plan Operations Reporting System (NFPORS) - Web based data system used by federal agencies to list unit projects, project status and general costs.

National Forest Lands - Public lands, generally forest, range, or other wildland, administered by the Forest Service, USDA.

National Historic Preservation Act (NHPA) - The federal law which requires agencies to identify item of cultural and historical significance. An act to establish a program for the preservation of additional historic properties throughout the nation, and for other purposes.

normal year readiness (NYR) - Approximate annual date when individual management units plan to be fire ready. Identified in annual work plan.

noxious weed - According to the Federal Noxious Weed Act (PL 93-629), a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health. Identified by designation in Montana.

overstory - The upper canopy layer; the plants below comprise the understory.

Personal Computer Historical Analysis (PCHA) - A personal computer program for processing historical daily weather observation and individual fire report data to produce fire behavior and fire occurrence data for the IIAA.

permitted grazing - Grazing on public lands under the terms of a grazing permit.

precommercial thinning - A felling made in an immature stand to improve the average form of the trees that remain.

prescribed fire - Application of fire (by planned or unplanned ignitions) to fuels in either their natural or modified state, under specified conditions to allow the fire to burn in a predetermined area while producing the fire behavior required to achieve certain management objectives.

prescription - Management practices to accomplish specific land and resource management objectives.

prevention – Activities directed at reducing the number of person-caused fires, including public education, law enforcement, dissemination of information, and the reduction of hazards.

properly function condition (PFC) - Used to describe a vegetation population such as a stand of trees which is healthy and reproducing, and maintaining it.

public land - Land for which title and administration rests with the Bureau of Land Management (BLM.)

Range Improvement Project System (RIPS) - Electronic database for recording all range improvement projects for BLM.

rangeland - Land on which the principle natural plant cover is composed of native grasses, forbs, and shrubs that are valuable as forage for livestock and big game.

record of decision (ROD) - Agency administrators select an alternative that best implements the objectives and constraints for the management of the area.

Remote Automatic Weather System (RAWS) - A weather information management system satellite station that automatically tracks and stores weather information.

rights-of-way - Public lands authorized to be used or occupied pursuant to a right-of-way grant.

riparian ecosystem - The ecosystems around or next to water areas that support unique vegetation and animal communities as a result of the influence of water.

Risk Assessment and Mitigation Strategies Plan (RAMS) – Computer based risk assessment and mitigation model. RAMS assists users in developing the optimum prevention and fuels programs and allows users to prioritize areas within their planning unit,

consider various prevention and/or fuels treatment alternatives and develop the related budgets.

stand replacement - When a stand has been totally modified by some disturbance (fire, insects, disease, logging), and needs to start, or be started, over.

standard landscape assessment - Method of determining characteristics which make up landscape. Means of describing a geographic, area uses GIS.

structure - How the parts of ecosystems are arranged, both horizontally and vertically. Structure might reveal a pattern, or mosaic, or total randomness of vegetation.

suppression - Any act taken to slow, stop, or extinguish a fire. Examples of suppression activities include fireline construction, backfiring, and application of water or chemical fire retardants.

temporary road - Temporary roads are used for a single, short-term use, i.e. to haul timber to developed roads, access to build water developments or conduct other administrative functions, etc.

threatened and endangered species - These species of plants or animals classified as threatened or endangered pursuant to section 4 of the Endangered Species Act. Any species which is in danger of extinction, or is likely to become so within the foreseeable future.

vegetation type - A plant community with distinguishable characteristics.

visual resource management (VRM) -

VRM Class I areas (including all Wilderness and Wilderness Study Areas (WSAs) unless specifically exempted in an RMP) – To preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II areas - Retaining the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

VRM Class III areas – The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

VRM Class IV areas – To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the

view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.

wilderness study area (WSA) – A WSA must be managed in a manner so as not to impair suitability for preservation and designation as wilderness. Within WSAs, fuels and vegetation treatment and wildland fire management activities should follow BLM Manual H-8550-1: *Interim Policy for Lands Under Wilderness Review* (USDI 1995.)

wildland fire - Any wildland fire that is not a prescribed fire.

Wildland Fire Implementation Plan (WFIP) - A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

Wildland Fire Situation Analysis (WFSA.) A decision making process in which the agency administrator or representative describes the situation, compares multiple strategic wildland fire management alternatives, evaluates the expected effects of the alternatives, establishes objectives and constraints for the management of the fire, selects the preferred alternative, and documents the decision.

wildland fire use - The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

wildland urban interface (WUI) - The line, area, or zone, where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel.

woody draw - A classification of areas, particularly in grassland settings, where an overstory of woody vegetation in small drainages creates habitat for many wildlife species and shade/wind protection and forage for livestock. The vegetation is a result of higher moisture conditions than in the surrounding areas but surface water if any, running thru the areas is generally short term.

APPENDICES

Appendix A: Management Constraints from the Fire/Fuels Management Environmental Assessment Plan Amendment for Montana and the Dakotas

The following management constraints are taken from section 2.5.1.1 and 2.5.3.1 of the Fire/Fuels Management Environmental Assessment Plan Amendment for Montana and the Dakotas (2003.)

2.5.1.1 Protection measures common to both alternatives: These protection measures are based on existing policy, direction, law, and regulation. They are described here to emphasize the portions of policy that are relevant to this proposed action.

1. **Air Quality:** Prescribed fire will conform with the provisions of state regulations and implementation plans as specified in BLM manual section 9210-Fire Planning and (in South Dakota) the South Dakota Airshed Group Operating Guide
2. **Cultural:** Prior to implementing fire projects, the BLM will do an appropriate level of Native American consultation according to the guidance in BLM Manual 8160 and Handbook H-8160-1 to identify potential religious or cultural concerns.
3. **Cultural:** If Native American human remains are discovered on public lands during fire suppression, rehabilitation, or fuels reduction activities, the BLM will follow procedures identified in the Native American Graves Protection and Repatriation Act (NAGPRA) and 43 CFR part 10. If BLM fire suppression or reclamation activities extend onto private or state land, and burials are discovered, the provisions of the appropriate state burial law will be followed.
4. **Cultural:** The protective measures that guide the placement of dozer lines and other surface disturbing fire-related activities will be followed unless the authorized officer determines that due to adverse fire behavior, implementation of a particular measure is not feasible and prudent. In those cases, the measure may be waived or modified to address crucial safety issues, i.e., imminent threats to life and/or property. The SHPO will be notified if such measures are waived or modified in accordance with existing agreements or 36 CFR 800. Also, unless critical safety issues prevent a cultural resource inventory from being conducted, the provisions regarding post-fire cultural resource inventory cannot be waived or modified. If inventory is waived or modified by the authorized officer the SHPO will be consulted consistent with existing agreements or 36 CFR 800.
5. **Special Status Species (SSS):** Under BLM Special Status Species policy (BLM Manual 6840), BLM shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for listing a candidate or BLM sensitive species under the Endangered Species Act.
6. **T&E Species:** Areas of occupied and/or suitable habitat, important for species expansion and recovery, would be protected from adverse effects resulting from fire/fuels management related activities
7. **Visual:** In order to ensure that the objectives of each visual resource management class is met, contrast ratings are required for all major projects (prescribed burning, mechanical and chemical pre-treatments) on public lands that fall within VRM Classes I and II, and Class III areas which have high sensitivity levels. Actions must not exceed the VRM objectives established for the management class.

2.5.3.1 Direction for fire management (including both fire suppression and fuels management) to protect other resource values: The following direction would be used when developing and updating field office fire management plans, when responding to wildland fires, and when developing site-specific fuels projects. This direction would not be mandatory during wildland fire suppression if using it would compromise protection of life or property.

8. Aquatic Species (including SSS) and Habitat–Fuels Management

- To provide additional protection of aquatic species beyond Streamside Management Zone (SMZ) boundaries, **Riparian Protection Zones (RPZs)** would be identified to protect the following specific key ecological functions:
 - **water quality**, to a degree that provides for stable and productive riparian and aquatic ecosystems;
 - **stream channel integrity**, channel processes, and the sediment regime (including the elements of timing, volume, and character of sediment input and transport) under which the riparian and aquatic ecosystems developed;
 - **instream flows** to support healthy riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges;
 - **natural timing and variability** of the water table elevation in meadows and wetlands.
 - **diversity and productivity** of native and desired non-native plant communities in riparian zones.
- The width necessary to protect stream and riparian area structure and function should be determined from watershed and site-specific analysis. Interim RPZ boundaries described below should be considered default boundaries until final boundaries are determined by watershed or site-specific analysis. Final RPZ boundaries may be narrower or wider, depending on local conditions and results of the project specific analysis.
- Interim RPZ boundaries within forested zones would be:
 - Streams, ponds, lakes containing Special Status Fish Species: two site-potential tree heights
 - Other fish-bearing streams: one site-potential tree height
 - Ponds, lakes, and wetlands greater than 1 acre: the RPZ consists of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to one site-potential tree height (whichever is greatest)
- Interim RPZ boundaries for non-forested rangeland ecosystems would consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or (in segments where trees are present) to a distance equal to one site-potential tree height (whichever is greatest.)
- Fuels treatments could occur within these RPZs; however, riparian values would receive primary management emphasis during fuels treatments.
- All proposed fuels treatments within RPZs should analyze particular risk from wildfire and fuels management projects to isolated, depressed populations in degraded habitats without access to local or regional refugia. Proposed treatments should incorporate specific design features to avoid any further degradation of habitat.
- If RPZ boundaries are narrower than SMZ boundaries, fuels treatments would still comply with applicable state laws and Water Quality/Forestry BMPs that BLM has adopted.

Cultural and Paleontological Guidance

Fire Suppression

9. The appropriate BLM archaeologist, paleontologist, or cultural resource program lead would recommend the following guidance for each fire as appropriate:
10. Fire suppression tactics would limit surface disturbance to protect cultural resource values in designated cultural Areas of Critical Environmental Concern (ACEC), archeological districts, and other areas known or suspected to contain cultural resources, including historic structures and features. Use of earth moving/tillage equipment should be avoided for wildland fire suppression in areas with special designations to protect cultural resources and values, archeological districts, and other areas known to possess cultural resources. The use of heavy equipment and off-road vehicles should be limited to existing roads and trails within these areas during rehabilitation.
11. The aerial application of fire retardant would be restricted over areas that contain petroglyphs and pictographs.
12. Fire camps and fire staging areas should be placed outside and sufficiently distant from known or identified cultural resources. Use of off-road motorized vehicles outside of fire camp and staging areas should be avoided to prevent inadvertent impacts to cultural resources.
13. An intensive cultural resource inventory (Class III) as described in BLM Manual 8110 should be completed on areas disturbed by suppression activities, e.g., fire lines, fire camp areas, and staging areas before starting rehabilitation. Cultural resources discovered in or near disturbed areas should be protected from further damage during rehabilitation. Where cultural resources have been disturbed by suppression activities stabilization work may be implemented. This may entail a careful return of the berm over the site, seeding, or covering the site with protective mesh and culturally sterile material. These emergency actions should be considered on a case-by-case basis at the discretion of the archaeologist assigned to the fire. Consultation with the SHPO would be done in accordance with existing agreements or 36 CFR 800.
14. A BLM resource advisor and, if feasible, an archaeologist, would be on site during suppression and rehabilitation activities to give guidance and ensure compliance with the guidelines and decisions established to protect cultural resource values. Guidelines should include prohibitions against the collection of artifactual materials from archaeological and historical resources.
15. The archaeologist assigned to the fire would work with the rehabilitation team to ensure that cultural resources, including historic structures and features, are considered during fire suppression restoration actions. Site treatment plans would be prepared for historic properties that have been damaged by fire suppression and require more detailed stabilization efforts. These treatment plans would protect the site from secondary effects of the fire and fire suppression activities.
16. Monitoring of sensitive site areas would be conducted when fire suppression rehabilitation plans are within close proximity to historic properties, or could have an indirect effect on an existing resource.
17. If stabilization/protective measures were employed for cultural resources a report summarizing those actions should be submitted to an appropriate SHPO. The report should include a description of the fire impacts, fire suppression and rehabilitation, and

salvage activities. It should also include the number and types of sites affected and stabilized.

18. In accordance with the existing agreements or 36 CFR 800, the SHPO would be notified of a fire emergency and the suppression efforts associated with the emergency. Adjustments to these procedures may be made in response to comments from consulting parties; e.g. the SHPO, either programmatically through existing agreements or on a case-by-case basis where no agreement exists.
19. Surface disturbance should be limited within designated ACECs and formations known to contain significant fossil resources to protect paleontological values. In these areas with designated paleontological resources, the use of heavy equipment and off-road vehicles would be limited to existing roads and trails during rehabilitation.
20. Fire camps and fire staging areas should be placed outside and sufficiently distant from known or identified fossil localities. Use of motorized vehicles outside of fire camp and staging areas in known fossil producing formations should be avoided to prevent inadvertent impacts to fossil resources.
21. Significant fossils that are exposed by suppression activities or would be damaged by rehabilitation work should be recovered by a qualified Paleontologist.

Cultural and Paleontological Guidance

Fuels Management

22. Develop protocol with ND and SD SHPOs similar to that described in IM MT No. 99-032 for South Dakota. This would allow for a sample inventory instead of a Class III intensive survey of an entire target area. Until that protocol is developed, prescribed fire projects in ND or SD would require consultation with the appropriate SHPOs to develop a prescribed fire survey and protection strategy. The inventory strategies developed for these two states should be similar to guidance provided in IM no. MT-99-032.
23. If a class III inventory is used instead of the sample inventory described in IM No. MT 99-032, no additional consultation with SHPO would be required.
24. Where known fossil resources are suspected but unknown and where the area cannot be avoided the following measures would be employed: 1. Conduct an inventory to identify the presence or absence of fossil resources employing a qualified paleontologist, 2. in areas where fossil resources are suspected or have been identified avoid using surface disturbing motorized vehicles, heavy equipment, or hand tools, and 3. advise fire personnel and others to refrain from collecting fossils on public lands.
25. To the extent possible during fuels treatment planning, use a qualified paleontologist to assess the risk of damages and to recommend ways to minimize damage to fossil resources resulting from implementation of the plan.

Terrestrial Wildlife Species (including Special Status Species) and Habitat Direction common to both Wildland Fire Management and Fuels Management

The following **conservation measures** would be applied to protect Threatened and Endangered terrestrial wildlife species:

26. Interior Least Tern (Endangered)

- No human disturbance within 1/4 mile of least tern nest site from May 15 to August 15;
- No prescribed burning activities within 1 mile upwind of least tern nest sites.

- No helicopter/aircraft activity or aerial retardant application within ½ mile of least tern nest sites between May 15 and August 15;
- No prescribed burning activities within 1 mile upwind of nest sites between May 15 and August 15.

27. Whooping Crane (Endangered)

- No human disturbance within ½ mile of occupied whooping crane habitat or potential habitat where whooping cranes have been identified within the past three years from April 1 to August 31
- No helicopter/aircraft activity or aerial retardant application within ½ mile of occupied whooping crane habitat or potential habitat where whooping cranes have been identified within the past three years from April 1 to August 31.

28. Black-footed Ferret (Endangered)

- No heavy equipment operation off of existing roads within 1/4 mile of prairie dog towns with documented occurrence of black-footed ferret
- No aerial retardant application within 1/4 mile of prairie dog towns with documented occurrence of black-footed ferret
- No surface disturbance (fire line construction) should occur in prairie dog towns with documented occurrence of black-footed ferret.

29. Bald Eagle (Threatened)

- No human disturbance within ½ mile of bald eagle nests from February 1 through August 15;
- No human disturbance within 1/4 mile of a winter roost from November 1 through March 1 or, if within 1/4 mile, activity should be restricted to a period of 9 am to 3 pm;
- No helicopter/aircraft activity or aerial retardant application within ½ mile of known bald eagle nest sites from January 1 through August 15; or within 1/4 mile of a winter roost from November 1 through March 1;
- No prescribed burning activities within 1 mile upwind of nest sites from January 1 through August 15; or within 1 mile upwind of a winter roost between November 1 and March 1.

30. Piping Plover (Threatened)

- No human disturbance within 1/4 mile of any occupied nest sites from April 1 to July 31
- No prescribed burning within one mile upwind of any occupied nest sites from April 1 to July 31 ;
- No helicopter/aircraft activity or aerial retardant application within ½ mile of piping plover nest sites between April 15 and July 31.

Visual Direction

Wildland Fire Suppression

31. The use of heavy equipment and retardant for wildland fire suppression should be avoided in designated VRM Class I and Class II areas unless the impact of the fire would more severely impact the VRM values than the impact of equipment and retardant.
32. Fire rehabilitation of VRM Class I and II areas should be coordinated with a VRM specialist.
33. Fuels management projects should be coordinated with a VRM specialist.

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