



In Reply To:  
1616.051

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
HiLine District  
1101 15<sup>th</sup> Street North  
Great Falls, Montana 59403  
<http://www.blm.gov/mt>



June 2015

Dear Reader:

Enclosed is the Proposed Resource Management Plan and Final Environmental Impact Statement (Proposed RMP/Final EIS) for public lands and federal minerals managed by the Bureau of Land Management (BLM) HiLine District. The Bureau of Land Management (BLM) prepared the Proposed RMP/Final EIS in consultation with cooperating agencies, taking into account public comments received during this planning effort. The Proposed RMP/Final EIS provides a framework for the future management direction and appropriate use of the HiLine District, located in Blaine, Chouteau, Glacier, Hill, Liberty, Phillips, Toole, and Valley Counties in northern Montana. The document contains land use planning decisions to guide the BLM's management of the HiLine planning area.

This Proposed RMP/Final EIS is one of fifteen sub-regional planning efforts being conducted as part of the BLM's National Greater Sage-Grouse Planning Strategy. The Proposed RMP/Final EIS identifies conservation measures to conserve, enhance and/or restore Greater Sage-Grouse habitat in response to the US Fish and Wildlife Service's (USFWS) March 2010 "warranted, but precluded" Endangered Species Act listing petition. The USFWS found that the inadequacy of regulatory mechanisms was identified as a significant threat to Greater Sage-Grouse in their finding on the petition to list the Greater Sage-Grouse. RMP conservation measures were identified as the BLM's principal regulatory mechanism.

This Proposed RMP and Final EIS have been developed in accordance with the National Environmental Policy Act of 1969, as amended, and the Federal Land Policy and Management Act of 1976, as amended. The Proposed RMP/Final EIS is largely based on Alternative E, the preferred alternative in the Draft RMP/EIS, which was released on March 22, 2013. The Proposed RMP/Final EIS contains the Proposed Plan, a summary of changes made between the Draft RMP/EIS and Proposed RMP/Final EIS, impacts of the Proposed Plan, a summary of the written and verbal comments received during the public review period for the Draft RMP/EIS, and responses to the comments.

Pursuant to the BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this Proposed RMP and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions within 30 days from date the Environmental Protection Agency (EPA) publishes the Notice of Availability of the Final EIS in the Federal Register. For further information on filing a protest, please see the accompanying protest regulations in the pages that follow (labeled as *Attachment 1*). The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g., meeting minutes or summaries, correspondence, etc.).

Emailed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular mail or overnight delivery postmarked by the close of the protest period. Under these conditions, the BLM will consider the emailed protest as an advance copy and will afford it full consideration. If you wish to provide the BLM with such advance notification, please direct emailed protests to: [protest@blm.gov](mailto:protest@blm.gov).

All protests must be in writing and mailed to one of the following addresses:

***Regular Mail:***

Director (210)  
Attn: Protest Coordinator  
P.O. Box 71383  
Washington, D.C. 20024-1383

***Overnight Delivery:***

Director (210)  
Attn: Protest Coordinator  
20 M Street SE, Room 2134LM  
Washington, D.C. 20003

Before including your address, phone number, email address, or other personal identifying information in your protest, be advised that your entire protest – including your personal identifying information – may be made publicly available at any time. While you can ask us in your protest to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior on each protest. Responses to protest issues will be compiled and formalized in a Director's Protest Resolution Report made available following issuance of the decisions.

Upon resolution of all land use plan protests, the BLM will issue an Approved RMP and Record of Decision (ROD). The Approved RMP and ROD will be mailed or made available electronically to all who participated in the planning process and will be available on the BLM website at <http://blm.gov/8qkd>.

Unlike land use planning decisions, implementation decisions included in this Proposed RMP/Final EIS are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues an Approved RMP and ROD. The Approved RMP and ROD will therefore identify the implementation decisions made in the plan that may be appealed to the Office of Hearing and Appeals.

We thank you for your participation in this planning process.

Sincerely,



Mark Albers  
HiLine District Manager

**Protest Regulations**

[CITE: 43 CFR 1610.5-2]

TITLE 43--PUBLIC LANDS: INTERIOR  
CHAPTER II--BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR  
PART 1600--PLANNING, PROGRAMMING, BUDGETING  
Subpart 1610 – Resource Management Planning  
Sec. 1610.5-2 – Protest Procedures

- (a) Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.
- (1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the Federal Register. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.
- (2) The protest shall contain:
- (i) The name, mailing address, telephone number and interest of the person filing the protest;
  - (ii) A statement of the issue or issues being protested;
  - (iii) A statement of the part or parts of the plan or amendment being protested;
  - (iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and
  - (v) A concise statement explaining why the State Director's decision is believed to be wrong.
- (3) The Director shall promptly render a decision on the protest.
- (b) The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested. The decision of the Director shall be the final decision of the Department of the Interior.



# HiLine

## Proposed Resource Management Plan and Final Environmental Impact Statement

HiLine District Office  
Great Falls, Montana

June 2015

**HiLine  
Proposed Resource Management Plan  
and  
Final Environmental Impact Statement**

1. Responsible Agencies

Bureau of Land Management (Lead Agency)  
U.S. Bureau of Indian Affairs (Cooperating Agency)  
U.S. Bureau of Reclamation (Cooperating Agency)  
U.S. Fish & Wildlife Service (Cooperating Agency)  
Montana Fish, Wildlife and Parks (Cooperating Agency)  
Blaine County, Montana (Cooperating Agency)  
Phillips County, Montana (Cooperating Agency)  
Valley County, Montana (Cooperating Agency)  
Montana Cooperative State Grazing Districts (Cooperating Agency)  
    Badlands  
    Buggy Creek  
    North Blaine  
    North Phillips  
    North Valley  
    South Phillips  
    Wayne Creek  
    Willow Creek

2. Draft ( )           Final (X)

3. Type of Action: Administrative (X)           Legislative ( )

4. Abstract: This Proposed Resource Management Plan and Final Environmental Impact Statement describes and analyzes five alternatives for managing public lands and federal minerals managed by the Bureau of Land Management HiLine District in Blaine, Chouteau, Glacier, Hill, Liberty, Phillips, Toole, and Valley Counties in northern Montana. The HiLine District includes about 2.4 million acres of BLM land and 3.8 million acres of federal mineral estate. The five alternatives are: Alternative A (current management or the “no action” alternative), Alternatives B, C, D, and Alternative E (the preferred alternative). The alternatives address the following eleven planning issues: renewable and nonrenewable energy, land ownership adjustment, healthy ecosystems and multiple use, cultural and paleontological resources, motorized travel, access, wildlife habitat, special designations, fire, social and economic conditions, and wilderness characteristics.

5. Protests on the Proposed Resource Management Plan and Final Environmental Impact Statement must be received within 30 days from publication of the Notice of Availability in the Federal Register by the Environmental Protection Agency. The close of the protest period will be announced in a news release and on the HiLine RMP website at <http://blm.gov/8qkd>.

6. For further information, contact:

Brian Hockett, Planning and Environmental Coordinator  
Bureau of Land Management  
HiLine District Office  
3990 Highway 2 West  
Havre, MT 59501  
(406) 262-2837

# Acronyms

ACEC	Area of Critical Environmental Concern	FEAST	Forest Economic Analysis Spreadsheet Tool
AH	All Habitat for Sage-Grouse	FEMA	Federal Emergency Management Agency
AIM	Assessment, Inventory and Monitoring	FLPMA	Federal Land Policy and Management Act
AMD	Acid Mine Drainage	FLREA	Federal Lands Recreation Enhancement Act
AML	Abandoned Mine Land	FMP	Fire Management Plan
AMP	Allotment Management Plan	FMU	Fire Management Unit
ANS	Aquatic Nuisance Species	FORVIS	Forest Vegetation Information System
APD	Application for Permit to Drill	FRCC	Fire Regime Condition Class
APHIS	Animal and Plant Health Inspection Service	FY	Fiscal Year
AQRV	Air Quality Related Value	GH	General Habitat for Sage-Grouse
ARM	Administrative Rules of Montana	GHG	Greenhouse Gas
ARMP	Air Resource Management Plan	GHMA	General Habitat Management Area
ARTSD	Air Resource Technical Support Document	GPM	Gallons per Minute
ASQ	Allowable Sale Quantity	GRSG	Greater Sage-Grouse
ATV	All-Terrain Vehicle	GWP	Global Warming Potential
AUM	Animal Unit Month	HAF	Habitat Assessment Framework
BCA	Backcountry Conservation Area	HAP	Hazardous Air Pollutant
BIA	Bureau of Indian Affairs	HFRA	Healthy Forests Restoration Act
BLM	Bureau of Land Management	HMP	Habitat Management Plan
BMP	Best Management Practice	HRT	Hydraulic Residence Time
BNGPA	Bowdoin Natural Gas Project Area	HUC	Hydrologic Unit Code
BSU	Biologically Significant Unit	IMPROVE	Interagency Monitoring of Protected Visual Environments
BTU	British Thermal Unit	INPS	Invasive Non-Native Plant Species
CASTNet	Clean Air Status and Trends Network	IPCC	Intergovernmental Panel on Climate Change
CBM	Coalbed Methane	IPM	Integrated Pest Management
CBNG	Coalbed Natural Gas	JEDI	Jobs and Economic Development Impact
CCF	Hundred Cubic Feet	KGRA	Known Geothermal Resource Area
CEQ	Council on Environmental Quality	LMF	Landscape Monitoring Framework
CFR	Code of Federal Regulations	LND	Lands Not Designated as Recreation Management Areas
CMR	Charles M. Russell National Wildlife Refuge	LU	Land Utilization
COA	Condition of Approval	LWCF	Land and Water Conservation Fund
COE	Corps of Engineers	MAAQs	Montana Ambient Air Quality Standards
CRP	Conservation Reserve Program	MBF	Thousand Board Feet
CSP	Concentrating Solar Power	MBOGC	Montana Board of Oil and Gas Conservation
CSU	Controlled Surface Use	MCF	Thousand Cubic Feet
EA	Environmental Assessment	MDEQ	Montana Department of Environmental Quality
EE/CA	Engineering Evaluation/Cost Analysis	MEI	Maximally Exposed Individual
EIS	Environmental Impact Statement	MFISH	Montana Fisheries Information System
EO	Executive Order	MFP	Management Framework Plan
EPA	Environmental Protection Agency	MFWP	Montana Fish, Wildlife and Parks
ERC	Energy Release Component	MLA	Mineral Leasing Act
ERMA	Extensive Recreation Management Area	MLE	Most Likely Exposure
ES&R	Emergency Stabilization and Rehabilitation	MLP	Master Leasing Plan
ESA	Endangered Species Act	MLRA	Major Land Resource Area
ESP	Electrical Submersible Pump		
FAMS	Facility Asset Management System		
FAR	Functioning at Risk		

MMBF Million Board Feet  
 MMCF Million Cubic Feet  
 MNHP Montana Natural Heritage Program  
 MOA Memorandum of Agreement  
 MOU Memorandum of Understanding  
 MPDES Montana Pollution Discharge Elimination System  
 MTPY Metric Tons Per Year  
 MWRA Montana Wetland Riparian Association  
 MZ Management Zone  
 NAAQS National Ambient Air Quality Standards  
 NADP National Acid Deposition Program  
 NAGPRA Native American Graves Protection and Repatriation Act  
 NAWMP North American Waterfowl Management Plan  
 NCSS National Cooperative Soil Survey  
 NEI National Emission Inventory  
 NEPA National Environmental Policy Act  
 NESHAP National Emission Standards for Hazardous Air Pollutants  
 NF Nonfunctioning  
 NHPA National Historic Preservation Act  
 NIFC National Interagency Fire Center  
 NPS Nonpoint Source  
 NRCS Natural Resources Conservation Service  
 NREL National Renewable Energy Laboratory  
 NRHP National Register of Historic Places  
 NSHT National Scenic and Historic Trails  
 NSO No Surface Occupancy  
 NSPS New Source Performance Standards  
 NTL Notice to Lessee  
 NTT National Technical Team  
 OHV Off-Highway Vehicle  
 PAC Priority Area for Conservation  
 PC Progressive Cavity  
 PFC Proper Functioning Condition  
 PFYC Potential Fossil Yield Classification  
 PGM Photochemical Grid Modeling  
 PH Priority Habitat for Sage-Grouse  
 PHMA Priority Habitat Management Area  
 PILT Payment in Lieu of Taxes  
 PM Particulate Matter  
 PPB Parts per Billion  
 PPJV Prairie Pothole Joint Venture  
 PPM Parts per Million

PPQ Plant Protection and Quarantine  
 PSQ Probable Sale Quantity  
 PV Photovoltaic  
 QRA Qualified Resource Area  
 R&PP Recreation and Public Purposes  
 RAC Resource Advisory Council  
 RAWS Remote Automated Weather Station  
 RfC Reference Concentration  
 RDF Required Design Feature  
 REL Reference Exposure Level  
 RFD Reasonable Foreseeable Development  
 RIPS Range Improvement Project System  
 RMP Resource Management Plan  
 RMZ Recreation Management Zone  
 ROS Recreation Opportunity Spectrum  
 SFA Sagebrush Focal Area  
 SHPO State Historic Preservation Office  
 SLAMS State and Local Air Monitoring Stations  
 SMA Surface Management Agency  
 SMU Soil Map Unit  
 SMZ Streamside Management Zone  
 SRMA Special Recreation Management Area  
 SRP Special Recreation Permit  
 SVR Standard Visual Range  
 T&E Threatened and Endangered  
 TCP Traditional Cultural Property  
 TDS Total Dissolved Solids  
 THPO Tribal Historic Preservation Officer  
 TLS Timing Limitation Stipulation  
 TMDL Total Maximum Daily Load  
 TRCP Theodore Roosevelt Conservation Partnership  
 URF Unit Risk Factor  
 USDA United States Department of Agriculture  
 USDI United States Department of the Interior  
 USFWS United States Fish and Wildlife Service  
 USGS United States Geological Survey  
 UTM Universal Transverse Mercator  
 VOC Volatile Organic Compound  
 VRM Visual Resource Management  
 WAFWA Western Association of Fish and Wildlife Agencies  
 WMU Wolf Management Unit  
 WQRP Water Quality Restoration Plan  
 WSA Wilderness Study Area  
 WUI Wildland Urban Interface

# EXECUTIVE SUMMARY

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## ES.1 INTRODUCTION

The Federal Land Policy and Management Act of 1976 (FLPMA) directs the United States (US) Department of the Interior (DOI), Bureau of Land Management (BLM) to develop and periodically revise or amend its resource management plans (RMP), which guide management of BLM-administered lands. This RMP and Environmental Impact Statement (EIS) describes and analyzes alternatives for the future management of public lands and resources the BLM administers in the HiLine District.

The BLM HiLine Proposed Plan provides a layered management approach that offers the highest level of protection for Greater Sage-Grouse (GRSG) in the most valuable habitat. Land use allocations in the Proposed Plan would limit or eliminate new surface disturbance in Priority Habitat Management Areas (PHMA), while minimizing disturbance in General Habitat Management Areas (GHMA). In addition to establishing protective land use allocations, the Proposed Plan would implement a suite of management tools, such as disturbance limits, GRSG habitat objectives and monitoring, mitigation approaches, adaptive management triggers and responses, and other protective measures throughout the range. These overlapping and reinforcing conservation measures will work in concert to improve and restore GRSG habitat condition and provide consistency in how the BLM will manage activities in GRSG habitat in the planning area.

### **ES.1.1 Rationale and Relationship to the Greater Sage-Grouse Planning Strategy**

The HiLine RMP addresses the March 2010 US Fish and Wildlife Service (USFWS) 12-Month Finding for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (75 *Federal Register* 13910, March 23, 2010). In that finding, the USFWS concluded that GRSG was “warranted, but precluded” for listing as a threatened or endangered species. A

“warranted, but precluded” determination is one of three results that may occur after a petition is filed by the public to list a species under the Endangered Species Act (ESA). This finding indicates that immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, a species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

The USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. Of the five listing factors reviewed, the USFWS determined that Factor A, “the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG,” and Factor D, “the inadequacy of existing regulatory mechanisms,” posed “a significant threat to the GRSG now and in the foreseeable future” (75 *Federal Register* 13910, March 23, 2010). The USFWS identified the principal regulatory mechanisms for the BLM as conservation measures in RMPs.

The HiLine RMP is one of the 15 land use plan (LUP) revisions and amendments and environmental impact statements being prepared by the BLM as part of the National Greater Sage-Grouse Planning Strategy (BLM 2011).<sup>1</sup> These documents provide a set of management alternatives focused on specific conservation measures across the range of the GRSG (see **Figure ES-1**, Greater Sage-Grouse Planning Strategy Boundaries).

Science-based decision making and collaboration with state and local partners are fundamental to the National Greater Sage-Grouse Planning Strategy. The 15 GRSG LUP/EISs address threats to GRSG identified by state fish and wildlife agencies, the BLM National Technical Team, and the USFWS in the context of its listing decision and the Conservation Objectives Team (COT) report. The COT report was prepared by wildlife biologists from state and federal agencies and provides a blueprint for the overall conservation approach set forth in the BLM GRSG LUP/EISs (USFWS 2013).<sup>2</sup> Where consistent with conservation objectives, the GRSG LUP/EISs adopt unique state- and stakeholder-developed approaches and priorities. Additional science-based reviews by the US Geological Survey and related scientific literature provided further guidance on specific issues that arose in developing the final BLM and Forest Service GRSG LUP/EISs. In addition, regular meetings with the Western Governors Association Sage-Grouse Task Force provided additional opportunities for coordination with member states.<sup>3</sup>

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<sup>1</sup> BLM (US Department of the Interior, Bureau of Land Management). 2011. Instruction Memorandum 2012-044, BLM National. Greater Sage-Grouse Land Use Planning Strategy. Washington, DC. December 27, 2011.

<sup>2</sup> USFWS (US Department of the Interior, Fish and Wildlife Service). 2013. Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report. USFWS, Denver, CO. February 2013.

<sup>3</sup> The Western Governors Association Sage-Grouse Task Force works to identify and implement high priority conservation actions and integrate ongoing actions necessary to preclude the need for the GRSG to be listed under the ESA. The Task Force includes designees from the 11 western states where GRSG is found as well as

### ES.1.2 Description of the Planning Area and Habitat Management Areas

The planning area is the geographic area within which the BLM will make decisions during this planning effort. The planning area boundary includes all lands regardless of jurisdiction. The HiLine planning area covers approximately 17.6 million acres of federal, state, and private lands and Native American reservations in 8 counties (Blaine, Chouteau, Glacier, Hill, Liberty, Phillips, Toole, and Valley). Of the total area, approximately 2.4 million acres are BLM-administered surface lands and 4.2 million acres are federal mineral estate.

While the planning area consists of all lands regardless of ownership, decisions resulting from the HiLine RMP/EIS would apply only to BLM-administered lands, including surface and split-estate lands with BLM-administered subsurface mineral rights. **Chapter 3, Affected Environment**, describes the current resource and resource use conditions in the planning area.

Figure ES-1



As part of the National Greater Sage-Grouse Planning Strategy, GRSG habitat on BLM-administered lands in the decision area consists of lands allocated as Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) (**Table ES-I, Habitat Management Areas in the HiLine Planning**

representatives from USFWS, BLM, Natural Resources Conservation Service, Forest Service, United States Geological Survey, and Department of the Interior.

Area, **Figure ES-2**, Greater Sage-Grouse Habitat Management Areas–HiLine RMP/EIS). PHMA and GHMA are defined as follows:

- PHMA (1,433,000 acres): BLM-administered lands identified as having the highest value to maintaining sustainable sage-grouse populations. Areas of PHMA largely coincide with areas identified as Priority Areas for Conservation in the COT report.
- GHMA (290,000 acres): BLM-administered lands that require some special management to sustain sage-grouse populations.

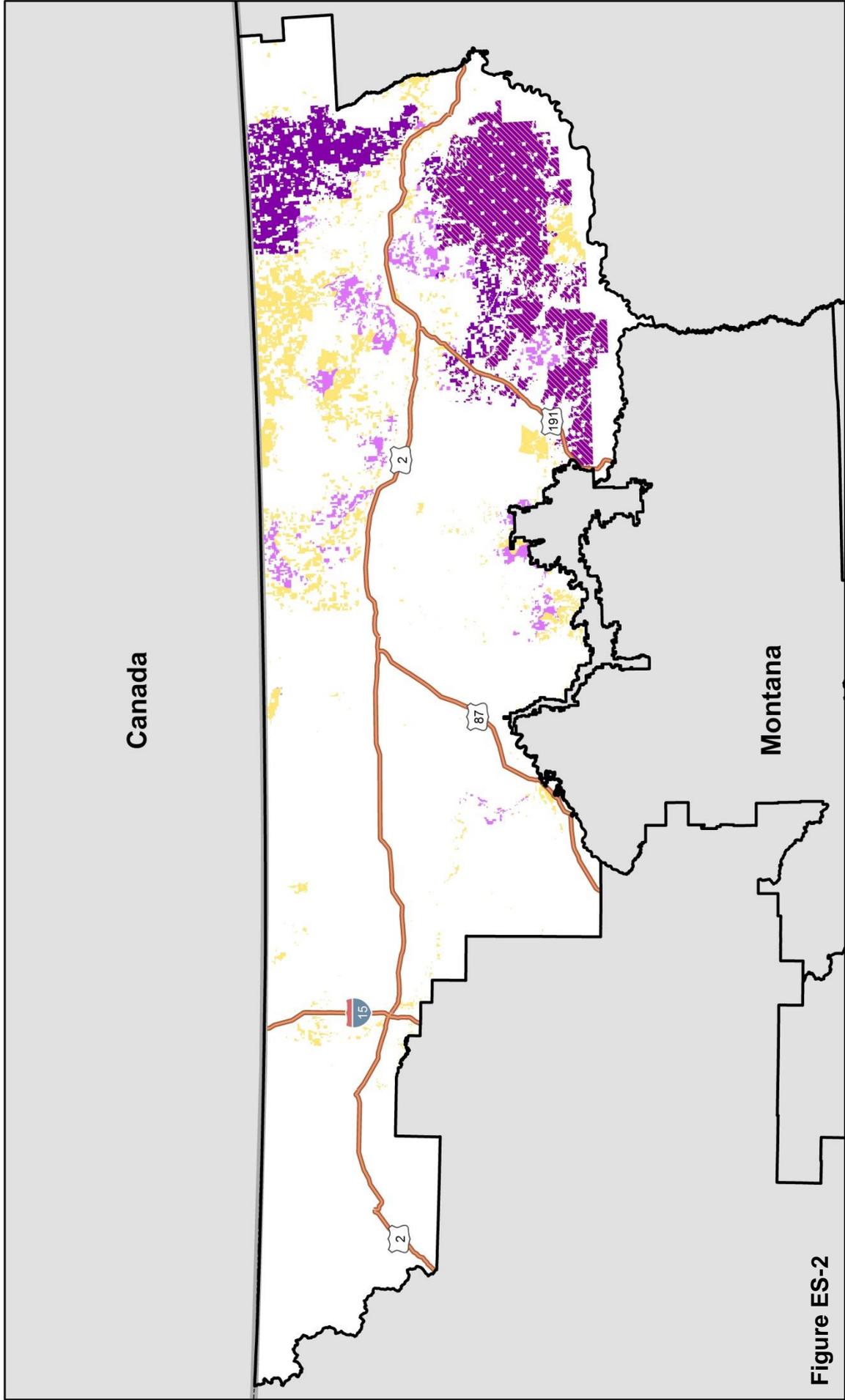
The planning area includes other BLM-administered lands that are not allocated as habitat management areas for GRSG. These lands would be managed as described in **Chapter 2**.

The Proposed Plan also identifies specific Sagebrush Focal Areas (SFAs; 927,000 acres), which are a subset of PHMA. The SFAs were derived from Greater Sage-Grouse “stronghold” areas described in a USFWS memorandum to the BLM and Forest Service titled *Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes* (USFWS 2014).<sup>4</sup> The memorandum and associated maps provided by the USFWS identify areas that represent recognized “strongholds” for GRSG that have been noted and referenced as having the highest densities of GRSG and other criteria important for the persistence of the species.

**Table ES-1**  
**Habitat Management Areas in the HiLine Planning Area**

Habitat Management Area	Acres of BLM-administered Lands	Percent of BLM-administered Land in Planning Area
PHMA	1,433,000	59
GHMA	290,000	12
Other BLM-administered lands	714,000	29

<sup>4</sup> USFWS (US Department of the Interior, Fish and Wildlife Service). 2014. Memorandum: Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes. October 27, 2014.



**Figure ES-2**  
**Greater Sage-Grouse Habitat Management Areas - HiLine RMP/EIS**

- BLM Sagebrush Focal Areas
- BLM Priority Habitat Management Areas
- BLM General Habitat Management Areas
- Other BLM Lands
- Private, State, and Other Federal Lands
- EIS Boundary
- State Boundary

Map Area

No warranty is made by the Bureau of Land Management (BLM) or the U.S. Forest Service (USFS). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

## ES.2 PURPOSE AND NEED

The purpose of this RMP revision is to ensure that public lands are managed according to the principles of multiple use identified in FLPMA while maintaining valid existing rights and other obligations already established. The new RMPs will address changing needs of the Planning Area and create a management strategy that best achieves a combination of the following planning issues within the framework of the planning criteria described in the next section.

- Employing a community-based planning approach to seek broadly supported solutions to issues, and collaborate with federal, state, and local cooperating agencies.
- Establishing goals and objectives for managing resources and resource uses in the approximately 2.4 million surface acres and 4.2 million acres of federal mineral estate in the Planning Area administered by the BLM in accordance with the principles of multiple use and sustained yield.
- Identifying land use plan decisions to guide future land management actions and subsequent site-specific implementation decisions.
- Identifying management actions and allowable uses anticipated to achieve the established goals and objectives and reach desired outcomes.
- Providing comprehensive management direction by making land use decisions for all appropriate resources and resource uses the BLM administers in the Planning Area.
- Providing for compliance with applicable tribal, federal, and state laws, standards, and implementation plans, and BLM policies and regulations.
- Recognizing the Nation's need for domestic sources of minerals, food, timber, and fiber.
- Retaining flexibility to adapt to new and emerging issues and opportunities and to provide for adjustments to decisions over time based on new information and monitoring.
- Striving to be compatible with the plans and policies of adjacent local, state, tribal, and federal agencies and consistent with federal laws, regulations, and BLM policies; and be flexible enough to adapt to future BLM policy and guidance updates.
- Identify and incorporate appropriate conservation measures to conserve, enhance, and restore GRS habitat by reducing, minimizing, or eliminating threats to that habitat.

The BLM currently administers public lands in the Planning Area according to two plans – the Judith-Valley-Phillips RMP (BLM 1994) and the West HiLine

RMP (BLM 1988). Although these existing plans have been updated since the BLM adopted them, new data have become available, and laws, regulations, and policies regarding management of these public lands have changed. In addition, decisions in the existing plans do not satisfactorily address all new and emerging issues in the Planning Area. These changes and potential deficiencies created the need to revise the existing plans.

This RMP is needed to respond to the USFWS's March 2010 "warranted, but precluded" ESA listing petition decision (75 *Federal Register* 13910, March 23, 2010). The USFWS identified inadequacy of regulatory mechanisms as a significant factor in its finding on the petition to list the GRSG. In its listing decision, the USFWS noted that changes in management of GRSG habitats are necessary to avoid the continued decline of GRSG populations. Changes in land allocations and conservation measures in BLM RMPs provide a means to implement regulatory mechanisms to address the inadequacy identified by the USFWS.

### **ES.3 PROPOSED ACTION**

The proposed federal action is the Proposed Plan, which identifies resource management actions in accordance with the multiple-use and sustained-yield mandates of FLPMA. The proposed action is also intended to provide a consistent framework for managing GRSG and its habitat on BLM-administered land. The alternatives, including the Proposed Plan, comprise desired future outcomes, and a range of management actions, allowable uses, and land use allocations that guide management on BLM-administered lands. The Proposed Plan (see **Section ES.6**, Greater Sage-Grouse Habitat Management Proposed Plan and Environmental Effects), represents the agency's approach for addressing the purpose and need.

### **ES.4 DEVELOPMENT OF THE RMP/EIS**

#### **ES.4.1 Scoping**

A Notice of Intent (NOI) published in the Federal Register on September 9, 2006, formally announced the BLM's intent to revise the existing plans and prepare the associated EIS. Publication of the NOI initiated the scoping process and invited affected and interested agencies, organizations, and the general public to participate in determining the scope and issues to be addressed by alternatives and analyses in the EIS. The BLM hosted 18 public scoping meetings during October 2006. The 18 scoping meetings provided the public with an opportunity to learn and ask questions about the project and the planning process and to submit their issues and concerns to the BLM. In addition to members of the BLM Interdisciplinary Team, 185 people attended the scoping meetings. The BLM collected comments from the public during the scoping meetings and throughout the scoping period. The final Scoping Summary Report, available online at <http://www.blm.gov/wol/st/en/prog/more/sagegrouse.html>, prepared in conjunction with all the GRSG LUPAs, summarizes the scoping and

issue-identification process and describes 13 broad issue categories identified during the scoping process

#### **ES.4.2 Cooperating Agency Collaboration**

The BLM invited local, state, federal, and tribal representatives to participate as cooperating agencies on the HiLine RMP/EIS. The BLM invited these entities to participate because they have jurisdiction by law or because they could offer special expertise. Blaine, Phillips, and Valley County Commissions, as well as eight grazing districts agreed to participate as cooperating agencies in the RMP revision. The Bureau of Indian Affairs, Bureau of Reclamation, USFWS, and Montana Fish, Wildlife and Parks accepted cooperating agency status as well. The BLM and cooperating agencies participated in multiple meetings to formulate alternatives and to keep cooperating agencies informed and to solicit their input. Development of this Proposed RMP and Final EIS considered comments from cooperating agencies on the Draft RMP/EIS and previous administrative drafts.

The BLM also invited Native American tribes to be cooperating agencies as part of the RMP revision and conducted ongoing coordination, including letters, phone calls, and face-to-face meetings. The BLM sent tribal consultation letters to update cooperators and tribes on the status of the RMP revision process. In addition, the BLM met with tribes in government-to-government consultation throughout the RMP process.

#### **ES.4.3 Development of the Draft RMP/EIS**

##### ***Development of Management Alternatives***

In accordance with NEPA and the Council on Environmental Quality implementing regulations (40 Code of Federal Regulations 1500), the planning team considered public input and developed a reasonable range of alternatives for the Draft RMP/EIS.

The planning team developed five unique alternatives, including one No Action Alternative and four action alternatives, which were subsequently analyzed in the Draft RMP/EIS. Each of the preliminary action alternatives was designed to:

- Address the 11 planning issues
- Fulfill the purpose and need for the RMP
- Meet the multiple-use and sustained-yield mandate of the FLPMA
- Respond to USFWS-identified issues and threats to GRSG and its habitat, including specific threats identified in the COT report

Collectively, the four action alternatives (Alternatives B, C, D, and E) analyzed in the Draft EIS offered a range of possible management approaches for responding to the purpose and need as well as the planning issues and concerns identified

through public scoping. While the overarching goal of the long-term conservation of GRSG and its habitat is the same across alternatives, each alternative contains a discrete set of objectives and management actions, which if selected as the final plan, would constitute a unique RMP.

### **Publication of Draft RMP/EIS**

#### *Public Comment Period*

The Notice of Availability (NOA) for the HiLine Draft RMP/EIS was published in the Federal Register on March 22, 2013, initiating the 90-day public comment period. The BLM held five public meetings in Glasgow, Malta, Havre, Chester, and Great Falls, Montana. Written public comments were reviewed and considered by the BLM.

#### *Comment Analysis*

During the public comment period, the BLM received 2,438 comment letters by mail and email, which contained more than 1,000 substantive comments. Comments covered a wide spectrum of thoughts, opinions, ideas, and concerns. Upon receipt, the BLM reviewed the comments, grouped similar substantive comments under an appropriate topic heading, and evaluated and wrote summary responses addressing the comment topics. The response indicated whether or not the commenters' points would result in new information or changes being included in the Final RMP/EIS. In many circumstances, public comments prompted such changes to the Draft RMP/EIS. **Chapter 5** provides a detailed description of the comment response process.

## **ES.5 RMP/EIS ALTERNATIVES AND ENVIRONMENTAL EFFECTS**

### **ES.5.1 Alternative A**

The No Action Alternative represents the continuation of current management and provides a baseline from which to identify potential environmental consequences when compared to the action alternatives. The No Action Alternative describes current resource and land management direction as represented in the Judith-Valley-Phillips RMP and the West HiLine RMP, and associated habitat management plans, maintenance actions, and updates. Current management identifies constraints on mineral leasing in the Planning Area to protect resource values. Current management includes seven Areas of Critical Environmental Concern (ACECs), as well as National Back Country Byways, National Historic Trails, and two Wilderness Study Areas (WSAs). The BLM maintains five Special Recreation Management Areas (SRMAs) and three Extensive Recreation Management Areas (ERMAs) under Alternative A and allows livestock grazing on BLM-administered lands in the Planning Area. Current management includes stipulations and seasonal restrictions for surface-disturbing and disruptive activities to protect sensitive wildlife areas.

GRSG habitat would continue to be managed under current management direction. For GRSG, recent research findings have provided updated and more

accurate seasonal timing restrictions and expanded protection distances than those in Alternative A.

### **ES.5.2 Alternative B**

Alternative B is based on the conservation measures developed by the BLM National Technical Team (NTT) planning effort described in Instruction Memorandum (IM) No. WO-2012-044. As directed in the IM, the conservation measures developed by the NTT must be considered and analyzed, as appropriate, through the land use planning and NEPA processes by all BLM state and field offices that contain occupied GRS habitat. Compared to the other alternatives, Alternative B would place the greatest emphasis on conservation of physical, biological (including GRS habitat), heritage and visual resources, and lands with wilderness characteristics, while placing the most constraints on resource uses. Compared to the other alternatives, Alternative B would conserve larger areas of land for physical, biological, and heritage resources; designate two ACECs for GRS conservation; and place some additional restrictions on resource uses such as ROW and mineral development. Alternative B would exclude wind energy ROWs on 90 percent of the planning area, encourage the use of designated corridors for new ROWs, close more than 90 percent of federal minerals to leasing, and recommend nine new mineral withdrawals. The BLM would not designate any ERMA or SRMA under Alternative B and would manage 2,390,000 as open to livestock grazing. This alternative would maintain contiguous blocks of vegetation and habitat on BLM-administered lands.

Restrictions on surface-disturbing and disruptive activities in GRS habitat are generally more prohibitive under Alternative B than Alternative A. Alternative B would include PHMA to manage uses in GRS habitat. All activities in PHMA and GHMA would be required to demonstrate a net conservation to GRS and its habitat.

### **ES.5.3 Alternative C**

Alternative C would place fewer constraints on resource uses than Alternative B, but more than Alternative A. Alternative C places moderate protections on land area for physical, biological, and heritage resources, while placing moderate restrictions on ROW and mineral development. Under this alternative, 37 percent of the planning area would be open to fluid mineral leasing with NSO stipulations, and 48 percent would be open with conditions on surface use/timing limitation stipulations. The total acres managed as RMAs would decrease compared to Alternative A. Grazing use allocations would be the same as Alternative A. Alternative C would designate three new ACECs.

PHMA would be managed as open for locatable minerals, but closed for salable minerals and NSO with limited exceptions for fluid minerals. PHMA would also be managed as exclusion areas for renewable energy ROWs and avoidance for other major ROWs. Areas within one mile of a GRS lek would be NSO for

fluid minerals; surface occupancy would be prohibited between December 1 and May 15 in GRSG winter range.

#### **ES.5.4 Alternative D**

Compared to the other action alternatives (Alternatives B through E), Alternative D emphasizes resource uses and reduces constraints on resource uses to protect physical, biological, and heritage and visual resources. Compared to other alternatives, Alternative D conserves the least land area for physical, biological, and heritage resources; and is the least restrictive to ROW and mineral development. The BLM would manage slightly fewer acres as open to salable and leasable minerals compared to Alternative A. Alternative D would result in no designated utility corridors, 2 exclusion areas, and 13 avoidance areas. Alternative D would have fewer acres managed as open for wind energy ROWs, but would also have the least amount of wind energy ROW exclusion area of any alternative (except Alternative A). Alternative D limits motorized vehicle use to designated roads and trails and would designate 12 areas (97,100 acres) as SRMAs and 2 areas (200 acres) as ERMAs. Grazing use allocations would be the same as Alternative A. The BLM would manage ACECs and lands with wilderness characteristics consistent with other resource objectives. Three new ACECs would be established under this alternative.

Areas within 0.6 miles of a GRSG lek would be NSO for fluid minerals; surface occupancy would be prohibited within one mile of a lek (nesting habitat) between March 1 and June 15 and between December 1 and March 31 in GRSG winter range.

#### **ES.5.5 Alternative E (Proposed Plan)**

Management under Alternative E would be similar to Alternatives C and D, except that Alternative E provides more focused protections for GRSG such as the designation of sagebrush focal areas (927,100 acres) and establishment of a 3 percent disturbance cap at the Biologically Significant Unit (BSU) and project scale. Alternative E would provide a balanced approach to the amount of land conserved for physical, biological, and heritage and visual resources, while placing major constraints on minerals, ROWs, and wind energy development.

Alternative E manages disturbances (e.g., roads, oil and gas wells, pipelines, and ROWs) in GRSG habitat to not exceed one energy or mining facility per 640 acres and cover less than 3 percent of the total GRSG habitat, and requires beneficial reclamation and rehabilitation activities that prioritize reestablishment of native vegetation communities in sagebrush steppe communities.

### **ES.6 GREATER SAGE-GROUSE HABITAT MANAGEMENT PROPOSED PLAN AND ENVIRONMENTAL EFFECTS**

In consideration of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP/EIS, the BLM developed this Proposed Plan for Greater Sage-Grouse Habitat Management (“Proposed Plan”).

The Proposed Plan represents the BLM's proposed approach for meeting the purpose and need consistent with the agency's legal and policy mandates.

The BLM Proposed Plan addresses threats to GRSG and its habitat identified by the USFWS in the March 2010 listing decision that apply to the HiLine planning area as well as threats described in the COT report. The Proposed Plan seeks to provide greater regulatory certainty for management actions intended to conserve the GRSG (**Table ES-2**, Key Components of the HiLine Proposed Plan Addressing COT Report Threats). In making its determination of whether the GRSG is warranted to be listed as threatened or endangered under the ESA, the USFWS will evaluate the degree to which land use planning decisions proposed in this RMP/EIS address threats to GRSG and its habitat. The Proposed Plan would maintain and enhance GRSG populations and habitat. The Proposed Plan benefits GRSG populations by eliminating disturbance near leks and other key areas.

The Proposed Plan provides consistent GRSG habitat management across the range, prioritizes development outside GRSG habitat, and focuses on a landscape-scale approach to GRSG habitat conservation. The Proposed Plan would reduce habitat disturbance and fragmentation through limitations on surface-disturbing activities, while addressing changes in resource condition and use through monitoring and adaptive management.

The Proposed Plan adopts key elements of the State of Montana's Management Plan and Conservation Strategies for Sage-Grouse (Montana Sage Grouse Work Group 2005)<sup>5</sup> by establishing conservation measures to minimize habitat loss, particularly as a result of surface disturbance from energy exploration and development.

If the BLM finds that the State of Montana is implementing a GRSG Habitat Conservation Program that is effectively conserving the GRSG, the BLM will review the management goals and objectives to determine if they are being met and whether amendment of the BLM Proposed Plan is appropriate to achieve consistent and effective conservation and GRSG management across all lands regardless of ownership.

For a full description of the Proposed Plan, see **Chapter 2**.

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<sup>5</sup> Montana Sage Grouse Work Group. 2005. Management Plan and Conservation Strategies for Sage-Grouse in Montana.

**Table ES-2**  
**Key Components of the HiLine Proposed Plan Addressing COT Report Threats**

<b>Threats to GRSG and its Habitat (from COT Report)</b>	<b>Key Component of the HiLine Proposed Plan</b>
All Threats	<ul style="list-style-type: none"> <li>• Implement the Adaptive Management Plan, which allows for more restrictive land use allocations and management actions to be implemented if habitat or population hard triggers are met.</li> <li>• Require and ensure mitigation that provides a net conservation gain to GRSG.</li> <li>• Monitor implementation and effectiveness of conservation measures in GRSG habitats according to the Habitat Assessment Framework.</li> <li>• Apply buffers necessary based on project type and location to address impacts on leks when authorizing actions in GRSG habitat.</li> <li>• Apply Required Design Features (RDFs) when authorizing actions in GRSG habitat.</li> <li>• Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.</li> </ul>
All development threats, including mining, infrastructure, and energy development	<ul style="list-style-type: none"> <li>• PHMA: Implement an anthropogenic disturbance cap of 3% at the Biologically Significant Unit (BSU) and project area scale.</li> <li>• PHMA: Implement a density cap of an average of 1 energy and mining facility per 640 acres.</li> </ul>
Energy Development—Fluid Minerals	<ul style="list-style-type: none"> <li>• PHMA: Open to fluid mineral leasing subject to No Surface Occupancy (NSO) stipulation without waiver or modification, and with limited exception. In SFAs, NSO without waiver, modification, or exception.</li> <li>• GHMA: Open to fluid mineral leasing subject to NSO within 0.6 miles of an occupied lek and Timing Limitation (TL) stipulations.</li> </ul>
Energy Development—Wind Energy	<ul style="list-style-type: none"> <li>• PHMA: Exclusion area (not available for wind energy development under any conditions)</li> <li>• GHMA: Avoidance area (may be available for wind energy development with special stipulations)</li> </ul>
Energy Development—Solar Energy	<ul style="list-style-type: none"> <li>• PHMA: Exclusion area (not available for solar energy development under any conditions)</li> <li>• GHMA: Avoidance area (may be available for solar energy development with special stipulations)</li> </ul>
Infrastructure – major Rights-of-Way (ROW)	<ul style="list-style-type: none"> <li>• PHMA: Avoidance area (may be available for major ROWs with special stipulations)</li> <li>• GHMA: Avoidance area (may be available for major ROWs with special stipulations)</li> </ul>
Infrastructure – minor ROWs	<ul style="list-style-type: none"> <li>• PHMA: Avoidance area (may be available for minor ROWs with special stipulations)</li> </ul>
Mining—locatable minerals	<ul style="list-style-type: none"> <li>• SFA: Recommend withdrawal from the Mining Law of 1872</li> </ul>
Mining—non-energy leasable minerals	<ul style="list-style-type: none"> <li>• PHMA: Closed area (not available for non-energy leasable minerals)</li> </ul>

**Table ES-2**  
**Key Components of the HiLine Proposed Plan Addressing COT Report Threats**

<b>Threats to GRSG and its Habitat (from COT Report)</b>	<b>Key Component of the HiLine Proposed Plan</b>
Mining—saleable minerals	<ul style="list-style-type: none"> <li>• PHMA: Closed area (not available for saleable mineral development) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)</li> </ul>
Mining—coal	<ul style="list-style-type: none"> <li>• PHMA is essential habitat for GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).</li> </ul>
Livestock Grazing	<ul style="list-style-type: none"> <li>• Prioritize the review and processing of grazing permits/leases in SFAs followed by PHMA.</li> <li>• The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on the GRSG Habitat Objectives Table, Land Health Standards, and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis.</li> <li>• Prioritize field checks in SFAs followed by PHMA to ensure compliance with the terms and conditions of grazing permits.</li> </ul>
Free Roaming Equid Management	<ul style="list-style-type: none"> <li>• Not applicable. Not present in the planning area.</li> </ul>
Range Management Structures	<ul style="list-style-type: none"> <li>• Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats.</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>• PHMA: Do not construct new recreation facilities.</li> </ul>
Fire	<ul style="list-style-type: none"> <li>• PHMA: Prioritize suppression immediately after life and property to conserve the habitat.</li> <li>• GHMA: Prioritize suppression where wildfires threaten PHMA.</li> </ul>
Nonnative, Invasive Plants Species	<ul style="list-style-type: none"> <li>• Improve GRSG habitat by treating annual grasses.</li> <li>• Treat sites in PHMA and GHMA that contain invasive species infestations through an integrated pest management approach.</li> </ul>
Sagebrush Removal	<ul style="list-style-type: none"> <li>• PHMA: Maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover.</li> <li>• All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.</li> </ul>
Pinyon and/or Juniper Expansion	<ul style="list-style-type: none"> <li>• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.</li> </ul>
Agricultural Conversion and Ex-Urban Development	<ul style="list-style-type: none"> <li>• GRSG habitat will be retained in federal management.</li> </ul>

## ES.7 SUMMARY

Since the release of the Draft HiLine RMP/EIS, the BLM has continued to work closely with a broad range of governmental partners, including the United States Department of Agriculture Natural Resources Conservation Service, the USFWS and US Geological Survey in DOI, Indian tribes, governors, state agencies, and county commissioners. Through this cooperation, the BLM has developed the Proposed Plan that, in accordance with applicable law, achieves the long-term conservation of GRSG and its habitat.

Conservation of the GRSG is a large-scale challenge that requires a landscape-scale solution that spans 11 western states. The HiLine RMP/EIS achieves the consistent, range-wide conservation objectives as outlined below. Additionally, the HiLine RMP/EIS would align with the State of Montana's priorities and land management approaches consistent with conservation of GRSG.

**Minimize additional surface disturbance.** The most effective way to conserve the GRSG is to protect existing, intact habitat. The BLM aims to reduce habitat fragmentation and protect key habitat areas. The HiLine RMP/EIS minimizes surface disturbance on approximately 1,723,000 million acres of BLM-administered lands by allocating lands as PHMA and GHMA with decisions that aim to conserve GRSG habitat.

The limitations on mineral and ROW development along with the disturbance cap, lek buffers, and adaptive management would result in a net conservation gain for GRSG. The Proposed Plan prioritizes oil and gas development outside of GRSG habitat, and focuses on a landscape-scale approach to conserving GRSG habitat. In the context of the planning area, land use allocations under the Proposed Plan would limit or eliminate new surface disturbances in PHMA, while minimizing disturbance in GHMA.

**Improve habitat condition.** While restoring lost sagebrush habitat can be very difficult in the short term, particularly in the most arid areas, it is often possible to enhance habitat quality through purposeful management. The HiLine RMP/EIS commits to management actions necessary to achieve science-based vegetation and GRSG habitat management objectives established in the Proposed Plan.

Habitat restoration and vegetation management actions would improve GRSG habitat and prioritize restoration to benefit PHMA. As a result, the restoration and management of vegetation actions would focus on GRSG.

**Reduce threat of rangeland fire to sage-grouse and sagebrush habitat.** Rangeland fire can destroy sagebrush habitat and lead to the conversion of previously healthy habitat into landscapes dominated by invasive species. The HiLine RMP/EIS incorporates Secretarial Order 3336 and sets forth protocols to improve the BLM's ability to protect GRSG habitat from damaging wildfire.

Prescribed fire would only be used to improve or maintain habitat for GRSG and would be only be used to meet specific fuels objective standards.

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# Reader's Guide and Executive Summary

## Reader's Guide

The HiLine Proposed Resource Management Plan and Final Environmental Impact Statement (Proposed RMP/Final EIS) was prepared under the guidance of the Federal Land Policy and Management Act and the National Environmental Policy Act.

The Proposed RMP/Final EIS is organized into five chapters and the appendices. The five chapters detail the introduction, alternatives, affected environment, environmental consequences, and coordination. In order to improve the readability of this document and to enable the reader to easily locate referenced tables/sections, the resource discussions are organized alphabetically in Chapters 2, 3 and 4. The chapter numbers are noted in the document headers and resource sections are noted in the footers, along with the page numbers. The appendices include supporting information for some of the topics discussed in Chapters 1 through 5 which would be too lengthy to include under a specific section.

### Chapter 1: Introduction

This chapter contains background information on the planning process and sets the stage for the information that is presented in the rest of the document. Chapter 1 has 15 main sections, beginning on page 1. They include:

- Background
- Purpose and Need
- Planning Area
- Collaboration
- Planning Process
  - Scoping
    - Issues Addressed
    - Issues and Concerns Considered but Not Addressed Further
  - Planning Criteria
  - Vision and Management Goals
  - Development of Alternatives
    - Related Plans
    - Relationship to BLM Policies, Plans, and Programs
  - Draft Resource Management Plan
  - Proposed Resource Management Plan/Final EIS

### Chapter 2: Alternatives

This chapter describes the management alternatives for the HiLine and is presented in seven sections:

- Introduction
  - Summary of Major Changes to the Proposed RMP/Final EIS
- Implementation and Monitoring
- Greater Sage-Grouse Habitat Management
- Current Management and Alternatives
- Alternatives Considered but Not Analyzed in Detail
- Summary comparisons of Alternatives, Environmental Consequences, and Alleviated Threats to Greater Sage-Grouse

The Current Management and Alternatives section, beginning on page 49, provides a detailed description of the five alternatives for each resource presented, as well as Decisions Common to All Alternatives, which will be carried forward into each alternative described in the chapter.

The information relating to the alternatives, affected environment, and environmental consequences (impact analysis) is organized by the following resource areas:

- Air Resources and Climate Change
- Cultural Resources
- Fire Management and Ecology
- Fish
- Fluid Minerals
- Forests and Woodlands
- Lands and Realty
- Livestock Grazing
- Noxious Weeds and other Invasive Non-Native Species
- Off-Highway Vehicle Use and Travel and Transportation Management
- Paleontological Resources
- Public Safety
- Recreation
- Renewable Energy Resources
- Social
- Soil Resources
- Solid Minerals
- Special Designations
- Transportation and Facilities
- Vegetation – Rangeland
- Vegetation – Riparian and Wetland
- Vegetation – Special Status Plants
- Visual Resources
- Water Resources
- Wilderness Characteristics
- Wildlife

Chapter 2 begins on page 25.

### **Chapter 3: Affected Environment**

This chapter provides background information on the various resources administered by the Bureau of Land Management (BLM) that could be affected by the alternatives described in Chapter 2.

Chapter 3 begins on page 277.

### **Chapter 4: Environmental Consequences**

This chapter describes the environmental, economic and social consequences of implementing the alternatives presented in Chapter 2 and is presented in seven sections:

- Introduction
- Reasonable Foreseeable Future Actions
- Reasonable Foreseeable Development Scenarios
- Acres of Surface Disturbance
- Impacts from the Alternatives
- Unavoidable Adverse Impacts
- Short-Term Use versus Long-Term Productivity
- Irreversible and Irretrievable Commitment of Resources

The impact-related information in this chapter is organized by resource, then by effects to the resource from other resource sections/categories under each alternative. Some resource sections do not address all the categories or topics covered in Chapter 2, but only those that would affect the resource section being discussed.

Chapter 4 begins on page 449.

## Chapter 5: Consultation and Coordination

This chapter includes a description of the public participation opportunities, consultation and coordination with tribal governments; other agencies and state and local governments, including those with Cooperating Agency status, and the Central Montana Resource Advisory Council.

The agencies, organizations and businesses receiving the document are listed, along with a brief introduction of the preparers of the Proposed RMP/Final EIS. This chapter also includes the public comments received from individuals, agencies, organizations, groups and businesses on the Draft RMP/EIS and the BLM's responses to the comments.

Chapter 5 begins on page 789.

## Appendices

The appendices are lettered and organized in the order they are referenced in the Draft RMP/EIS. They include:

- A Implementation and Monitoring
- B HiLine District Air Resource Management Plan: Adaptive Management Strategy for Oil and Gas Resources
- C Best Management Practices
- D Fire and Emergency Stabilization and Rehabilitation
- E Fluid Minerals
  - E.1 Oil and Gas Operations
  - E.2 Oil and Gas Best Management Practices (General Conditions of Approval)
  - E.3 Bureau of Reclamation Lease Stipulations
  - E.4 Oil and Gas Stipulations and Exception, Modification, and Waiver Criteria
  - E.5 Requirements and/or Guidelines for Wildlife, Controlled Surface Use Stipulations
- F Land Ownership Adjustment
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  - F.2 BLM Land Available for Disposal by Exchange or Sale (Category 3)
- G Livestock Allocations
- H Standards for Rangeland Health and Guidelines for Livestock Grazing Management
- I Guidelines for the Use of Yearling Conversion Factors
- J Reclamation
- K Areas of Critical Environmental Concern, Evaluations of Relevance and Importance Criteria for Existing and Potential ACECs
- L Wild and Scenic Rivers Report, Eligibility and Suitability Determinations
- M Greater Sage-Grouse
  - M.1 Mitigation Measures and Conservation Actions for Greater Sage-Grouse Habitat
  - M.2 Greater Sage-Grouse Monitoring Framework
  - M.3 Proposed RMP (Alternative E) Consistency with U.S. Fish and Wildlife Service Conservation Objectives Team (COT) Report Recommendations for Sage-Grouse
  - M.4 Greater Sage-Grouse Mitigation
  - M.5 Applying Lek Buffer Distances when Approving Actions
  - M.6 Required Design Features for Greater Sage-Grouse Habitat
  - M.7 Greater Sage-Grouse Effects Analysis Process
  - M.8 Greater Sage-Grouse Disturbance Caps
  - M.9 Cumulative Effects Analysis – Management Zone 1
- N Fish and Fisheries
- O Wind Energy Reasonable Foreseeable Development Scenario

- P Locatable Mineral Resources Reasonable Foreseeable Development Scenario
- Q Wildlife Species
- R Economic Impact Analysis Methodology
- S Recreation Sites and Management Areas

Each appendix may contain several pieces of information related to the topic covered. The appendices are located following the Index, which begins on page 1187.

## Maps

The Proposed RMP/Final EIS includes 18 (11 x 17) foldout maps at the conclusion of Chapter 2. Several other maps are referenced in the Proposed RMP/Final EIS which can be found on the following website: <http://blm.gov/8qkd>.

## Executive Summary

### Purpose and Need

The purpose of the RMP is to provide a single, comprehensive land use plan to guide management of public lands and minerals administered by the HiLine District. The plan provides goals, objectives, land use allocations, and management direction to maintain, improve, or enhance resource conditions and to provide for long-term benefits to the public.

The need for the revision is the result of considerable changes within the planning area since completion of the Judith-Valley-Phillips RMP and the West HiLine RMP. Additional plan amendments and maintenance actions are not adequate to address these changes, which include increased oil and gas leasing, exploration and development activities, heightened public awareness and interest in BLM management actions and permitted uses, increased demand for recreational use of public lands, increased conflicts between land use and wildlife/wildlife habitat, changes in BLM policy, and expanded scientific knowledge and data.

In March 2010, the U.S. Fish and Wildlife Service (USFWS) published its listing decision for the Greater Sage-Grouse as "Warranted but Precluded." Inadequacy of regulatory mechanisms was identified as a major threat in the USFWS finding on the petition to list the Greater Sage-Grouse. The USFWS has identified the principal regulatory mechanism for the BLM as conservation measures in RMPs. Based on the identified threats to the Greater Sage-Grouse and the USFWS timeline for making a listing decision on this species, the BLM needs to incorporate objectives and adequate conservation measures into RMPs in order to conserve, enhance, and/or restore Greater Sage-Grouse habitat.

This RMP revision incorporates specific management actions and conservation measures to conserve Greater Sage-Grouse and its habitats on BLM land.

### Issues Addressed

Planning issues are determined from demands, concerns, conflicts, or problems concerning use or management of public lands and resources. These issues are usually expressed in terms of the potential adverse consequences or effects that a particular land or resource use may have on other lands or resources which are used or valued for other purposes. The following planning issues were identified through public scoping and information gathered in analyzing the existing management situation in the planning area. Based on the input of the public, other government agencies, and the BLM and its cooperators, eleven key issues or unresolved conflicts were identified.

#### **Issue 1: How will the area be managed for the development of fluid minerals, solid minerals, and renewable energy?**

##### **Fluid Minerals**

In March 2004, the United States District Court for the District of Montana determined that the West HiLine RMP, which was approved in 1988, did not analyze the impacts of leasing in the area such as to allow leasing to proceed without appropriate NEPA analysis. The BLM was ordered to prepare an environmental impact statement for the oil and

gas leasing program that covers the three leases. While this ruling only applied to the three leases, the BLM discontinued leasing in the West HiLine planning area until completion of a new resource management plan that would address the oil and gas leasing program.

Oil and gas leasing continues to occur in the remaining portion of the planning area on a very limited basis until completion of a new resource management plan. In 1988, the BLM suspended lease issuance on lands that require special stipulations to protect wildlife resources until a new resource management plan was completed. This was a result of a protest on the issuance of oil and gas leases by the BLM in Montana. In the early 1990s, the BLM prepared the Judith-Valley-Phillips RMP to address this protest along with other resource issues. However, a subsequent protest to the 1992 Judith-Valley-Phillips RMP warranted a supplement to address an alternative for oil and gas leasing that would avoid leasing valuable wildlife habitat. The supplement was never finalized and the HiLine RMP will address the deficiency.

The HiLine RMP will address the oil and gas leasing program for the entire planning area in compliance with FLPMA, NEPA, ESA, NHPA and all other applicable laws, regulations, and policies. Fluid mineral (oil and gas) development and the related transportation network may conflict with other land and resource uses or values in some areas. Principal management considerations include split estate ownership (private surface/federal minerals), activities and human presence in fish and wildlife habitats, and the potential effects of mineral development on recreation values, forage use, air resources, scenic quality, sensitive vegetation types, and water quality. Areas should be identified where surface-disturbing activities (e.g., mineral exploration and development) are suitable or not suitable.

### **Solid Minerals**

Solid mineral development, which includes leasable, locatable, and salable minerals, requires the same management considerations discussed above for fluid minerals.

Leasable mineral resources are managed under the Mineral Leasing Act of 1920. Coal is a leasable solid mineral with occurrence potential in the planning area; however, no leases have been issued, no production is occurring, and the potential for development is considered to be low enough that no interest has been shown in obtaining leases.

Locatable minerals (e.g., gold and silver) are managed under the General Mining Law of 1872, as amended, which allows the location and maintenance of mining claims on those federal mineral estate lands open for mining claim location and patent. The BLM manages the Mining Law program on federal mineral estate as set forth in 43 CFR 3809. BLM management includes authorizing and permitting mineral exploration, mining, and reclamation actions. Areas should be recommended for closure to the mining laws for locatable exploration or development where surface-disturbing activities are not suitable. Any terms or conditions should also be considered when needed to protect other resource values while conducting activities under the operation of the mining laws.

Salable minerals were designated under the Materials Act (July 1947), which authorizes the disposal of petrified wood and common varieties of sand, gravel, stone, pumice, cinders and clay through a contract of sale or free use permit. Uncommon varieties of these same minerals are locatable under the Mining Law. Management actions for salable minerals determine areas open or closed to mineral material development and identify mitigation needed to protect other resource values.

### **Renewable Energy (Solar)**

Opportunities for solar development will be provided consistent with the other goals, objectives, and requirements of this plan. Applications for solar energy projects would be processed and authorized as rights-of-way under Title V of FLPMA. Utility-scale concentrating solar power or photovoltaic electric generating facilities must comply with the BLM's planning, environmental, and right-of-way application requirements as established by BLM guidance (WO IM No. 2011-003) or additional Bureau guidance and/or policy. No BLM lands within the planning area have been identified as having potential for this type of energy source.

### **Renewable Energy (Wind)**

The majority of high development potential areas for wind resources are located in the western third of the planning area (Glacier, Toole and Liberty Counties), which has the least amount of BLM land. At this time no existing or proposed

wind farms are located on BLM land; however, several wind farms are in varying stages of planning on lands not managed by the BLM. These wind farms have the potential to expand; therefore, future wind farms and/or associated facilities (e.g., transmission lines and utility corridors) could occur on BLM land. The increased need for energy and reducing American reliance on foreign energy resources will most likely increase the demand for wind energy development. Some areas may need to be closed to wind energy development or mitigation may need to be considered to protect other resource values.

**Issue 2: Are there opportunities to enhance management through land ownership adjustment?**

Opportunities may exist to consolidate land ownership patterns that would provide improved land management efficiencies as well as benefit private landowners, local communities, and the public. Identification of land parcels and/or establishment of criteria that would be used to identify lands for land ownership adjustments are necessary.

**Issue 3: How will soils and vegetation be managed to achieve or maintain healthy ecosystems while providing for a broad range of multiple uses?**

It is important to determine the appropriate mix of resources produced from the public lands. Vegetation resource values include native vegetative cover, important watersheds, properly functioning riparian areas, quality soils, healthy forests and fuel conditions, and important wildlife habitat (particularly big game crucial winter range and habitat for candidate, sensitive, proposed, or threatened and endangered wildlife and vegetative species). Consumptive uses of vegetation include livestock grazing, forest products, wildlife foraging, and vegetation removal by surface-disturbing activities.

**Issue 4: How will the area be managed for cultural resources and significant paleontological resources?**

Cultural and paleontological resources must be managed in a way that appropriately protects these unique resources consistent with laws, regulations, and policies. Certain resources and areas need protection. Of particular concern is the need for protection of historic/traditional use areas and significant paleontological sites. Other areas should be accessible for more public and recreational uses.

**Issue 5: How should the BLM manage motorized travel to meet the needs for public access and resource uses while considering conflicts of use and effects on other resources?**

Improperly managed motorized travel can conflict with other land and resource uses and values. Of concern are potential effects on resources, including soil, vegetation, wildlife habitat and disturbance, watersheds, visual values, cultural and paleontological resources, and other recreation values. Principal considerations include providing for suitable and sufficient recreation uses and facilities (both dispersed and commercial), visual resource management direction, and OHV use designations.

**Issue 6: How will access be managed to meet the needs of the public?**

Meeting the access needs of the public involves two management issues. One is the acquisition of legal public access to BLM lands for the use and enjoyment of the public and for resource uses (e.g., energy development, right-of-way authorizations, grazing, and other uses). The other involves designating motorized or non-motorized access routes over BLM land, which would be addressed in travel management planning after completion of the RMP.

**Issue 7: How will the BLM manage resource uses while protecting important wildlife habitat and special status species, including Greater Sage-Grouse?**

The principal issues concerning wildlife habitat are surface-disturbing or disruptive activities in big game winter range, migratory routes, and birthing areas (for elk, mule deer, pronghorn, and bighorn sheep) along with the habitats of other important fish and wildlife species (e.g., Greater Sage-Grouse, mountain plovers, and grassland birds). Alteration or elimination of wildlife habitats on private lands has increased the importance of maintaining functional habitats on BLM lands. Populations of Greater Sage-Grouse have declined throughout their range, and some intensively developed areas in the planning area no longer provide functioning sage-grouse habitats.

Several categories of species and their habitats within the planning area require special management or considerations. These species are federally listed threatened and endangered, proposed for listing, and candidate and state sensitive

species, and BLM special status species. Principal concerns associated with special status species are habitat identification, use, and quality; and the interrelationships between these species and other resource uses and human activities.

In March 2010, the USFWS determined that the Greater Sage-Grouse warranted protection under the Endangered Species Act (ESA), but that listing the species was precluded by the need to address other, higher-priority species first (75 FR 13910, March 23, 2010). One reason for the USFWS decision was an identified need for “improved regulatory mechanisms” to ensure species conservation. The principal regulatory mechanisms for the BLM are Resource Management Plans (RMPs); therefore, the BLM is using this opportunity to develop long-term and effective management for the species on the BLM lands (WO IM No. 2012-044).

On October 27, 2014, the USFWS provided the BLM and Forest Service a memorandum titled “[Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes](#).” The memorandum and associated maps provided by the USFWS identify areas that represent recognized “strongholds” for Greater Sage-Grouse that have been noted and referenced as having the highest densities of Greater Sage-Grouse and other criteria important for the persistence of the species. The USFWS recognized areas within the HiLine planning area as “strongholds” for Greater Sage-Grouse. Habitat for Greater Sage-Grouse in the HiLine planning area is shown in Chapter 1, Figure 1.4.

On November 21, 2014, the U.S. Geological Survey (USGS) published “Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review” (USGS 2014). The USGS review provided a compilation and summary of published scientific studies that evaluate the influence of anthropogenic activities and infrastructure on Greater Sage-Grouse populations. The BLM has reviewed this information and examined how lek buffer-distances were addressed through land use allocations and other management actions in the Draft HiLine RMP. Based on this review, in undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer distances in the USGS Report “Conservation Buffer Distance Estimates for Greater Sage Grouse-A Review (Open File Report 2014-1239)” in both General Habitat Management Areas and Priority Habitat Management Areas as detailed in Appendix M.5.

**Issue 8: Which areas, if any, should be managed as special designations and how should they be managed to protect values that warrant special designation status?**

Resources or features of the lands within the planning area must be evaluated to determine if and how those resources or features might be managed in the future using specific or special management practices. A total of 19 Area of Critical Environmental Concern (ACEC) existing designations and new nominations were considered during this planning process:

- Seven designated ACECs currently lie within the planning area: Azure Cave, Big Bend of the Milk River, Bitter Creek, Kevin Rim, Mountain Plover, Sweet Grass Hills, and prairie dog towns within the 7km Complex.
- The BLM also identified four ACEC nominations during scoping that will be considered in the planning process: Malta Geological Area, Woody Island, Frenchman Breaks, and Zortman/Landusky Mine Reclamation.
- The BLM received five ACEC nominations from the public that will be considered in the planning process: Grassland Bird/Greater Sage-Grouse, Greater Sage-Grouse, Five Watersheds, Mountain Plover, and Black-tailed Prairie Dog and Black-footed Ferret.
- Three other ACEC nominations received prior to the commencement of this planning process will also be considered: Old Scraggy; Saddle Butte; and Little Rocky Mountains.

**Issue 9: How will the BLM manage for fire, including wildfire and prescribed fire?**

The BLM prioritizes wildland fire management activities by assessing risk to life and property, commensurate with fire management costs and realized benefit. Mechanical, prescribed fire and other appropriate treatments can be used to restore and maintain fire regimes and land health, and reduce hazardous fuels accumulations. Areas should be identified where fire is desired to manage ecosystems and areas where current conditions create constraints on use, or where unplanned fire is likely to cause negative effects.

**Issue 10: How will the BLM consider social and economic conditions in the planning area when managing BLM lands?**

The planning area provides a variety of resources that contribute to the local economy (e.g., natural gas, livestock grazing, recreation, etc.). Potential social and economic effects associated with management include changes in employment, income, public revenues, economic dependency, economic stability, and quality of life. Management must recognize the economic activities that are dependent on the land and its natural resources.

**Issue 11: Which areas, if any, should be managed for wilderness characteristics and how should they be managed to protect those values?**

Section 201 of FLPMA requires the BLM to maintain on a continuing basis an inventory of all public lands and their resources and other values. This inventory requirement includes maintaining information regarding wilderness characteristics (BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands).

The existing inventory of BLM land in the HiLine planning area was updated and evaluated to determine whether additional lands other than the existing wilderness study areas (WSAs) have wilderness characteristics. Areas with wilderness characteristics must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. Twenty-six areas within the HiLine District have wilderness characteristics. These areas include 386,462 acres of BLM land and vary in size from 4,118 to 49,564 acres. Section 202 of FLPMA requires the BLM to rely on resource inventories in the development and revision of land use plans, including inventory information regarding wilderness characteristics.

**Vision and Management Goals**

The vision of the HiLine District is to manage the planning area in a manner that provides for multiple use while sustaining a healthy and productive environment for present and future generations.

A number of management goals guided the development of alternatives for this RMP. The goals are the result of information provided through public scoping, existing laws and regulations, and the planning team. Management goals are discussed in more detail in Chapter 2. These goals include:

- Protect, preserve and interpret the cultural and paleontological resources within the planning area and ensure they are available for appropriate uses by present and future generations.
- Manage air resources, soils, vegetation, and water resources to meet all state and federal standards, maintain a diversity of ecological conditions and enhance resource values while providing for a variety of multiple uses that are economically and biologically feasible.
- Ensure habitat for fish and wildlife species, including special status species, is of sufficient quantity and quality to enhance biological diversity and sustain ecological, economic and social values.
- Ensure dependable and environmentally responsible exploration and development of mineral resources and renewable energy consistent with other resource goals.
- Improve resource management efficiency and provide public benefits while protecting significant resources.
- Provide a diverse array of recreational opportunities and visitor experiences while maintaining healthy BLM land resources.
- Manage certain areas with significant values (e.g., ACECs, WSAs, National Historic Trails, etc.) through special management to protect those resources in need of a higher degree of management.

**Summary of Changes to Alternative E to Develop the Proposed RMP/Final EIS**

The Draft RMP/EIS was published in March 2013, and the public comment period closed in June 2013. The BLM identified 1,185 individual comments from the comment documents received, which touched on a wide range of issues.

While many of the comments supported the Preferred Alternative in the Draft RMP/EIS, commenters also identified areas where the document could be improved. The HiLine District carefully evaluated and responded to these comments (see Chapter 5). The Proposed RMP/Final EIS contains a number of changes made in response to comments. As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP/EIS, the BLM has developed the Proposed RMP/Final EIS for managing BLM-administered lands in north central Montana. The Proposed RMP/Final EIS focuses on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed RMP/Final EIS is a variation of the Preferred Alternative (E) and is within the range of alternatives analyzed in the Draft RMP/EIS.

Changes made to the Proposed RMP/Final EIS from the Preferred Alternative (E) in Draft RMP/EIS are the following:

***Air Resources and Climate Change:*** Additional background information was added to the Proposed RMP regarding emissions of greenhouse gases (GHG) and national actions to reduce GHGs. The goals were revised for air quality and air quality-related values, and objectives were added for reducing air pollutant and GHG emissions from BLM-authorized activities.

***Fluid Minerals:*** Additional background information was added to the Proposed RMP regarding hydraulic fracturing (fracking). Guidance in the hydraulic fracturing rule published as final on March 26, 2015 (80 Fed. Reg. 16128) would be applied as appropriate. New oil and gas lease stipulations were added for Air Quality and VRM Class II areas. To provide consistency between Montana BLM land use plans, the oil and gas lease stipulation for general sage-grouse habitat was revised from a one-mile no surface occupancy (NSO) buffer around leks to a 6/10 mile lek buffer.

***Livestock Grazing:*** Specific, measurable objectives for managing livestock grazing were added. Livestock grazing would be managed to promote proper functioning condition on upland, riparian and sensitive species habitats. Additional rationale was added for not analyzing a No Grazing or Reduced Grazing alternative.

***National Historic Trails:*** The goal was revised and objectives were added for congressionally designated national historic trails. A 1/2 mile wide trail management corridor was identified for the Nez Perce and the Lewis and Clark National Historic Trails. Additional language was added clarifying the BLM would implement the Interagency National Historic Trail Plans for the Lewis and Clark and Nez Perce National Historic Trails for BLM-managed lands within identified Trail Management Corridors and participate in the interagency planning update efforts as needed.

***Renewable Energy Resources:*** Approximately 1,600 acres near Shelby, Montana were identified as Potential Wind Development Areas. Priority sage-grouse habitat was closed to development of commercial solar energy and geothermal resources. General sage-grouse habitat would be an avoidance area for wind and solar energy ROWs in the Preferred Alternative.

***Vegetation:*** A new goal and objective was added guiding management of woody draws. Woody draws would be managed to achieve multi-aged stands that are healthy, structurally diverse, and reproductively successful. The goals and objectives for riparian areas and wetlands were modified to clarify that management strategies to promote proper functioning condition (PFC) would apply to wetland habitats as well as riparian areas.

***Wilderness Characteristics:*** Based on the BLM's consideration of citizen-submitted information the acreage of lands with wilderness characteristics was adjusted from 386,462 acres to 399,482 acres. A total of 16,393 acres would be managed to protect wilderness characteristics in the Proposed RMP as compared to 10,714 acres in the Preferred Alternative in the Draft RMP. Map 2.8 was corrected to show that lands with wilderness characteristics "managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics," would be managed as semi-primitive motorized under the recreation opportunity spectrum (ROS).

***Wildlife:*** Additional language was added clarifying the State of Montana's role in managing native wildlife populations, including proposals to reestablish native species such as black-footed ferrets and wild bison. The BLM would work cooperatively with Montana Fish, Wildlife and Parks (MFWP), U.S. Fish and Wildlife Service (USFWS), other agencies, partners, and cooperators in the development of wildlife restoration plans.

No new grazing permits authorizing sheep or goat allotments would be allowed within the MFWP Bighorn Sheep Management Zone.

**Special Status Species- Greater Sage-Grouse:** The HiLine District includes Greater Sage-Grouse (GRSG) habitat and the RMP reflects the following changes to decisions for the conservation of sage-grouse. The boundaries of the preliminary priority sage-grouse habitat were expanded in the Preferred Alternative to better match the core sage-grouse habitat delineated by MFWP. This increased the Greater Sage-Grouse Protection Priority Area from approximately 930,000 BLM surface acres to 1,006,000 acres and increased the size of the Grassland Bird/Greater Sage-Grouse Priority Area from 299,000 acres to 426,000 acres. In the Preferred Alternative of the Final EIS, the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Area are referred to as Priority Habitat Management Areas (PHMA). General sage-grouse habitat is referred to as General Habitat Management Areas (GHMA).

A 927,000 acre Sagebrush Focal Area (SFA) that represents a recognized “stronghold” for Greater Sage-Grouse was designated in south Phillips and Valley Counties. The SFA, as it relates to BLM land, approximates the Greater Sage-Grouse Protection Priority Area ACEC that was proposed and analyzed in Alternative B of the Draft EIS. An assessment of the Proposed RMP consistency with USFWS Conservation Objectives Team (COT) Report was completed (see Appendix M.3), and a summary comparison of alleviated threats to Greater Sage-Grouse by alternative was also prepared (see Table 2.30). A new sage-grouse mitigation strategy was added (Appendix M.4). A complete summary of new proposed sage-grouse habitat management actions is provided below in the Greater Sage-Grouse Habitat Management section.

Allocations for PHMA and GHMA – Allocations in the Proposed RMP/Final EIS provide more opportunities for uses in GHMA, while still maintaining conservation management by establishing screening criteria for project/activity review in GRSG habitat.

Sagebrush Focal Areas (SFAs) – These areas have been identified in the Proposed Plan based on recommendations in a USFWS memorandum, and, as to BLM land, are proposed to be managed as PHMA with the following additional management: recommended for withdrawal; NSO without waiver, exception, or modification for fluid mineral leasing; and prioritized for management and conservation actions including, but not limited to review of livestock grazing permits/leases. Alternative B identified recommendation for withdrawal; Alternative E identified NSO, and prioritization the review of grazing permits and leases, and analyzed the impacts of those decisions. As such, the management of these areas as SFAs and the impacts of the associated management decisions was addressed in the Draft RMP/EIS and is qualitatively within the spectrum of alternatives analyzed.

The BLM will manage these areas, totaling approximately 927,000 acres of BLM land within the HiLine planning area, as SFAs because of their importance to the conservation of the species range-wide. Specifically, SFAs include characteristics such as existing high-quality sagebrush habitat; highest breeding densities; have been identified as essential to conservation and persistence of the species; represent a preponderance of current federal ownership and in some cases are adjacent to protected areas that serve to anchor the conservation importance of the landscape. In light of the landscape level approach to sage grouse conservation provided through this planning effort and as defined by the characteristics set forth above, as well as additional considerations, including potential for impacts from climate change, fire and invasives, these areas have been identified as SFAs.

As noted in the Draft RMP/EIS, one of the goals/objectives of this planning effort is to protect both the habitat *and* the species. The habitat in the SFAs exhibits areas of high-quality sagebrush habitat, areas with highest breeding densities, and areas identified as essential to conservation and persistence of the species.

USGS Buffer Study – Included a management action to incorporate the lek buffer-distances identified in the USGS report titled “Conservation Buffer Distance Estimates for Greater Sage Grouse—A Review: USGS Open File Report 2014-1239” during NEPA analysis at the implementation stage. Although the buffer report was not available at the time of the Draft RMP/EIS release, applying these buffers was addressed in the Draft RMP/EIS and is qualitatively within the spectrum of alternatives analyzed. Specifically, Alternative B identified and analyzed allocation restrictions such as closure to fluid minerals, recommendation for withdrawal, and exclusion of wind energy ROWs. Accordingly, the management decision to require lek buffers for development within certain habitat types is within the range of alternatives analyzed.

**Adaptive Management** – Identification of hard and soft adaptive management triggers for population and habitat and identified appropriate management responses. Chapter 2 of the Draft RMP/EIS identified that the BLM would further develop the adaptive management approach by identifying hard and soft triggers and responses. All of the adaptive management hard trigger responses were analyzed within the range of alternatives.

**Monitoring and Disturbance** – The monitoring framework was further refined in the Proposed RMP/Final EIS, and further clarification as to how disturbance cap calculations would be measured were developed for the Proposed RMP/Final EIS. During the public comment period, the BLM received comments on how monitoring and disturbance cap calculations would occur at implementation. The Draft RMP/EIS outlined the major components of the monitoring strategy, as well as provided a table portraying a list of anthropogenic disturbances that would count against the disturbance cap. A BLM Disturbance and Monitoring Sub-team further enhanced the two Appendices (M.2 and M.8) in the Proposed RMP/Final EIS.

**Mitigation Strategy; Net Conservation Gain** –The net conservation gain strategy is in response to the overall landscape-scale goal which is to enhance, conserve, and restore GRSG and its habitat. All of the action alternatives provided management actions to meet the landscape-scale goal.

**WAFWA Management Zone Cumulative Effects Analysis on GRSG** – A quantitative cumulative effects analysis for GRSG was included in the Proposed RMP/Final EIS. This analysis was completed to analyze the effects of management actions on GRSG at a biologically significant scale which was determined to be at the WAFWA Management Zone level. The Draft RMP/EIS, in Chapter 4, included a qualitative analysis and identified that a quantitative analysis would be completed for the Proposed RMP/Final EIS at the WAFWA Management Zone.

**Public Comment on Draft RMP/EIS** – Updated the Proposed RMP/Final EIS based on public comment received on the Draft RMP/EIS. Additional information on the public comments and the BLM's responses can be found in Chapter 5 of this Proposed RMP/Final EIS.

NEPA requires agencies to prepare a supplement to the draft EIS: 1) if the agency makes substantial changes in the proposed action that are relevant to environmental concerns; or 2) if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. A supplement is not necessary if a newly formulated alternative is a minor variation of one of the alternatives and is qualitatively within the spectrum of alternatives analyzed in the Draft EIS.

The Proposed RMP includes components of the alternatives analyzed in the Draft EIS. Taken together, these components present a suite of management decisions that present a minor variation of the preferred alternative identified in the Draft RMP/Draft EIS and are qualitatively within the spectrum of alternatives analyzed.

As such, the BLM has determined that the Proposed RMP is a minor variation of the preferred alternative and that the impacts of the Proposed RMP would not affect the human environment in a substantial manner or to a significant extent not already considered in the Draft EIS. The impacts disclosed in the Proposed RMP/Final EIS are similar or identical to those described Draft RMP/EIS.

## **General Description of Each Alternative**

The five alternatives provide a reasonable range of management options to resolve the issues identified for the HiLine District. Each alternative fits within the framework provided by the vision and management goals described above. Following is a brief description of the alternatives which highlights the key management decisions to be made in this RMP/EIS. A more complete overview of the alternatives, including decisions common to all alternatives, can be found in the text of Chapter 2; Table 2.28, Summary Comparison of Alternatives; Table 2.29, Summary Comparison of Environmental Consequences; and Table 2.30, Summary Comparison of Alleviated Threats to Greater Sage-Grouse. These summary tables are located at the end of Chapter 2.

### **Alternative A (Current Management)**

**Fluid Mineral Leasing:** Approximately 282,062 acres (8%) of federal minerals would be open to leasing subject to major constraints (No Surface Occupancy (NSO)), 2,649,241 acres (76%) would be open to leasing subject to minor

constraints (Timing Limitation Stipulation (TLS) and Controlled Surface Use (CSU)), and 457,849 acres (13%) would be open to leasing subject to standard lease terms only. Approximately 102,298 acres (3%) of federal minerals would be closed to leasing.

**Renewable Energy:** About 92% of the planning area (2,248,366 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and Best Management Practices (BMPs)). About 8% of the planning area would be exclusion areas for wind energy rights-of-way (189,138 acres).

**Solid Minerals:** A total of 76,477 acres would be closed to mineral leasing. Four existing mineral withdrawals would be continued (19,914 acres), including the Sweet Grass Hills Traditional Cultural Property (TCP) withdrawal, which would not be recommended for an extension. Two new withdrawals (1,991 acres) would be recommended. Areas closed to salable minerals would total 74,506 acres.

**Special Designations:** Seven existing ACECs would be continued. No potential ACECs would be designated. Several routes would be considered for back country byway status. No segments would be recommended for inclusion in the National Wild and Scenic Rivers System.

**Wilderness Characteristics:** The BLM would continue to manage other multiple uses as a priority over protecting wilderness characteristics.

**Wildlife – Greater Sage-Grouse:** The national and Montana Greater Sage-Grouse conservation strategies would be used as the basis to address sage-grouse needs during the watershed planning process and project level analysis.

## Alternative B

**Fluid Mineral Leasing:** Approximately 258,560 acres (7%) of federal minerals would be open to leasing subject to major constraints (NSO); 3,291 acres (<1%) would be open to leasing subject to minor constraints (TLS and CSU); and 55,962 acres (2%) would be open to leasing subject to standard lease terms only. Approximately 3,173,637 acres (91%) of federal minerals would be closed to leasing.

**Renewable Energy:** Less than 1% of the planning area (6,637 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs), and about 10% of the planning area (239,014 acres) would be avoidance areas. About 90% of the planning area (2,191,823 acres) would be exclusion areas for wind energy rights-of-way.

**Solid Minerals:** A total of 1,667,506 acres would be closed to mineral leasing. Four existing mineral withdrawals would be continued (20,058 acres). The BLM would recommend a 20-year extension for the Sweet Grass Hills TCP withdrawal, and modifications to the Camp Creek and Montana Gulch campgrounds withdrawals. Nine new withdrawals would be recommended (1,674,298 acres). Areas closed to salable minerals would total 1,424,575 acres.

**Special Designations:** Six existing ACECs would be continued. Four potential ACECs would be designated. No back country byways would be designated. The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as suitable for inclusion in the National Wild and Scenic Rivers System.

**Wilderness Characteristics:** The BLM would manage 26 areas to protect wilderness characteristics as a priority over other multiple uses (386,428 acres).

### Wildlife

**Grassland Bird/Greater Sage-Grouse Priority Areas:** To minimize habitat fragmentation, four areas with BLM surface ownership would be managed as an ACEC to retain intact blocks of native vegetation. One of these areas is also a sage-grouse core area identified by Montana Fish Wildlife and Parks (MFWP). These four areas would include 461,220 acres of BLM surface.

**Greater Sage-Grouse Protection Priority Area:** To minimize wildlife habitat fragmentation, an area with BLM surface ownership greater than 50% would be managed as an ACEC to retain intact blocks of native vegetation where contiguous acreage of greater than 10,000 acres is present. This would include 930,265 acres of BLM surface.

## Alternative C

**Fluid Mineral Leasing:** Approximately 1,291,160 acres (37%) of federal minerals would be open to leasing subject to major constraints (NSO); 1,681,991 acres (48%) would be open to leasing subject to minor constraints (TLS and CSU); and 299,713 acres (9%) would be open to leasing subject to standard lease terms only. Approximately 218,586 acres (6%) of federal minerals would be closed to leasing.

**Renewable Energy:** About 4% of the planning area (106,182 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs) and 34% of the planning area (821,335 acres) would be avoidance areas. About 62% of the planning area would be exclusion areas for wind energy rights-of-way (1,509,958 acres).

**Solid Minerals:** A total of 1,534,100 acres would be closed to mineral leasing. Four existing mineral withdrawals would be continued (20,058 acres). The BLM would recommend a 20-year extension for the Sweet Grass Hills TCP withdrawal, and modifications to the Camp Creek and Montana Gulch campgrounds withdrawals. Ten new withdrawals would be recommended (1,539,290 acres). Areas closed to salable minerals would total 1,480,316 acres.

**Special Designations:** Six existing ACECs would be continued. Four potential ACECs would be designated. No back country byways would be designated. The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as nonsuitable for inclusion in the National Wild and Scenic Rivers System.

**Wilderness Characteristics:** The BLM would manage 12 areas (228,419 acres) to protect wilderness characteristics as a priority over other multiple uses and would apply management restrictions to reduce impacts to wilderness characteristics on 75,327 acres.

### Wildlife

**Grassland Bird/Greater Sage-Grouse Priority Areas:** To minimize habitat fragmentation, two areas with BLM surface ownership would be managed to retain intact blocks of native vegetation. One of these areas is also a sage-grouse core area identified by MFWP. These two areas would include 298,772 acres of BLM surface.

**Greater Sage-Grouse Protection Priority Area:** To minimize wildlife habitat fragmentation, an area with BLM surface ownership greater than 50% would be managed to retain intact blocks of native vegetation where contiguous acreage of greater than 10,000 acres is present. This would include 930,265 acres of BLM surface.

## Alternative D

**Fluid Mineral Leasing:** Approximately 357,456 acres (10%) of federal minerals would be open to leasing subject to major constraints (NSO); 2,461,652 acres (71%) would be open to leasing subject to minor constraints (TLS and CSU); and 597,668 acres (17%) would be open to leasing subject to standard lease terms only. Approximately 74,674 acres (2%) of federal minerals would be closed to leasing.

**Renewable Energy:** About 10% of the planning area (231,961 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs) and 78% of the planning area (1,912,095 acres) would be avoidance areas. About 12% of the planning area (293,418 acres) would be exclusion areas for wind energy rights-of-way.

**Solid Minerals:** A total of 243,635 acres would be closed to mineral leasing. Three existing mineral withdrawals would be continued (387 acres). The Sweet Grass Hills TCP and Zortman/Landusky mine reclamation withdrawals would be allowed to expire. The BLM would recommend modifications to the Camp Creek and Montana Gulch campgrounds withdrawals and revocation of three withdrawals. Eight new withdrawals would be recommended (184,458 acres). Areas closed to salable minerals would total 275,814 acres.

**Special Designations:** Six existing ACECs would be continued. Four potential ACECs would be designated. No back country byways would be designated. The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as nonsuitable for inclusion in the National Wild and Scenic Rivers System.

**Wilderness Characteristics:** The BLM would manage other multiple uses as a priority over protecting wilderness characteristics.

**Wildlife – Greater Sage-Grouse:** The BLM would use the national and Montana Greater Sage-Grouse conservation strategies as the basis to address Greater Sage-Grouse needs during the watershed planning process and project level analysis. Greater Sage-Grouse habitat suitability determinations would be based upon existing guidelines modified with data from recent habitat inventories and assessments in the planning area. Relevant range-wide research findings would also be included in habitat suitability determination.

## **Alternative E (Preferred Alternative)**

**Fluid Mineral Leasing:** Approximately 1,711,378 acres (49%) of federal minerals would be open to leasing subject to major constraints (NSO); 1,460,096 acres (42%) would be open to leasing subject to minor constraints (TLS and CSU); and 167,273 acres (5%) would be open to leasing subject to standard lease terms only. Approximately 152,702 acres (4%) of federal minerals would be closed to leasing.

**Renewable Energy:** The Greater Sage-Grouse Priority Habitat Management Areas would be exclusion areas for solar and wind energy rights-of-way. General Habitat Management Areas would be an avoidance area for solar and wind energy rights-of-way.

About 1% of the planning area (33,119 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs). Approximately 1,600 acres of open areas near Shelby, Montana would be designated Potential Wind Development Areas. The lands designated for potential wind development could be offered for competitive leasing at the discretion of the authorized officer. About 36% of the planning area (885,661 acres) would be avoidance areas. Avoidance areas may include mitigation for cultural resources, paleontological resources, visual resources, soils, riparian areas, and wildlife. Mitigation measures would be applied on a case-by-case basis during project level planning.

Exceptions to avoidance areas may be granted if an environmental review demonstrates that effects could be mitigated to an acceptable level.

About 62% of the planning area would be exclusion areas for wind energy rights-of-way (1,518,695 acres). In addition to the Greater Sage-Grouse Priority Habitat Management Areas, this includes the Bitter Creek and Burnt Lodge WSAs, Little Rocky Mountains and Sweet Grass Hills TCPs, ACECs, large reservoirs and waterfowl complexes, some wildlife habitat, recreation sites, lands managed for their wilderness characteristics, and National Historic Trails.

**Solid Minerals:** A total of 1,571,333 acres would be closed to mineral leasing. Four existing mineral withdrawals would be continued (20,058 acres). The BLM would recommend a 20-year extension for the Sweet Grass Hills TCP withdrawal, and modifications to the Camp Creek and Montana Gulch campgrounds withdrawals. Three withdrawals would be recommended for revocation. The BLM would consider the need for a new withdrawal or right-of-way for the Zortman/Landusky mine reclamation area. Three new withdrawals would be recommended (951,766 acres). Areas closed to salable minerals would total 1,666,720 acres.

**Special Designations:** Six existing ACECs would be continued. Four potential ACECs would be designated. No back country byways would be designated. The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as nonsuitable for inclusion in the National Wild and Scenic Rivers System.

**Wilderness Characteristics:** The BLM would manage 3 areas (16,393 acres) to protect wilderness characteristics as a priority over other multiple uses and would apply management restrictions to reduce impacts to wilderness characteristics on 290,865 acres.

## Wildlife

**Grassland Bird/Greater Sage-Grouse Priority Habitat Management Area:** To minimize habitat fragmentation, the area with BLM surface ownership would be managed to retain intact blocks of native vegetation. This area includes the northern portion of the sage-grouse core area as identified by MFWP and includes the priority area of conservation (PAC) as identified by the USFWS. This area would include 426,355 acres of BLM surface.

**Greater Sage-Grouse Priority Habitat Management Area:** To minimize wildlife habitat fragmentation, an area with BLM surface ownership greater than 50% would be managed to retain intact blocks of native vegetation where contiguous acreage of greater than 10,000 acres is present. This area includes the southern portion of the sage-grouse core area as identified by MFWP and includes the Priority Area of Conservation as identified by the USFWS. This would include 1,006,312 acres of BLM surface.

## Proposed RMP/Preferred Alternative

The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS. A more complete overview of Alternative E, including decisions common to all alternatives, can be found in the text of Chapter 2, Table 2.29, Summary Comparison of Alternatives, Table 2.30, Summary Comparison of Environmental Consequences, and Table 2.31, Summary Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative. The tables are located at the end of Chapter 2. Management aspects of the Preferred Alternative include:

### Air Resources and Climate Change

Actions would comply with the Clean Air Act requirements, including the State of Montana Air Quality Implementation Plan, through the use of BMPs and the Air Resource Management Plan. Prescribed burns would be managed to comply with Montana DEQ smoke management rules and regulations.

### Cultural Resources

Protection for all cultural resources would occur according to federal laws and BLM regulations and agreements. The BLM must evaluate all proposed actions, initiated or authorized by the BLM, to determine potential effects to historic properties. This evaluation process occurs under Section 106 of the National Historic Preservation Act (NHPA). The BLM must determine, based on inventory and evaluation data, whether the proposed action could impact important cultural resources and, if necessary, take steps to avoid or mitigate possible impacts.

The BLM would consult with Indian tribes when its actions have the potential to affect areas of concern to the practitioners of traditional religions. The activities of concern are those that might degrade the visual or aesthetic nature of an area, or cause the loss of plant species or other resources important to traditional uses. The BLM is required to consult with traditional religious practitioners on policies and procedures to ensure they are considered when implementing agency actions. This includes consultations with federally recognized Indian tribes as sovereign nations in a government-to-government relationship with the United States.

### Little Rocky Mountains Traditional Cultural Property

A portion of the TCP would be closed to oil and gas leasing (32,166 acres). The remaining area (5,936 acres) would be open to leasing with an NSO stipulation.

Through vegetation management or forest health treatments the BLM may restore natural meadows to enhance traditional uses and viewsheds.

The area would be an avoidance area for rights-of-way (30,648 acres).

The area would be an exclusion area for wind energy rights-of-way (30,648 acres).

A portion of the TCP would be closed to solid mineral leasing (e.g., coal) (32,058 acres). The remaining area would be open.

A portion of the TCP would be limited to those mineral material uses necessary for reclamation activities and maintenance of the existing road system (32,058 acres).

### **Sweet Grass Hills Traditional Cultural Property**

The area would be closed to oil and gas leasing (21,275 acres).

The area would be an avoidance area for rights-of-way (7,718 acres).

The area would be an exclusion area for wind energy rights-of-way (7,718 acres).

The area would be closed to solid mineral leasing (e.g., coal) (19,665 acres).

The area is currently withdrawn from locatable mineral entry under the Mining Law until 2017. The BLM would recommend a 20-year extension of the current withdrawal to protect the TCP (19,671 acres).

The area would be closed to solid mineral material sales (e.g., sand and gravel) (19,665 acres).

### **Fire Management and Ecology**

The Bears Paw, Havre Prairie Potholes, Little Rockies, Sun Prairie, and Sweet Grass Hills FMUs would be managed as Category B, where unplanned fire is likely to cause negative effects but prescribed fire treatments may be used to reduce fuels, improve land health, and restore fire regimes. Prevention and education activities are emphasized in this category as well as fuels reduction treatments.

The Malta Breaks and Malta Prairie Potholes FMUs would be managed as Category C, where fire is desired to manage ecosystems but ecological, social, or political conditions create constraints on the use of wildfire for resource benefit. Suppression may be required in Category C areas. The emphasis in this category is to reduce hazardous fuels accumulations and to restore or maintain land health and fire regimes. Prevention and education activities target recreation areas and Wildland Urban Interface (WUI) areas.

Wildfires would be suppressed in both Category B and C areas. If the conditions described above change in Category C areas, suppression strategies would be reevaluated to include use of wildfire for resource benefit. Changes would be developed and implemented through coordination with state, local, tribal, and other federal agencies.

### **Fish**

New reservoirs would be analyzed for fish habitat potential. New and existing designated fishing reservoirs would be maintained and/or improved. All fishing reservoirs would be maintained as fisheries with Montana Fish, Wildlife and Parks (MFWP) concurrence. Fish stocking would be coordinated with MFWP.

An aquatic resource survey and monitoring plan would be developed to identify areas for special management to protect and/or improve aquatic habitats. Fish-bearing streams would be surveyed/monitored as conditions warrant. Fishing reservoirs would be surveyed/monitored to determine actions needed to sustain viable fishing reservoirs.

To the extent possible, roads would be located, designed and maintained to reduce sedimentation, identify and remove unnatural barriers, eliminate fish passage barriers, and maintain/restore riparian vegetation. Culverts and other stream crossings would be analyzed for fish passage and would be made passable as opportunities arise.

The BLM would encourage opportunities for fisheries through coordination with MFWP, public schools and/or the public through development of fishing opportunities and aquatic educational programs.

## Fluid Minerals

Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 C.F.R. 3162.3-1(h).

Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, minimize and apply compensatory mitigation to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to sage-grouse or its habitat and will ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.

The existing oil and gas leases (803,656 acres) would continue according to the respective stipulations until they expire. As these leases expire, the areas would come under the management guidelines of the approved resource management plan. New surface use stipulations (including timing limitation stipulation (TLS), controlled surface use (CSU), and no surface occupancy (NSO)) cannot be applied to existing oil and gas leases or other existing valid use authorizations such as rights-of-way. Site-specific actions such as APDs and rights-of-way in areas with existing oil and gas leases would be allowed, subject to surface use conditions of approval and best management practices.

All lands would be open to geophysical exploration, subject to appropriate resource surveys, surface protection measures, adequate bonding, and adherence to State of Montana standards (ARM, 36.22.5) for geophysical operations.

Approximately 1,711,378 acres (49%) of federal minerals would be open to leasing subject to major constraints (NSO); 1,460,097 acres (42%) would be open to leasing subject to moderate constraints (TLS and CSU); and 167,274 acres (5%) would be open to leasing subject to standard lease terms only. Approximately 152,702 acres (4%) of federal minerals would be closed to leasing. This includes the Bitter Creek WSA, Burnt Lodge WSA, Sweet Grass Hills TCP, a portion of the Little Rocky Mountains TCP, and the Azure Cave ACEC.

## Forests and Woodlands

The BLM would offer forest products as opportunities arise. The probable sale quantity (PSQ) of timber is 664 MBF per year along with 4,000 tons of biomass per year. The PSQ does not include quantities due to salvage timber activities from wildfire, insect, or weather events. Management of old growth stands would follow the Old-Growth Forest Types of the Northern Region (USFS 1992) for overall guidance and direction.

The Burnt Lodge and Bitter Creek WSAs would not be available for sale of wood products. This includes personal use wood products (e.g., Christmas trees, firewood, post and poles).

The BLM would allow for a full range of forest health treatments in the Sweet Grass Hills ACEC that may include the sale of wood products. Landscape-level projects that focus on forest health rather than product quantity allow for an array of silvicultural treatments that mimic ecological processes. The sale of wood products resulting from forest health treatments would be a secondary benefit and would not be a reason for undertaking the treatments. The ACEC would not be open for incidental personal use wood products.

As forest health treatments and/or natural disturbances take place that reduce the risk of dangerous and high severity fire events, suppression strategies may adjust to become more cost effective. Additionally, as forest treatments occur that result in conditions that approach their historical fire regimes, natural fire may be managed for the benefit of the forested resource.

## **Lands and Realty**

### **Land Ownership Adjustment**

All lands within special management areas (WSAs, ACECs, etc.) would be designated as Category 1 (retention) lands (297,559 acres).

Lands classified as priority habitat and general habitat (or habitat classification appropriate for the sub-region) for Greater Sage-Grouse will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.

Lands with wilderness characteristics would be identified for retention or very limited disposal (Category 2). The BLM land in these areas would not be disposed of other than by exchange and only when necessary to further protect or enhance the wilderness characteristics.

BLM land designated as Category 3 (disposal) includes 13,541 acres. The remaining BLM lands would be designated as Category 2 (retention/limited disposal) lands (2,126,465 acres).

Lands or interests in lands brought forward by willing landowners would be considered for acquisition provided they meet one or more of the acquisition criteria. The offered lands surrounded by or adjacent to BLM lands in Category 1 would be considered acquisition priorities over lands surrounded by or adjacent to BLM lands in Category 2. Newly acquired lands that meet retention criteria (Category 1) would be designated as retention lands; all other acquired lands would be designated as Category 2. No lands meeting Category 3 criteria would be considered for acquisition.

The need to protect newly acquired lands would be considered as part of the environmental review prior to acquisition and, if withdrawn, the lands would be managed under the terms and conditions of the withdrawal.

Federal minerals underlying non-federal surface would generally be retained in federal ownership. However, an exchange of this type of mineral estate may be considered on a case-by-case basis if found to be in the public interest. The sale of this type of mineral interest under section 209(b) of FLPMA could be considered only if the requirements of this same section were met. Conversely, the acquisition of patented mining claims would also be addressed on a case-by-case basis.

Land tenure adjustments would follow DOI and BLM guidance and policies for acquisitions and disposals. It is not the intention of the BLM to have a net gain in federal ownership, but rather to provide exceptional national public lands that are accessible to the public.

### **Access**

Legal public or administrative access would be pursued from willing landowners on a case-by-case basis as the need or opportunity arises. Acquisition efforts would be focused on Category 1 and 2 lands where no legal public access exists or where additional access is necessary to meet management objectives.

### **Rights-of-Way, Leases and Permits**

New right-of-way facilities would be located within or adjacent to existing rights-of-way, or corridors, to the extent practical, in order to minimize adverse environmental impacts and the proliferation of separate rights-of-way. New rights-of-way would include appropriate BMPs and mitigation.

### **Corridors**

Five utility and transportation corridors would be designated: U.S. Highway 2, U.S. Highway 87; U.S. Highway 191; and State Secondary Highway Nos. 24 and 325. The corridor for U.S. Highway 191 would exclude the Big Bend of the Milk River ACEC. The corridors would be available for all uses (e.g., powerlines, pipelines). The corridor width would be restricted to 1 mile, or 1/2 mile from the centerline. These corridors would include 19,884 acres of BLM land.

Applicants for new utility and transportation rights-of-way would be encouraged to locate their facility within one of these corridors.

Within the Bitter Creek WSA, management of the Northern Border Pipeline right-of-way would be subject to guidance that protects the resource values for which the WSA was designated. Within the Frenchman Breaks ACEC, management of the Northern Border Pipeline right-of-way would be subject to guidance that protects the resource values of the area.

### **Exclusion Areas**

The Bitter Creek and Burnt Lodge WSAs would be exclusion areas, subject to the existing Northern Border Pipeline right-of-way within the Bitter Creek WSA. If the Bitter Creek WSA is not designated by Congress as wilderness, the area would remain an exclusion area. If the Burnt Lodge WSA is not designated by Congress as wilderness, the area would become an avoidance area.

### **Avoidance Areas**

The BLM would designate 19 avoidance areas for the issuance of rights-of-way. In these areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the area.

During site-specific planning, riparian areas with unique values (i.e.; where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that requires surface disturbance and/or permanent surface occupancy).

### **Unauthorized Use**

The HiLine District attempts to reduce trespass through prevention, detection, and resolution. The priority for resolving trespass in an area is accorded to newly discovered ongoing uses, developments, or occupancies where resource damage is occurring and/or where there is a significant loss of revenue to the United States. In such cases, resolution is needed to halt and prevent further environmental degradation or revenue loss. Historic trespass cases where little or no resources damage is occurring are resolved as workloads permit.

### **Withdrawals**

New withdrawals would be pursued where other agency actions are inadequate to protect critical resource values or federal investments. Examples of such resource values include cultural or historic sites, crucial habitat for threatened and endangered species, or scenic values. Federal investments that may need the protection of a withdrawal could include administrative sites or extensively developed recreation areas. New withdrawals would include only the minimum area required to meet the purpose of the withdrawal.

New withdrawal proposals that result in a transfer of jurisdiction to another federal agency would be considered on a case-by-case basis. Other agency requests for new withdrawals, or modification, extension, or revocation of existing withdrawals would be considered.

Existing withdrawals would be reviewed prior to their expiration to determine if a need exists to extend and/or modify the withdrawal. Should the review indicate that the purpose for which the lands were withdrawn is no longer valid, the withdrawal would be allowed to expire. If the purpose remains valid for a portion of the withdrawn lands, the withdrawal would be modified and extended.

Existing and new proposed mineral withdrawals are addressed under the section Solid Minerals – Locatables in Chapter 2.

If lands are returned to BLM management through the withdrawal process, they would be managed consistent with adjacent public lands.

## Livestock Grazing

Livestock would continue to be allocated approximately 386,600 animal unit months (AUMs) of forage each year from BLM land in the planning area. Approximately 2,390,000 acres would be open to livestock grazing and 47,000 acres would be closed to livestock grazing except as needed for resource management.

Actions consistent with achieving or maintaining the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota would continue to be incorporated into livestock grazing permits and leases and would apply to all livestock grazing activities. Under the grazing regulations if Standards are not met the authorized officer would take appropriate action as soon as practical but not later than the start of the next grazing season upon determining that grazing management needs to be modified to ensure progress toward conformance with the guidelines (43CFR 4180.2(c)(3)). A no grazing alternative would be considered in environmental assessments prepared as part of the grazing permit renewal process as outlined in IM No. MT-2012-042.

Developed recreation sites would not be allocated for livestock grazing.

Existing Allotment Management Plans (AMPs) would continue to be implemented including associated range improvement projects. AMPs would be updated and revised in response to monitoring and/or permit transfers. New AMPs would be developed and implemented to direct site-specific management of livestock grazing after completion of rangeland health assessments.

Livestock grazing would be managed through monitoring of AMPs or similar grazing plans and supervision of grazing use as provided under the grazing regulations. Adjustments to livestock management practices or livestock numbers including increases or decreases would be made based on results of monitoring studies, rangeland health assessments, allotment evaluations, and through an environmental review process. Cooperative efforts to utilize permittee/lessee monitoring would be emphasized.

If monitoring data demonstrate that livestock use on an allotment is adversely affecting Greater Sage-Grouse or their habitat, the terms and conditions of grazing permits may be modified (43 CFR 4130.3, 4130.3-1, 4130.3-2), or changes in active use (43 CFR 4110.3-3) could be considered in order to meet the standards for rangeland health as described in 43 CFR 4180 and the Lewistown Standards for Rangeland Health and Guidelines for Livestock Grazing Management or to otherwise manage, maintain, or improve sage-grouse habitat.

Appropriate indicators and measurements specific to habitat for Greater Sage-Grouse, or any other wildlife species of concern, would be evaluated as part of standards and guidelines assessment (43 CFR 4180) and any necessary and appropriate habitat objectives specific to meeting the wildlife health standard for the site would be identified and incorporated into AMPs or the terms and conditions (43 CFR 4130.3, 4130.3-1, 4130.3-2) of livestock grazing permits.

Most unpermitted parcels would remain available for livestock grazing. The Little Rocky Mountains Allotment No. 05630 and Whitewater Lake Allotment No. 05068 would remain closed to livestock grazing except as needed for resource management. The Cree Crossing Allotment No. 05302 adjacent to the Milk River would remain closed to livestock grazing for recreation values. The 15 Mile Trailing Allotment No. 06237 would be closed to livestock grazing except as needed for livestock trailing purposes.

Yearling factors would be considered.

### Processing Grazing Permits/Leases

The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in Sagebrush Focal Areas (SFAs) followed by PHMAs outside of the SFAs. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.

The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFAs and PHMAs will include specific management thresholds based on the Desired Conditions for Greater Sage-Grouse

Habitat (habitat objectives) presented in Table 2.4 and Land Health Standards (43 CFR 4180.2) and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis. Adjustments to meet seasonal Sage-Grouse habitat requirements could include:

- season or timing of use;
- numbers of livestock (includes temporary non-use or livestock removal);
- distribution of livestock use;
- intensity of use; and
- type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats).

The BLM will develop criteria to prioritize the workload to process permits/leases (either fully processed or reauthorized based on the Appropriations rider, or issued under Section 402(c)(2) of FLPMA) and determine whether modification is necessary prior to renewal within PHMAs, beginning with those in SFAs. In setting priorities, those containing riparian areas and areas not meeting Land Health Standards (43 C.F.R. 4180) will take precedence. Potential criteria for prioritizing permit modifications could include:

- Are there riparian areas or wet meadows in the permit/lease area?
- Was current livestock grazing identified as a causal factor for not meeting Land Health Standards?
- Since the last allotment/watershed evaluation, is there current monitoring information to determine that the watershed/allotment is currently achieving or making significant progress towards achieving land health standards?
- Does the permit have terms and conditions adequate to ensure proper grazing practices to meet Greater Sage-Grouse habitat objectives found in the Special Status Species section of the land use plan?
- Is there data that indicates that the Greater Sage-Grouse habitat objectives, including the Habitat Objectives table found in the Special Status Species section of the land use plan are being met?
- Is there a request from the permittee to modify the terms and conditions of his/her permit?

Additionally, if an existing permit/lease within PHMAs requires modification because current grazing is a significant causal factor for not meeting the Land Health Standards, the BLM will prepare the appropriate NEPA analysis and issue the proposed/final grazing decision under 43 C.F.R. Subpart 4160, subject to administrative appeal and potential judicial challenge.

At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks.

### **Compliance Monitoring**

Allotments within SFAs, followed by those in other PHMA, and focusing on those with riparian areas, will be prioritized for monitoring to ensure compliance with the terms and conditions in the permits. The BLM will collect, at a minimum, the following monitoring data:

- Vegetation Condition
- Actual Use
- Utilization
- Use Supervision

### **Noxious Weeds and Other Invasive Non-Native Species**

Montana state and county-designated noxious weeds would be managed according to current federal, state, and local weed management plans.

The BLM would continue cooperative agreements with state and county entities and would coordinate with other federal, state, and county agencies, weed management areas, and private landowners and organizations.

Weed seed free forage would be used on BLM land. Forage subject to this rule includes hay, grains, cubes, pelletized feeds, straw, and mulch. Reclamation/stabilization and maintenance materials used would be from weed seed free sources to the extent practicable.

Other resource programs would assist in invasive species management through project planning and program implementation. This would include integrating prevention measures in program activities to reduce the spread of invasive species and mitigation measures. The BLM would coordinate with MFWP to address prevention of and potential infestations of Aquatic Nuisance Species.

Pest management including the use of pesticides would be conducted on a case-by-case basis consistent with NEPA analysis.

## **Off-Highway Vehicle Use and Travel and Transportation Management**

Motorized travel in the Bitter Creek WSA (60,701 acres) and Burnt Lodge WSA (13,727 acres) would continue to be limited to identified primitive routes.

### **OHV Area Designations**

The Glasgow OHV area (40 acres) would remain designated open to OHV use off roads and trails.

The Fresno OHV area (125 acres) would remain designated open to OHV use off roads, primitive roads and trails. The boundary of the OHV area would be increased from 84 acres to 125 acres to more closely follow topography of the area and incorporate the existing system of trails. Through travel management planning the BLM would address the need for seasonal restrictions, and/or the need to fence the boundary of the OHV area to address resource values and conflicts of use on surrounding lands. A paleontological inventory would be conducted to determine appropriate access points, fence placement, and need for parking areas.

The Sweet Grass Hills ACEC (7,419 acres) would be closed to motorized travel.

The remaining BLM land (2,429,889 acres) would be designated as "limited." In these areas travel can continue on existing roads, primitive roads, and trails; however, no new routes may be created without specific authorization. Upon the completion of a comprehensive travel management plan, an area would move from an interim OHV Area designation of "limited," to a designation of "limited to designated roads, primitive roads and trails."

Cross-country over-snow vehicle use in the planning area (including snowmobiles) would be allowed, except in crucial winter range areas (110,040 acres). Over-snow vehicles would be subject to the following management guidelines: avoid locations where wind or topographic conditions may have reduced snow depth and create situations where damage to vegetation or soils could occur, or where the majority of vegetation is taller than the protective snow cover. Sensitive areas could be closed to motorized snow vehicle travel if resource damage is found to be occurring in these areas. Additional management guidance regarding the use of over-snow vehicles, such as area closures, seasonal closures, or limiting their use to designated roads, primitive roads and trails may be considered and implemented in subsequent travel management plans.

The use of motorized vehicles, including OHVs, to retrieve game off road would not be allowed, regardless of individual possession of a Montana Disabled Hunting License, in limited or closed areas unless designated through travel management planning. Options for off-road game retrieval could include designating the types of vehicles that may be used, times of day, limited motorized off-road travel or motorized travel on closed roads and would apply to all individuals with a legally taken game animal.

### **Travel Management Areas**

Site-specific travel planning within the Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas and Greater Sage-Grouse Protection Priority Habitat Management Area would be completed within a five (5) year period after the ROD is signed.

In PHMAs and GHMAs, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use).

Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence (43 CFR 8341.2). A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.

Nine travel management areas would be prioritized into the following categories for travel management planning:

**High:**

- Grassland Bird/Greater Sage Grouse Priority Habitat Management Area and Frenchman Breaks (415,875 acres)
- Greater Sage-Grouse Priority Habitat Management Area and Eastern Breaks and Badlands (997,338 acres)
- Little Rocky Mountains (27,688 acres)

**Moderate:**

- Fresno area (885 acres; includes the 125 acre OHV area plus additional BLM lands in the vicinity)
- Marias River area (19,032 acres)
- North Missouri Breaks (101,523 acres)

**Low:**

- Remaining BLM lands (875,133 acres)

## **Paleontological Resources**

The BLM would identify and prioritize high probability paleontological locations for inventories and information attained would guide management decisions. Paleontological assessments would be completed for all projects proposed on federal lands to determine the need for further paleontological inventories.

The BLM would develop a resource awareness program to enhance the public appreciation of paleontological resource values. This includes coordination with permitted universities and museums. Paleontological research and education opportunities would be pursued for high priority areas.

Lands within the planning area exhibiting the highest site density and/or high Potential Fossil Yield Classification (PFYC) would be used to establish priorities for paleontological inventory.

The collection of petrified wood and invertebrate fossils for personal use would be allowed as limited by the regulations (43 CFR 3620 and 8365) in areas not specifically closed.

## **Public Safety**

### **Abandoned Mine Lands**

The closure of dangerous inactive and abandoned mine sites would be designed to reduce the risks to human health and safety, restore the environment, and protect geological and cultural resources. Reclamation would be implemented at the highest risk sites first. Where deemed appropriate, the BLM would restore severely impacted soils and watersheds as

close as possible to pre-disturbed conditions that support productive plant communities and ensure properly functioning watersheds.

Restoration and reclamation activities and repositories would be monitored to determine effectiveness of reclamation practices.

### **Hazard Class Dams**

Construction and maintenance priorities for hazard class dams would be in conformance with applicable laws and regulations, and BLM policy. Condition assessments and Emergency Action Planning would be performed as required by the latest version of the 9177 (Dam Safety) manual section and associated handbooks. The results of the condition assessments would be reviewed to determine the need for reconstruction, maintenance or disposal.

### **Hazardous Materials**

The BLM would comply with all federal environmental and safety laws and regulations governing storage, handling, and use of hazardous materials and governing disposal of hazardous waste. The BLM would also comply with state hazardous materials laws and regulations as required.

Disposal of hazardous materials on public lands would generally not be permitted. When the use or storage of hazardous materials is authorized (i.e., in mining operations, pesticide application or other types of commercial activities) special stipulations would be applied to comply with appropriate laws, regulations, and policies. In the event of hazardous materials incidents on public land, standard operating procedures would be used to respond. Cleanups and reclamation would be conducted in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan and the NEPA or Removal Site Evaluation (RSE) / Engineering Evaluation Cost Analysis (EECA) decision.

The BLM would promote and support the appropriate use and recycling of hazardous materials in public facilities and on public land to prevent or minimize the generation and disposal of hazardous wastes.

Environmental site assessments would be conducted for land acquisitions, land disposals, and for rights-of-way if applicable. Land uses would be authorized and managed to reduce the occurrence and severity of hazardous materials incidences on public land.

The BLM would assess level of risk at hazard sites and conduct remediation at highest priority sites that are the greatest risks to the public and environment.

## **Recreation**

### **Recreation Opportunity Spectrum**

Recreation users would be limited to 14-day camping stays at developed campgrounds. No variances to the 14-day camping limit would be allowed. Personal property of recreational users cannot be left unattended in developed campgrounds for more than 24 hours.

Recreation users would also be limited to 16-day camping stays on undeveloped lands (dispersed camping) (75 FR 30850-30852), or as determined by any supplementary rules published in the Federal Register. This does not apply to locations that contain structures or capital improvements (such as boat launch sites, picnic areas, and interpretive centers) and that are used primarily by the public for recreational purposes such as developed campgrounds, designated recreation areas, and special recreation management areas. The BLM regulates the use and occupancy at such developed locations in accordance with 43 CFR 8365.2–3.

The BLM would establish and maintain information kiosks with brochures, interpretive and educational information, site maps and regulations, and important contacts. All developed recreation sites (including trailheads, picnic areas, etc.) are closed to target shooting per 43 CFR 8365.2-5(a).

Periodic accessibility, safety, and condition assessments would be conducted in accordance with Bureau policy at developed recreation sites and prioritized available funds to resolve deferred and corrective maintenance needs.

The “Leave No Trace” and “Tread Lightly” practices would be promoted to enhance the sustainability of resource-based activities.

The BLM would work cooperatively with other agencies (e.g., MFWP) to identify and sign BLM lands to provide more recreational opportunities in areas with limited public access and/or confusing ownership boundaries. Signs must be placed according to current boundary marking standards (BLM Manual 9130).

The BLM would modify the existing Recreation Opportunity Spectrum (ROS) classification to accommodate the other proposed resource allocations under the range of alternatives.

The BLM would issue Special Recreation Permits (SRPs) as appropriate for commercial, competitive, and special events subject to guidelines in BLM Handbook 2930, resource capabilities, social conflict concerns, professional qualifications, public safety, and public needs. New permits would not be authorized that directly conflict with permitted uses and existing permits would be given preference. Through plan implementation, changes in demand for permits and resulting impacts would be monitored and thresholds identified that could lead to limits in the number of permits to minimize impacts to the resources, public safety, and overall visitor satisfaction. All SRP applications and renewals would be reviewed on a case-by-case basis and site-specific analysis would be done for each proposed operating area.

Recreation sites and facilities would be maintained and managed to promote resource value protection, public safety and health, quality facilities, visitor experiences, management efficiency, and value-based returns. Expansion of existing sites and development of new sites would take into consideration public demand, resource constraints, and management capabilities through an environmental review process. Priority would be given to new sites that have partnership funding strategies and are consistent with established management guidelines.

### **Recreation Management Areas**

The majority of public lands within the planning area would be managed as lands not designated as Recreation Management Areas (LND) for dispersed recreational experiences associated with hunting, fishing, wildlife viewing, pleasure driving, camping and picnicking. The BLM would manage this area in a custodial manner to ensure quality of experience and enjoyment of natural and cultural resources.

The existing recreation facilities (fishing reservoirs and watchable wildlife areas) within the LND would be maintained in a custodial manner and enhanced only as needed to meet recreational demands that are associated with resource protection, and public health and safety requirements. New recreation facilities could be considered but should be a lower priority for implementation than those proposed for Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs) and should resolve specific conflicts of use.

The BLM would manage two SRMAs (Glasgow OHV and Little Rocky Mountains) and ten ERMAs (BR-12, Cottonwood Riparian Area, Faraasen Park, Fresno OHV, Marias River, Paulo Fishing Reservoir, South Phillips Recreation Complex, Sweet Grass Hills ACEC, Timber Creek Ridge, and Troika Fishing Reservoir). The remainder of the planning area would be managed as LND.

Due to its limited size (40 acres) and uniformity in recreational opportunities throughout, the Glasgow OHV Special Recreation Management Area would not be divided into management zones.

### **Recreation Management Zones**

The BLM would allocate three Recreation Management Zones within the Little Rocky Mountains Special Recreation Management Area.

#### ***Zortman Recreation Management Zone (1,108 acres)***

- Recreation Setting: Provides full service facility-based camping in a ponderosa pine rural setting near the small rural community of Zortman.

- **Primary Activities:** Overnight developed camping, day use picnicking, wildlife viewing, recreational gold panning, hiking, horseback riding, and OHV and ATV use.
- **Recreation Management Objective:** Maintain and enhance the facilities at the Camp Creek Campground, Horse Corral Campground, and Buffington Day Use Picnic Area as needed to meet recreational demands and comply with public health and safety requirements. Identify and develop new opportunities for facility-based recreation. For example, the Zortman Ranger Station could be fixed up and converted into a rental cabin. Specific areas within this zone could be set aside for recreational gold panning through coordination and/or partnership with the local community.

#### ***Landusky Recreation Management Zone (107 acres)***

- **Recreation Setting:** Provides small facility-based camping in a ponderosa pine rural setting near the very small rural community of Landusky.
- **Primary Activities:** Overnight developed camping, wildlife viewing, hiking, and OHV and ATV use.
- **Recreation Management Objective:** Maintain and enhance the facilities at the Montana Gulch Campground as needed to meet recreational demands and comply with public health and safety requirements.

#### ***Little Rockies Recreation Management Zone (26,473 acres)***

- **Recreation Setting:** Provides an excellent back country experience for dispersed camping, wildlife viewing, hiking, horseback riding, and OHV and ATV use opportunities in a ponderosa pine roaded natural setting.
- **Primary Activities:** Dispersed camping, hiking, horseback riding, hunting, fishing, OHV and ATV use.
- **Recreation Management Objective:** Provide for dispersed back country experiences for both nonmotorized and motorized recreational activities. Emphasize the “Leave No Trace” and “Tread Lightly” programs to aid in minimizing the conflicts of use between motorized and nonmotorized BLM land users.

## **Renewable Energy Resources**

Solar and wind energy exploration and development authorization would be subject to the same laws, regulations, and guidelines as other commercial rights-of-way. Terms and conditions for authorizations including site testing, monitoring and development would incorporate applicable BMPs, current professional practice, and recent scientific findings.

### **Biomass**

The BLM would explore opportunities to provide a reliable and sustainable supply of woody biomass that may be made available from BLM land in the planning area. Biomass can be used to produce bio-energy and/or bio-based products such as plastics, ethanol, and diesel. Biomass can also be used to produce the full range of wood products including lumber, composites, paper and pulp, furniture, housing components, and round wood.

### **Geothermal**

BLM lands in the planning area would be available for geothermal leasing, unless located within the Burnt Lodge or Bitter Creek WSAs, in priority sage-grouse habitat, or in instances where it is determined that issuing the lease would cause unnecessary or undue degradation to BLM lands or resources. No Known Geothermal Resource Areas (KGRAs) are located in the planning area. (A region identified by the U.S. Geological Survey as containing geothermal resources. New leasing regulations no longer use KGRAs as a basis for the leasing process.)

Geothermal projects would be designed and developed in accordance with the Geothermal Leasing in the Western United States Programmatic EIS. A site-specific environmental analysis would be prepared for any proposed exploration

or development of geothermal resources. The analysis would address the application of stipulations and develop any additional mitigation measures over and above the lease stipulations required.

### **Solar**

BLM land that is designated as an exclusion area (e.g., WSAs) would not be available for solar energy rights-of-way. As a result, these areas would be closed to commercial solar energy development. Opportunities for solar development would be provided consistent with the other goals, objectives, and requirements of this plan. Applications for solar energy projects would be processed and authorized as rights-of-way under Title V of FLPMA. Utility-scale concentrating solar power or photovoltaic electric generating facilities must comply with the BLM's planning, environmental, and right-of-way application requirements as established by BLM guidance (WO IM No. 2011-003) or additional Bureau guidance and/or policy.

### **Wind**

BLM land that is designated as an exclusion area (e.g., WSAs) would not be available for wind energy rights-of-way. As a result, these areas would be closed to commercial wind energy development. This includes wind energy site monitoring and testing.

The use of wind turbines at the Zortman/Landusky mine reclamation area to lower the cost of electricity needed to operate the pumps and water treatment plants was approved under the Final Engineering Evaluation/Cost Analysis (EE/CA) for Water Management at the Zortman and Landusky Mines, and is not discussed or analyzed further in this document.

Wind energy projects would be designed and developed in accordance with the Wind Energy Development on BLM-Administered Lands in the Western United States Final Programmatic EIS and BLM wind energy development policy (WO IM No. 2009-043) and subsequent policy and guidance issued by BLM; and U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines. Implementation of any proposed management action would ensure that potential adverse impacts to natural and cultural resources would be minimal to negligible through the use of BMPs. Areas available for wind energy development would include mitigation for surface-disturbing and disruptive activities. Areas with fluid minerals NSO, CSU, and Timing Limitation Stipulations will be treated as avoidance areas for wind energy. This mitigation may restrict wind energy development in some areas.

Prior to authorizing any wind energy projects, a site-specific environmental review would be conducted to determine project feasibility, and to address and mitigate impacts. This environmental review would include the appropriate level of public involvement.

The Greater Sage-Grouse Priority Habitat Management Areas would be exclusion areas for solar and wind energy rights-of-way. General Habitat Management Areas would be an avoidance area for solar and wind energy rights-of-way.

About 1% of the planning area (33,119 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs). Approximately 1,600 acres of open areas near Shelby, Montana would be designated Potential Wind Development Areas. The lands designated for potential wind development could be offered for competitive leasing at the discretion of the authorized officer. About 36% of the planning area (885,661 acres) would be avoidance areas. Avoidance areas may include mitigation for cultural resources, paleontological resources, visual resources, soils, riparian areas, and wildlife. These are also consistent with stipulations for surface-disturbing and disruptive activities. If possible, mitigation measures would be applied on a case-by-case basis during project level planning.

Exceptions to avoidance areas may be granted if an environmental review demonstrates that effects could be mitigated to an acceptable level.

About 62% of the planning area would be exclusion areas for wind energy rights-of-way (1,518,695 acres). In addition to the Greater Sage-Grouse Priority Habitat Management Areas, this includes the Bitter Creek and Burnt Lodge WSAs,

Little Rocky Mountains and Sweet Grass Hills TCPs, ACECs, large reservoirs and waterfowl complexes, some wildlife habitat, developed recreation sites, lands managed for their wilderness characteristics, and National Historic Trails.

## **Soil Resources**

The BLM would evaluate the effects of a proposed surface-disturbing activity to the soil resource using USDA Natural Resources Conservation Service (NRCS) Soil Survey data/interpretations and/or through an onsite investigation; and would apply mitigation measures/BMPs if necessary, relocate the activity to a more suitable soil type, or deny the authorization.

Authorized surface-disturbing activities would include plans for reclamation. Authorization could be denied in areas where erosion cannot be effectively controlled/mitigated and reclamation would likely be unsuccessful.

## **Solid Minerals**

### **Leasable**

The BLM would consider proposals for developing leasable minerals (coal, sulfur, and solid and semi-solid bituminous rock) on a case-by-case basis. Site-specific environmental review would be required to lease these minerals. No areas have been identified with economic reserves to support future leasing analysis.

For solid mineral leasing other than coal and oil shale, prospecting permits would be available for all land not closed to mineral leasing in conformance with 43 CFR 3500. Permits would be issued after appropriate environmental review to assess effects and develop mitigation measures. Terms and conditions would be applied to non-energy leasable projects to meet land health standards for uplands, riparian areas and wetlands, water quality, air quality, and native plant and animal species. Discovery of a valuable mineral deposit, within the terms of the prospecting permit, entitles the prospecting permit holder to a preference right lease for mine development and mining.

The BLM would protect sensitive areas by closing them to mineral leasing (1,571,333 acres). Sensitive areas include WSAs, rare and intact important archaeological sites, essential breeding and nesting areas for raptors, a critical bat hibernaculum, significant paleontological areas, and Priority Habitat Management Areas for Greater Sage-Grouse.

### **Locatable**

Administration of locatable minerals (gold, copper, lead, zinc, silver, bentonite and diamond/kimberlite) on BLM lands would continue as required by law and regulation.

The BLM would coordinate with the Montana DEQ during the review, approval, inspection and reclamation of mining operations. Requirements of all state and federal laws would be met in the management of mining operations.

Terms and conditions would be applied to mining activities (within the constraints of the mining law) to meet land health standards for uplands, riparian areas and wetlands, water quality, air resources, and native plant and animal species.

In areas withdrawn from mineral entry, Plans of Operations would not be approved unless the Department of the Interior has determined that the mining claims covered by the Plan of Operations are valid under the Surface Management Regulations at 43 CFR 3809.100.

The BLM would protect sensitive areas by continuing four mineral withdrawals (20,058 acres) and recommending three new withdrawals (951,766 acres). Sensitive areas include a critical bat hibernaculum, developed recreation sites, rare and intact important archaeological sites, and essential breeding habitat for mountain plovers.

The BLM would continue the withdrawal for Azure Cave to protect a critical bat hibernaculum and recommend a 20-year extension for the Sweet Grass Hills withdrawal. Management of the Sweet Grass Hills withdrawal area would primarily focus on preserving areas of traditional importance to Native Americans and aquifers in the area that provide potable water to local residents.

Through the withdrawal review process, the BLM would consider the need for a new withdrawal or right-of-way to promote successful reclamation for the Zortman/Landusky mine reclamation. The area for the withdrawal or right-of-way would be based on the need to maintain and protect the infrastructure associated with the reclamation activities, and would likely not exceed the boundary of the Zortman/Landusky Mine Reclamation ACEC.

The withdrawals for the Camp Creek and Montana Gulch campgrounds would be modified to include the entire recreation sites.

The BLM would recommend revoking the withdrawals for the Landusky Town Site, Landusky Recreation Site, and Zortman Town Site on a case-by-case basis for the potential sale or exchange of the BLM parcels within the withdrawal boundaries.

The following new withdrawals would be proposed to segregate the areas from locatable mineral entry:

- A withdrawal of 24,672 acres in south Valley County (Mountain Plover ACEC) to protect essential breeding habitat for mountain plovers.
- A withdrawal of 20 acres to protect the Zortman Cemetery.
- A withdrawal of 927,074 acres to protect the Sagebrush Focal Area.

Within the limits of the Mining Laws, the BLM would apply conditions of approval to Plans of Operations to prevent undue and unnecessary degradation to Greater Sage-Grouse habitat.

### **Salable (Mineral Material)**

The BLM would issue sales contracts for mineral materials (sand, gravel, stone, limestone, and clay) where disposal is deemed to be in the public interest, while providing for reclamation of mined lands and preventing unnecessary or undue impact to other resources. All lands not withdrawn or discretionally closed are available for mineral material disposal. Mineral material permits are considered on a case-by-case basis and issued at the discretion of the authorized officer.

Free use permits may be issued to government agencies or subdivisions and to nonprofit organizations. Materials obtained by a free use permit may not be bartered or sold.

Mineral material sale contracts are valued according to the BLM statewide general appraisal schedule or through individual site-specific appraisals.

Common use areas or community pits would be designated if the level of localized activity warrants. New mineral material sites would be evaluated on a case-by-case basis.

Mineral material sales would be processed on a case-by-case basis. Salable mineral sites would have an approved mining and reclamation plan and an environmental review prior to being opened. Where resource conflicts cannot be adequately mitigated, a permit would be denied. Operating stipulations to protect other resource values would be included in mineral material permits.

The collection of petrified wood and invertebrate fossils for personal use would be allowed as limited by the regulations (43 CFR 3620 and 8365) in areas not specifically closed.

The BLM would protect sensitive areas by closing them to mineral material sales (1,666,720 acres). Sensitive areas include WSAs; Azure Cave ACEC; a portion of the Little Rocky Mountains TCP; Sweet Grass Hills TCP and ACEC; Big Bend of the Milk River ACEC; Frenchman Breaks ACEC; Kevin Rim ACEC; Malta Geological ACEC; Mountain Plover ACEC; Woody Island ACEC; and Zortman Cemetery. The Priority Habitat Management Areas (1,432,667 acres) would be closed to commercial use permits, but open to free use permits (e.g., county gravel pits).

## Special Designations

### Areas of Critical Environmental Concern (ACECs)

#### *Existing ACECs*

#### **Azure Cave ACEC**

The BLM would retain Azure Cave as an ACEC (141 acres) to protect cave resources and potentially the northernmost bat hibernaculum in the United States. The cave would be managed to protect bats during crucial hibernation periods and allow specific use on a limited basis. Any cave access would need to consider appropriate time periods, white nose syndrome, and management activities to protect the bats.

The area would remain closed to oil and gas leasing and the BLM would continue the withdrawal from mineral entry and location.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

To protect the cave and critical bat hibernaculum the area would be closed to solid mineral leasing and mineral material sales.

#### **Big Bend of the Milk River ACEC**

The BLM would retain the Big Bend of the Milk River ACEC (1,972 acres) to protect the diverse cultural resources and historic sites representing bison hunting and prehistoric ceremonial use of the Northwestern Plains. Two National Register eligible sites are located within the Big Bend of the Milk River ACEC: Henry Smith and Beaucoup.

The Henry Smith site (1,000 acres) has been allocated for Public Use. The site would be inventoried for cultural resources, and mapping and/or collecting data would be completed as necessary.

The Beaucoup site (1,120 acres) has been allocated for Scientific Use. The site would be inventoried for cultural resources. All resources would be mapped, collected and excavated as necessary for relevant archaeological data.

The area would include an NSO stipulation for oil and gas leasing and the area would remain closed to solid mineral leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would not recommend a withdrawal from mineral entry and location. The area would be closed to solid mineral material sales.

#### **Bitter Creek ACEC**

The BLM would retain the Bitter Creek ACEC (60,701 acres) to protect the scenic diversity qualities found within the Bitter Creek watershed. If the Bitter Creek WSA is released by Congress, an ACEC management plan would be completed consistent with management direction. Until an ACEC management plan is completed the area would be managed consistent with BLM Manual 6330-Management of BLM Wilderness Study Areas as appropriate.

The area would remain closed to oil and gas leasing until an ACEC management plan is completed that would address leasing (60,717 acres).

The area would be an avoidance area for rights-of-way.

The area would be an exclusion area for wind energy rights-of-way.

The area would be open to solid mineral entry and location.

The area would be closed to solid mineral material sales.

### **Kevin Rim ACEC**

The BLM would retain the ACEC (4,557 acres) to protect the diverse archeological resources and significant raptor habitat.

The area includes an existing communication site. The ACEC would be an avoidance area for rights-of-way.

The area would include an NSO stipulation for oil and gas leasing.

New communication facilities should be located at the existing communication site, rather than a new location on Kevin Rim.

The area would be an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales.

The area would be open to mineral entry and location.

### **Mountain Plover ACEC**

The BLM would retain the ACEC to protect the mountain plover habitat (24,762 acres). The ACEC includes two habitat areas for the mountain plover. The primary habitat is the hardpan area on the valley bottoms (12,000 acres). The secondary habitat areas are on the gentle rises on either side of the valleys.

The area would be closed to oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would recommend a withdrawal from solid mineral entry and location. The area would be closed to solid mineral leasing and mineral material sales.

### **Prairie Dog Towns within the 7km Complex ACEC**

The BLM would not retain the Prairie Dog Towns within the 7km Complex ACEC. Management of prairie dog habitat would be consistent with the Wildlife section of this RMP.

### **Sweet Grass Hills ACEC**

The BLM would retain the ACEC (7,419 acres) to protect the diverse archeological resources. Management of the area would primarily focus on preserving areas of traditional spiritual importance to Native Americans, aquifers in the area that provide potable water to local residents.

The area would be closed to oil and gas leasing.

The BLM would allow for a full range of forest health treatments in the Sweet Grass Hills ACEC that may include the sale of wood products. The ACEC would not be open for incidental personal use wood products.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to motorized travel. Off-road travel for administration of a federal lease or permit would be granted, unless specifically prohibited.

The BLM would recommend a 20-year extension to the withdrawal from solid mineral entry and location to preserve areas of traditional spiritual importance to Native Americans, aquifers in the area that provide potable water to local residents.

Part of a Bureau of Reclamation withdrawal (532 acres) was recommended for termination in a withdrawal review effort (May 1993) since the withdrawal is no longer serving the purpose for which it was withdrawn. The remaining 40 acres was recommended for a 20-year term modification (May 1993) since it is serving the purpose for which it was withdrawn by providing for a current and future riprap quarry for Tiber Reservoir. However, under this alternative the 40 acres would be recommended for withdrawal termination since the continued use of the riprap quarry would be incompatible with the resource values being protected by the ACEC.

The area would be closed to solid mineral leasing and mineral material sales.

#### ***Potential ACECs***

##### **Frenchman Breaks ACEC**

The area would be designated an ACEC (42,020 acres) to maintain the unique landscape and scenic characteristics and protect the fragile watershed and wildlife species from fragmentation.

The area would include an NSO stipulation for oil and gas leasing to protect the fragile watershed and crucial winter range.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales.

##### **Grassland Bird/Greater Sage-Grouse Priority Areas ACEC**

The areas would not be designated an ACEC.

##### **Greater Sage-Grouse Protection Priority Area ACEC**

The area would not be designated an ACEC.

##### **Little Rocky Mountains ACEC**

The area would not be designated an ACEC.

##### **Malta Geological ACEC**

The area would be designated an ACEC (6,153 acres) to preserve the significant paleontological values for scientific inquiry. Other uses would be constrained by measures needed to protect paleontological resources for scientific study. Personal collection of common fossils would not be allowed (Public Law 111-11, Section 6304(e)).

The area would include a CSU stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way to preserve the shallow subsurface paleontological resources.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would not recommend a withdrawal from mineral entry and location.

##### **Woody Island ACEC**

The area would be designated an ACEC (32,869 acres) to maintain the unique landscape and scenic characteristics, and protect the fragile watershed and wildlife species from fragmentation.

The area would include an NSO stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would not recommend a withdrawal from mineral entry and location.

### **Zortman/Landusky Mine Reclamation ACEC**

The area would be designated an ACEC (2,682 acres) to promote successful reclamation, protect associated infrastructure, and ensure public safety on BLM lands affected by prior mining activities.

The area, which is within the higher elevations of the Little Rocky Mountains TCP, would be closed to oil and gas leasing to protect the prehistoric and historic archaeological resources in the area.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be designated closed to off-road vehicles to maintain the reclamation and ensure public safety until such time as the reclamation efforts are completed (this includes travel off road and on roads used for reclamation activities). Travel for administrative purposes or for the administration of a federal lease or permit would be granted, unless specifically prohibited in the lease or permit. Travel on roads would also be allowed for access to private land. When the reclamation efforts are completed the area would be limited to designated roads as determined through the travel plan for the Little Rocky Mountains.

The area is within the existing withdrawal (3,530 acres) in support of the reclamation activities at the Zortman and Landusky mines, which expires in 2015. Through the withdrawal review process, the BLM would consider the need for a new withdrawal or right-of-way to promote successful reclamation. The area for the withdrawal or right-of-way would be based on the need to maintain and protect the infrastructure associated with the reclamation activities, but would not exceed the boundary of the ACEC.

The area would be open to solid mineral material sales associated with the need for reclamation materials and maintenance of the existing roads (5 to 6 miles).

### **Back Country Byways**

No back country byways would be designated at this time. If a back country byway is identified in the future, the designation would be addressed through a land use plan amendment.

### **National Historic Trails**

A portion of the Marias River exploration trail of the Lewis and Clark National Historic Trail crosses BLM land. The BLM would manage this segment of the Lewis and Clark National Historic Trail in a manner that is consistent with the nature and purposes and provisions of Public Law 90-543 (the National Trails System Act) as amended by Public Law 95-265. The Lewis and Clark National Historic Trail Comprehensive Management Plan (NPS 1982) and Foundation Document (NPS 2012) outline management objectives, practices and responsibilities, and emphasize partnerships in trail administration. Scenic and cultural values would be protected on BLM-managed land along this historic trail.

A portion of the Nez Perce National Historic Trail crosses BLM land north of the Upper Missouri River Breaks National Monument and in the Bears Paw Mountains. The BLM would manage this segment of the Nez Perce National Historic Trail in a manner consistent with the purposes and provisions of Public Law 90-543, as amended by Public Law 99-445 and the comprehensive plan being prepared by the U.S. Forest Service.

National Historic Trails and associated Management Corridors would be classified as Category 1 (retention) lands.

The BLM would reclaim disturbances to the trails and associated settings, such as unauthorized routes and other legacy impacts as opportunities arise.

The BLM would implement the Interagency National Historic Trail Plans for the Lewis and Clark and Nez Perce National Historic Trails for BLM-managed lands within identified Trail Management Corridors and participate in the interagency planning update efforts as needed.

The BLM would support partnerships and cooperative agreements with other agencies, local and state authorities, and non-governmental organizations to implement stewardship and educational goals for the National Historic Trails and support the Montana site stewardship program for monitoring and evaluation of significant trail resources.

The BLM would support the development and management of National Trail Auto Tours in partnership with the administrating agency and other interested parties.

The BLM would work in partnership to provide high-quality heritage education, interpretation, and tourism opportunities in reference to National Historic Trails located within the HiLine planning area.

The BLM would identify and acquire lands or easements within the trail corridors from willing sellers to protect resources or provide public access.

### **National Trail Management Corridors**

The BLM would designate a National Trail Management Corridor for both the Lewis and Clark National Historic Trail and the Nez Perce (Nee-Me-Poo) National Historic Trail based on the maps and/or GIS layer supplied to and as identified by the administrating agencies.

The Lewis and Clark National Historic Trail identified corridor would reflect a 1/2 mile wide management zone (1/4 mile either side of the centerline) based on the line as generally depicted in the Vicinity Map, Proposed Lewis and Clark Trail. This corridor may be modified at a later date following the publication of the Lewis and Clark National Historic Trail Comprehensive Plan by the National Park Service or when further research and/or inventory in relation to the trail indicate a change is needed. Supplemental NEPA analysis would be conducted at that time.

The Nez Perce (Nee-Me-Poo) National Historic Trail identified corridor would reflect a 1/2 mile wide management zone (1/4 mile either side of the centerline) based on the line as generally depicted in the Nez Perce (Nee-Me-Poo) Trail Study Report. This corridor may be modified at a later date following the publication of the Nez Perce National Historic Trail Comprehensive Plan by the U.S. Forest Service or when further research in relation and/or inventory to the trail indicates a change is needed. Supplemental NEPA analysis would be conducted at that time.

### **Lewis and Clark and Nez Perce (Nee-Me-Poo) National Historic Trails**

The area would include an NSO stipulation for oil and gas leasing within the established National Trail Management Corridors (1/4 mile either side of the centerline).

The area would be an avoidance area for rights-of-way, and an exclusion area for wind energy rights-of-way within 1 mile of the established trail centerline.

The trail would be considered a VRM Class II.

### **Wild and Scenic Rivers**

The BLM identified and evaluated various river segments to determine their potential inclusion in the National Wild and Scenic Rivers System per Section 5 (d) of the Wild and Scenic Rivers Act. The river study process is a three-step assessment of eligibility, tentative classification of rivers found to be eligible, and a determination of suitability. The BLM reviewed rivers/streams within the planning area and found a 1/2 mile segment of the Marias River at the confluence of the Missouri River to be eligible.

The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as nonsuitable due to lack of BLM land ownership, the BLM land that is adjacent to the Marias River is included in the Upper Missouri River Breaks National Monument, and management of the area already provides protection for the values along this segment of the Marias River.

## Wilderness Study Areas

The Bitter Creek WSA and Burnt Lodge WSA would be managed according to the BLM Manual 6330-Management of BLM Wilderness Study Areas until such time as Congress acts upon the recommendations. Only Congress can designate or release these lands.

The BLM would prepare a wilderness management plan for any areas designated as wilderness by Congress. The WSAs not designated as wilderness by Congress would subsequently be managed in accordance with guidance for adjacent BLM land unless otherwise specified in this RMP. If released by Congress, the Burnt Lodge WSA would be managed consistent with surrounding BLM land. If released by Congress, the Bitter Creek WSA would be managed as an ACEC and a management plan would be developed to provide semi-primitive, motorized recreation opportunities.

BLM Manual 6330-Management of BLM Wilderness Study Areas describes the policies under which the BLM would manage the two WSAs under wilderness review until Congress either designates these lands as wilderness or releases them for other purposes. Section 603(c) of FLPMA tells the BLM how to manage lands under wilderness review, in these words: "During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness..."

This language is referred to as the "nonimpairment" mandate. The BLM would review all proposals for uses and/or facilities within the WSAs to determine whether the proposal meets the nonimpairment standard. Uses and/or facilities found to be nonimpairing may be permitted on lands under wilderness review. Uses and/or facilities found to be impairing would be denied. The following criteria are referred to as the nonimpairment criteria.

**Nonimpairment Criteria:** The use, facility, or activity must be temporary. This means a temporary use that does not create surface disturbance or involve permanent placement of facilities may be allowed if such use can easily and immediately be terminated upon wilderness designation. "Temporary" means the use or facility may continue until the date of wilderness designation, at which time the use must cease and/or the facility must be removed. In the WSAs, "surface disturbance" is any new disruption of the soil or vegetation that would necessitate reclamation.

Decisions to allow or deny proposed actions based on the nonimpairment criteria would be included in appropriate decision documents.

When the use, activity, or facility is terminated, the wilderness values must not have been degraded so far as to significantly constrain the Congress's prerogative regarding suitability of the area for preservation as wilderness.

The only permitted exceptions to the above rules are:

- emergencies such as suppression activities associated with wildfire or search and rescue operations;
- reclamation activities designed to minimize impacts to wilderness values created by violations and emergencies;
- uses and facilities that are considered grandfathered or valid existing rights under FLPMA;
- ensure public safety as remediation for human-caused hazards in the WSA;
- protect or enhance wilderness characteristics or values; and
- other legal requirements.

Any of these activities should be carried out in the least impairing manner practicable.

Some lands under wilderness review may contain minor facilities that were found in the wilderness inventory process to be substantially unnoticeable. For example, these may include primitive vehicle routes ("ways") and livestock developments. BLM Manual 6330 does not require such facilities to be removed or discontinued. They may be used and maintained as before, as long as this does not cause new impacts that would impair the area's wilderness suitability.

The HiLine District would follow the guidance provided in BLM Manual 6330 for management actions within the WSAs including the following:

- WSAs would be managed as VRM Class I.

- Fire activities and projects in WSAs would adhere to standard agency fire management policies and techniques found in other BLM documents, such as the Guidance for Implementation of Federal Wildland Fire Management Policy. Minimum Impact Suppression Tactics would be used for all suppression efforts. A resource advisor would be assigned to all fires that occur within a WSA.
- Active restoration activities would be conducted to remove unnatural features and rehabilitate unauthorized human disturbances. Unauthorized range facilities would be removed, consistent with range regulations.
- Closed routes would be rehabilitated or converted into non-mechanized trails.
- Public access to WSAs would be provided through public access easements across private lands/roads.
- Lands within WSA boundaries would be acquired from willing sellers. Existing impacts on acquired lands would be rehabilitated.
- Competitive or commercial SRPs would not be authorized within WSAs, with the exception of outfitter and guide uses.

## **Vegetation - Rangeland**

The BLM would ensure consistency with achieving or maintaining Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota.

Any increase in vegetation allocation would be applied to watershed protection until soils are stabilized to a satisfactory condition as determined by an interdisciplinary team prior to increasing livestock or wildlife allocations.

The BLM would consult with MFWP and seek concurrence regarding the anticipated benefits and/or impacts of any vegetation treatments that may impact wildlife habitat including priority sage-grouse habitat.

Site-specific sage-grouse habitat and management objectives have been developed for BLM land within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA. These objectives would be incorporated into the respective allotment management plans or livestock grazing permits as appropriate.

Conifers encroaching into sagebrush habitats would be removed. Treatments would be prioritized closest to occupied sage-grouse habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2. Use of site-specific analysis and principles like those included in the FIAT report and other ongoing modeling efforts to address conifer encroachment would help refine the location for specific priority areas to be treated.

Rest periods from livestock grazing of less than two growing seasons in vegetation treatment areas may be desirable in some circumstances, and would be determined through site-specific interdisciplinary planning, monitoring, and environmental review. For example, it may be desirable to use grazing to control weedy or invasive species immediately following a vegetation treatment.

Selling of grass seed, hay, or other vegetative products may be authorized. Hay or seed cutting may be used as a land treatment to improve production of crested wheatgrass provided it is not in conflict with wildlife or wildlife habitat values.

Range improvements would be constructed to manage use of vegetation to support multiple use resource management.

Water developments would be installed and/or maintained to facilitate control of livestock use of vegetation, support other uses and protect resource values. In order to minimize surface disturbance, have reliable water of better quality and not alter normal surface flow of water, alternative water developments would be emphasized before constructing new pits and reservoirs. The BLM would manage water developments within Greater Sage-Grouse habitat to reduce the spread of West Nile virus.

The BLM would use land treatments to achieve and maintain fire regimes, watershed, grazing management, and wildlife objectives. Within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA, treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed as well as treatments that benefit other resources and do not adversely affect sage-grouse or their habitat.

Rangeland health monitoring and assessments would be conducted within current staffing capabilities. The allotments within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA would be high priority for reassessment of land health standards and processing grazing permits. Rangeland health monitoring plans would be developed and implemented at the field office level.

Increased production resulting from land treatments would be allocated toward accomplishing multiple use objectives. Additional forage resulting from land treatments could be temporarily allocated 75% to watershed and wildlife, and 25% to livestock. Conversely, where there is substantial contribution (at least 50% of the total cost as direct or in-kind contribution) by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be temporarily allocated to livestock.

Existing crested wheatgrass seedings would be managed where feasible as spring use pastures to defer native rangeland grazing. Crested wheatgrass seedings would be maintained for maximum livestock forage production with up to 70% of the production allocated to livestock when soils are stabilized to a satisfactory condition. Mechanical treatments and fertilization are management practices which renovate old crested wheatgrass stands to benefit associated native rangeland. Additional crested wheatgrass seedings may be used to consolidate existing scattered stands of crested wheatgrass into manageable units. Where native restoration of old crested wheatgrass seedings is considered, farming and herbicide use could be authorized for up to three years in order to help destroy the old crested wheatgrass seed bank and improve the success of the native seeding.

The initiating party would be required to reclaim surface disturbances greater than one-tenth acre if necessary to protect other resources. Range improvement pits and reservoirs would be excluded until abandonment.

All surface disturbances would be reseeded/revegetated with native plant species common to the site's natural plant community. Site-specific environmental analysis may warrant the use, on a case-by-case basis, of introduced species where difficult site stabilization or wildlife concerns prevail.

Native species needed for reclamation and restoration activities, including the restoration of sage-grouse habitats in the planning area, would be identified and prioritized. Seed that is not available commercially should be collected following the procedures outline in the Seeds of Success Protocol from local sources. Locally collected seed should be used to create sources of native plant materials with willing farmers or through work with NRCS Plant Materials Programs or through both. Cleaning and storage of seed until sent for increase must be addressed so that viability is maintained.

The best available vegetation treatment would be considered for managing cheatgrass and annual bromes, including but not limited to early spring grazing, mid-summer prescribed fire, and herbicide use.

## **Vegetation – Riparian and Wetland**

An implementation plan would be developed that contains an assessment and monitoring plan for riparian and wetland areas. User guides to assessing proper functioning condition and the supporting science for lotic areas (TR 1737-15) and lentic areas (TR 1737-16) would be adhered to by the BLM's interdisciplinary identification and assessment teams.

The BLM would enhance or restore riparian composition and structure beyond PFC in riparian areas where and when appropriate for other resource values. This may include, but is not limited to, establishing riparian pastures, stream corridor/ shoreline fencing, specialized grazing methods, winter grazing use, a different species of livestock, and rehabilitation protective measures.

The allowance for improvements of riparian/wetland areas has the potential to either benefit or degrade the resource, and improving the functionality of one aspect (i.e., hydro-period) could convert the riparian/wetland type. The BLM would conserve riparian/wetland habitat by intensifying cooperative efforts among federal, state and private interests and would minimize the destruction, loss or degradation of wetlands.

Wetlands would be protected in accordance with the provisions of Executive Order (EO) No. 11990, Protection of Wetlands. Under the provisions of this EO, the BLM must minimize the destruction, loss or degradation of wetlands when acquiring, managing and disposing of federal lands and facilities.

Riparian protection would be provided by the Montana Streamside Management Zone Law (77-5-301 through 77-5-307 MCA). Streamside Management Zones (SMZs) provide regulation for the protection of water quality.

Ephemeral drainages and some mapped intermittent streams would not be covered by the SMZs under the definitions in the state regulations. These areas, however, would be covered by management stipulations commonly known as BMPs.

Prescribed fire could be used as a management agent to support healthy functioning riparian conditions.

Riparian areas with unique values (i.e.; where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that require surface disturbance and/or permanent surface occupancy).

Grazing techniques and practices would be implemented to reduce hot season (summer) grazing on riparian and meadow complexes within the Greater Sage-Grouse Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Area. Alternate water facilities would be installed to relieve grazing impacts on riparian areas inside of priority sage-grouse habitat.

Saline seeps that occur as a result of surface-disturbing activities would be prioritized and reclaimed. Surface-disturbing activities with the potential for producing seep areas would be designed with mitigation measures to minimize development of saline seeps.

Riparian exclosures would be maintained and monitored to compare differences between areas grazed and ungrazed by livestock.

No pits would be placed in natural wetlands and in some cases pits may be filled in to improve wildlife habitat in natural wetlands. Wetlands that have been drained for water consolidation may be restored by plugging drainage ditches, and alternative water developments may be developed in these areas.

## **Vegetation – Special Status Plants**

The BLM would manage for the conservation of BLM special status plants and their associated habitats and to ensure that actions authorized, funded, or carried out do not contribute to the need to list any species as threatened or endangered. Site-specific prescriptions may include avoidance of special status plant habitat for ROWs, seasonal timing restrictions for grazing (e.g., limited to no grazing during flowering to seed set for a particular species), no salt or water placement within 1/4 mile of a known special status plant species population, seed collection or transplanting of special status plant species for mitigation.

The BLM would inventory lands to determine which BLM special status plant species occur on public lands, the condition of the plant populations and their habitats, and how discretionary BLM actions affect those plant species and their habitats.

The BLM would cooperatively participate in recovery plans, management plans and conservation strategies for special status species plants and would work with federal, tribal, and state agencies as well as private landowners to improve habitat for special status plants.

Through activity plans for other resources (e.g., watershed plans, fire management plans, allotment management plans, etc.) the BLM would design site-specific management prescriptions and projects to benefit individual species habitats and communities. Special status plants would be monitored to assess their condition and trend.

## Visual Resources

Visual resource design techniques and BMPs would be used to minimize short and long-term visual impacts. Contrast ratings would be completed for all proposed projects in Class I and II areas, and for proposed projects in Class III and IV areas that are high-impact projects or located in highly sensitive areas.

The visual resource contrast rating system would be used during project level planning to determine whether or not proposed activities would meet VRM objectives.

In VRM Class I, II, III and IV areas the BLM may prohibit surface-disturbing activities if such activities are not designed to meet the intent of the VRM Class objectives.

The Burnt Lodge and Bitter Creek WSAs would be managed as VRM Class I areas (74,506 acres). The following areas would be managed as VRM Class II (841,087 acres):

- an area south of the Dry Fork Road in Phillips County and the area south of the Willow Creek Road in Valley County and north of the Charles M. Russell National Wildlife Refuge;
- areas just north of the Upper Missouri River Breaks National Monument;
- Nez Perce and Lewis and Clark National Historic Trail corridors;
- Bitter Creek area;
- Frenchman area including the Frenchman Breaks ACEC;
- Kevin Rim area;
- Marias River area;
- Sweet Grass Hills area;
- Woody Island area; and
- areas managed for wilderness characteristics.

The remaining BLM lands would be managed as VRM Class III (521,868 acres) and VRM Class IV (1,000,013 acres).

In VRM Class II areas the BLM would reduce the visual contrast on BLM land in the existing landscape by utilizing proper site selection, reducing soil and vegetative disturbance, choice of color, and over time, returning the disturbed areas to a seamless, natural landscape.

## Water Resources

Surface and ground water quality would be maintained to state and federal water quality standards, including Standard for Rangeland Health #3 which requires that water quality meets Montana state standards. BMPs would be used to prevent nonpoint source water pollution, and mitigation measures would be applied on a case-by-case basis. Permits pertaining to projects affecting water quality, wetlands, or streams would be obtained, and outside applicants would be required to provide copies of permits (e.g., 310, 404) prior to BLM authorization.

Projects would be reviewed on a case-by-case basis to minimize impacts to water quality. All proposed reservoirs would be designed with a minimum 15-year life expectancy, and the BLM would evaluate other types of improvements to determine the need for alternate site water facilities (e.g., wells, springs). The BLM would continue to comply with Montana water laws, obtain water rights for all projects, and participate in the water adjudication process.

Through an existing memorandum of understanding with the Montana DEQ, the BLM would participate in the development, implementation, and monitoring of water quality restoration plans (WQRPs) and total maximum daily load (TMDL) in watershed planning areas in which the BLM is a significant land manager or water user. The BLM would continue to produce, and provide to the DEQ, biennial reports that describe the successes achieved in protecting and improving water quality in Montana.

The BLM would use reasonable land, soil, and water conservation practices to prevent harm to public health, recreation, safety, welfare, livestock, birds, fish, or other wildlife prior to the adoption of WQRPs and TMDLs. Human health would be protected by minimizing the potential contamination of public water systems. Source water is untreated water

from streams, rivers, lakes, or aquifers used to supply public water systems. The BLM would ensure that stipulations are in place to protect the State-designated Source Water Protection Areas that protect public water systems from potential contamination.

The BLM would manage federal lands with reasonable land, soil, and water conservation practices in order to protect waterbodies that currently meet state water quality standards and improve water quality where beneficial uses are not fully supported. The BLM manages nonpoint source pollution by controlling the cause and source of pollutants through the use of pollution control measures such as BMPs and soil and water conservation practices. These measures are discussed in detail in the Montana Nonpoint Source Management Plan. The BLM is responsible for monitoring progress and success once pollution control measures are implemented.

Disposal of produced water from any oil and gas fields would be in accordance with Onshore Order No. 7 and EPA guidelines. Produced water cannot be discharged to live surface water in Montana without treatment in conjunction with a Montana Pollution Discharge Elimination System (MPDES) permit. Effluent limits set by the DEQ for direct discharge ensure no degradation would occur. Discharge to impoundments within an ephemeral drainage would also require an MPDES permit and a non-degradation waiver for groundwater.

Watershed control structures would be maintained on a case-by-case basis to meet Standards for Rangeland Health or public safety concerns.

New reservoirs would be considered on a site-specific basis through activity planning and would consider livestock grazing practices, important wildlife habitat, alternate water sources, and the opportunity to replace or repair existing reservoirs.

Water supply sources (e.g., wells, springs, reservoirs, and stream and lake access) for BLM-authorized actions (e.g., grazing, wildlife, recreation, etc.) would comply with Montana water laws.

The BLM would avoid the discharge of produced water from point sources to BLM land, including stream channels and uplands, as a means of disposal. Any allowed discharge would be in compliance with DEQ requirements.

## **Wilderness Characteristics**

The BLM would manage 3 areas (Areas 49B, 52L and 53) in the Eastern Breaks and Badlands (16,393 acres) to protect wilderness characteristics as a priority over other multiple uses.

Management proposed under the Preferred Alternative for these three areas includes:

- *Fluid Minerals*: NSO with no Waivers, Exceptions, or Modifications (WEMs).
- *Land Ownership Adjustment*: Category 2 -Retention/Limited Disposal (exchange only – no sale).
- *Rights-of-Way*: Avoidance Areas.
- *OHV Area Designations*: Limited.
- *Renewable Energy – Wind*: Exclusion.
- *Recreation Opportunity Spectrum*: Semi-Primitive Motorized.
- *Travel and Transportation Management*: Closed to development of new roads, primitive roads, and trails.
- *Visual Resource Management*: VRM Class II.

Any changes to livestock grazing would be consistent with achieving or maintaining the Standards for Rangeland Health. All agreements and provisions for maintenance and upkeep of existing range improvements would continue to remain in effect including access to and maintenance of range improvements. New range improvements and land treatments could be allowed provided they meet with the objective of enhancing or restoring those wilderness characteristics being managed for and meet the intent of the visual quality objectives of the VRM class.

The areas would be limited for OHV use and a high priority for travel management planning. In these areas travel would be limited to existing roads, primitive roads and trails until subsequent travel management plans designate a motorized and nonmotorized transportation network after completion of this RMP. A right-of-way may be allowed if no reasonable

alternative is found; however, special mitigation measures would be required to minimize impacts to wilderness characteristics.

Of the remaining lands with wilderness characteristics, 290,865 acres would be managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics. Most of these areas fall within PHMAs, Sagebrush Focal Areas, Frenchman Breaks ACEC, and Sweet Grass Hills ACEC. Management proposed for these areas is complementary to maintaining wilderness characteristics in these areas. Management proposed under this alternative for these areas includes:

- *Fluid Minerals*: Closed within the Sweet Grass Hills TCP; NSO with no WEMs within the Frenchman Breaks ACEC and Sagebrush Focal Areas; and NSO with limited exceptions and no waivers or modifications within the Greater Sage-Grouse PHMAs.
- *Land Ownership Adjustment*: Category 1 – Retention within the Sweet Grass Hills ACEC; Category 2 – Retention/Limited Disposal within all other areas.
- *Rights-of-Way*: Avoidance Areas.
- *OHV Area Designations*: Closed within the Sweet Grass Hills ACEC; Limited within all other geographic areas.
- *Renewable Energy – Wind*: Exclusion.
- *Recreation Opportunity Spectrum*: Semi-Primitive Nonmotorized within the Sweet Grass Hills ACEC; Semi-Primitive Motorized within the remainder of geographic area.
- *Visual Resource Management*: VRM Class I within the Sweet Grass Hills ACEC; VRM Class II within the remainder of the geographic area.

The other 92,190 acres would be managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics. In coordination with the interdisciplinary team and the BLM HiLine District Manager and Field Managers, it was determined that these areas either cannot be effectively managed to protect wilderness characteristics or the management or use of other resources takes precedence over wilderness characteristics. However, BLM-authorized activities associated with all resources and all resource use programs in these areas would be subject to mitigation and minimization guidelines and Best Management Practices.

## Wildlife

### General Wildlife

The BLM would provide ecological conditions that support wildlife species over the long term and promote maintenance and recovery of federally listed species and BLM sensitive species.

New fences would follow BLM specifications to allow for wildlife passage, except for fences built specifically to keep wildlife out of an area. Fences would also be placed and marked, or modified, to reduce wildlife collisions or entanglements.

Powerlines and substations constructed on BLM land would comply with the most current raptor protection standards (currently Reducing Avian Collisions with Power Lines: The State of the Art in 2012). Existing powerlines that have been identified as having problems with collision or electrocution of wildlife and do not meet APLIC standards would be corrected and modified to prevent future wildlife collision threats or electrocution. Powerlines that are in good working order would be maintained and upgraded as deemed necessary.

Wildlife mortality at water tanks on BLM land would be minimized, primarily through the use of functional wildlife escape ramps. All new tanks would have effective escape ramps built in and existing tanks would have effective escape ramps installed.

Mitigation for migratory birds would be considered during activity level planning because the number of species, variety of habitats, and variation in seasonal movements limit the ability to provide effective mitigation for all species at the resource management planning level.

Management activities would consider current adopted strategies including Montana's Comprehensive Fish and Wildlife Conservation Strategy and currently accepted science. The BLM would continue to implement, review, and update as necessary the Prairie Pothole Waterfowl and Fisheries Habitat Management Plan (HMP) of North Central Montana, Whitewater Lake Waterfowl Habitat Development Project HMP, and Milk River Hills Pronghorn Winter Range HMP.

Implementation and consistent and effective monitoring of outcomes for habitat and species would provide the impetus toward the desired conditions. Monitoring would provide necessary data to evaluate RMP management decisions and would help identify needs for changes in management practices. Monitoring to track changing conditions in key areas and for specific species is an important step in accomplishing objectives and achieving desired conditions.

Coordination and partnerships with state and federal agencies, tribal governments, commercial interests, interested organizations and individuals would serve as an important way to achieve desired conditions throughout the planning area, particularly for wildlife species and populations that span administrative and legal boundaries.

The BLM would work with local organizations, schools and other agencies to provide educational programs, information brochures, interpretive sites, etc. to promote public awareness, appreciation, and understanding of wildlife conservation, management, and ecology.

Fences identified as potential barriers to wildlife movement or representing significant hazards for wildlife on BLM land would be inventoried. Fences would be prioritized for replacement or modification to maintain resource values including wildlife movements.

***Bighorn Sheep:*** No new grazing permits authorizing sheep or goat allotments would be allowed within the MFWP Bighorn Sheep Management Zone. Sheep and goat allotments in areas with risk of contact with bighorn sheep and domestic sheep and/or goats in the planning area would be reviewed and managed, or reclassified if necessary, to achieve effective separation (both temporal and/or spatial) between domestic sheep and/or goats and bighorn sheep. Domestic sheep/goats would not be allowed within bighorn sheep range unless mechanisms are in place to achieve effective separation from wild sheep.

***Migratory Birds:*** The BLM would follow the Prairie Pothole Joint Venture Implementation Plan (2005) to analyze site-specific proposed actions and determine whether BLM lands are meeting rangeland health standards. The BLM would integrate the goals of the PPJV into programmatic and site-specific management decisions through the following management actions:

- Emphasize maintenance and restoration of habitats that sustain sensitive species.
- Strive to enhance or restore migratory bird habitat composition and structure in riparian habitats, where and when appropriate.

***Waterfowl:*** Upland and emergent vegetation in pastures surrounding reservoirs established or rebuilt for waterfowl values would be managed to provide adequate nesting and brood rearing cover for waterfowl.

### **Special Status Species**

BLM Manual 6840 provides policy and guidance for the conservation of BLM special status species and the ecosystems upon which they depend on BLM-administered lands.

The BLM would initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA.

The BLM would ensure habitat is provided for special status species. Proposed actions would not jeopardize the continued existence of a threatened or endangered species, or cause its habitat to be adversely modified or destroyed.

The BLM would continue cooperative participation in recovery plans, management plans and conservation strategies for special status species.

Fragmentation of large intact blocks of important wildlife habitat would be minimized, particularly in Greater Sage-Grouse and grassland bird priority areas.

The BLM would coordinate with MFWP or other interested parties to highlight special status species information and BLM management of habitats for special status species. The BLM would also provide outreach materials for the general public.

### **Mitigation**

Mitigation measures for all resources are included in Appendices C and M. The BLM may add additional mitigation measures as deemed necessary by further environmental analysis and as developed through consultation with other federal, state, and local regulatory and resource agencies.

In all sage-grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions.

### **Application of Lek Buffers**

In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM would apply the lek buffer-distances identified in the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review ([Open File Report 2014-1239](#)) in accordance with Appendix M.

### **Development in Highly Important Landscapes**

The BLM will designate Sagebrush Focal Areas (927,074 acres). All BLM-administered lands within the SFA boundary would be:

- 1) Recommended for withdrawal from the General Mining Act of 1872, subject to valid existing rights.
- 2) Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing.
- 3) Prioritized for management and conservation actions in these areas, including, but not limited to review of livestock grazing permits/leases (see the Livestock Grazing section for additional actions).

### **Disturbance**

The Montana/Dakotas BLM will use a 3% disturbance cap at the Biologically Significant Unit (BSU) and project scale, until the State strategy, similar to Wyoming's Core Strategy of 5% for all lands and all disturbances, is fully implemented. The density calculation (an average of 1 facility per 640 acres) applies to energy and mining facilities. The disturbance cap will not be applied to foreclose development of locatable minerals on unpatented claims located under the General Mining Act of 1872; the disturbance from locatable mining will be accounted for in determining the percent disturbance and whether the cap has been exceeded.

If the 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) or if anthropogenic disturbance and habitat loss associated with conversion to agricultural tillage or fire exceed 5% within a project analysis area, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the General Mining Act of 1872, valid existing rights, etc.) will be permitted by the BLM within a project analysis area until the disturbance has been reduced to less than the cap. If the BLM determines that the State of Montana has adopted a Greater Sage-Grouse Habitat Conservation Program that contains comparable components to those found in the State of Wyoming's Core Area Strategy including an all lands approach for calculating anthropogenic disturbances, a clear methodology for measuring the density of operations, and a fully operational density disturbance calculation tool

(DDCT), the 3% disturbance cap will be converted to a 5% cap for all sources of habitat alteration within a project analysis area.

Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in the Priority Habitat Management Area within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is co-located into an existing disturbed area.

**Black-tailed Prairie Dog:** The BLM would adopt the MFWP Region 6 Prairie Dog Abundance and Distribution Objectives Plan and would contribute to achieving prairie dog objectives on BLM land as outlined in the plan.

The BLM would manage firearm discharge on BLM land before and after any future ferret reintroduction. Firearm discharge may temporarily be prohibited on prairie dog towns where black-footed ferret reintroduction is occurring. However, recreational shooting would be managed on these towns and towns subsequently occupied by the ferret, unless impacts from shooting are shown to be detrimental.

**Greater Sage-Grouse:** Quantifiable vegetation objectives have been identified for sage-grouse breeding (leks, pre-laying, nesting and early brood-rearing) habitat on public land. The desired conditions for sage-grouse habitat presented in Table 2.28 (located in Chapter 2) are based on recommendations in current literature and have been modified to more accurately reflect local conditions based on the vegetative potentials identified for ecological sites in Major Land Resource Areas 52C and 58A. Table 2.28, Desired Conditions for Sage-Grouse Habitat, is to be used as a minimum to meet the applicable Land Health Standard in sage-grouse habitats.

The assessment and evaluation of these objectives will follow the steps described in the Sage-Grouse Habitat Assessment Framework.

These habitat objectives in Table 2.28 summarize the characteristics that research has found represent the seasonal habitat needs for Greater Sage-Grouse. The specific seasonal components identified in the Table were adjusted based on local science and monitoring data to define the range of characteristics used in this subregion. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the landscape that indicate the seasonal habitats used by sage-grouse. These habitat indicators are consistent with the rangeland health indicators used by the BLM.

The habitat objectives will be part of the sage-grouse habitat assessment to be used during land health evaluations (see Monitoring Framework, Appendix M.2). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.

All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use.

**Grassland Bird/Greater Sage-Grouse Priority Habitat Management Area:** To minimize habitat fragmentation, the area with BLM surface ownership would be managed to retain intact blocks of native vegetation. This area includes the northern portion of the sage-grouse core area as identified by MFWP and includes the priority area of conservation (PAC) as identified by the USFWS. This area would include 426,355 acres of BLM surface (Map 2.18). The following management actions would apply to this area:

- The area would include a no surface occupancy (NSO) stipulation for oil and gas leasing, unless there is a more restrictive stipulation in place to protect other resource values (e.g., no lease in the Bitter Creek WSA). No waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The authorized officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action:

- would not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat; or,
  - is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to Greater Sage-Grouse.
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2).

Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.

- The area would be an avoidance area for the issuance of rights-of-way except within designated corridors. Rights-of-way and similar facilities would be located adjacent to other facilities in a corridor where practical. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The area would remain available for livestock grazing. Site-specific grassland bird and/or Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate. Third order (fine-scale) and fourth order (site-scale) habitat indicators and characteristics for sage-grouse habitat seasonal use areas as described in the Sage-Grouse Habitat Assessment Framework would be used to quantify habitat objectives.
- The NEPA analyses for renewals and modifications of livestock grazing permits/leases that include lands within the Priority Habitat Management Areas will include specific management thresholds based on the Desired Conditions for Greater Sage-Grouse Habitat (habitat objectives) presented in Table 2.27 and Land Health Standards (43 CFR 4180.2) and one or more defined responses that will allow the authorized officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis.
- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- If prescribed fire is to be used for vegetation treatments, the burn plan will clearly indicate how COT objectives will be addressed and met by its use, and why alternative techniques were not selected.
- A Fire Risk Assessment would be completed for implementation of prescribed fire in relation to sage-grouse goals and objectives.
- The area would be an exclusion area for solar and wind energy rights-of-way.
- Priority Habitat Management Areas are closed to new mineral material sales. However, these areas remain “open” to free use permits and the expansion of existing active pits, only if the following criteria are met:
  - the activity is within the Biologically Significant Unit (BSU) and project area disturbance cap;
  - the activity is subject to the provisions set forth in the mitigation framework (Appendix M.4);
  - all applicable required design features are applied (Appendix M.6).

- The area would be closed to solid leasable minerals, including non-energy leasable minerals.
- New road construction would be limited to realignments of existing roads, if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for public safety. New road construction would include appropriate BMPs and mitigation (Appendices C and M).
- Existing roads, or realignments, would be used to access valid existing rights. If valid existing rights cannot be accessed via existing roads, then any new road would be constructed to the absolute minimum standard necessary with appropriate BMPs and mitigation (Appendices C and M).

**Greater Sage-Grouse General Habitat Areas:** Sagebrush habitats would be managed so that mid-scale (i.e. landscape level) shrub cover should include a mix of height classes with herbaceous understory adequate for meeting Greater Sage-Grouse requirements as well as habitat requirements for other sage-associated species such as mule deer and pronghorn.

Consideration would be given to incorporating fine-scale and site-specific Greater Sage-Grouse habitat and management objectives as appropriate to the area into AMPs or livestock grazing permits.

General sage-grouse habitat would be an avoidance area for solar and wind energy rights-of-way.

Greater Sage-Grouse habitat suitability determinations would be based upon existing guidelines modified with data from recent habitat inventories and assessments in the planning area. Relevant range-wide research findings would also be included in habitat suitability determinations.

The BLM would emphasize restoration and rehabilitation of sagebrush in areas that are capable of, but no longer support sagebrush to contribute to the distribution and connectivity of habitat patches.

Greater Sage-Grouse habitats associated with silver sagebrush north of the Milk River would be enhanced to improve habitat conditions for nesting and brood rearing. Specific management actions would be derived from the results of ongoing research and best available science.

New distribution powerlines on BLM land within 1 mile of Greater Sage-Grouse leks would be buried.

Fragmentation of large intact blocks of habitat for special status species would be minimized, particularly in habitat protection areas for Greater Sage-Grouse and grassland birds.

**Greater Sage-Grouse Priority Habitat Management Area:** To minimize wildlife habitat fragmentation, an area with BLM surface ownership greater than 50% would be managed to retain intact blocks of native vegetation where contiguous acreage of greater than 10,000 acres is present. This area includes the southern portion of the sage-grouse core area as identified by MFWP and includes the PAC as identified by the USFWS. This area includes 1,006,312 acres of BLM surface (Map 2.18) on which the following management actions would apply:

- The area would include a no surface occupancy (NSO) stipulation for oil and gas leasing unless there is a more restrictive stipulation in place to protect other resource values (e.g., no lease in the Mountain Plover ACEC). No waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The authorized officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action:
  - would not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat; or,
  - is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to Greater Sage-Grouse.
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the

lease stipulations at the time operations are proposed” (43 CFR 3101.1-2). Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.

- The area would be an avoidance area for the issuance of rights-of-way except within designated corridors. Rights-of-way and similar facilities would be located adjacent to other facilities in a corridor where practical. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The area would remain available for livestock grazing. Site-specific Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate. Third order (fine-scale) and fourth order (site-scale) habitat indicators and characteristics for sage-grouse habitat seasonal use areas as described in the Sage-Grouse Habitat Assessment Framework would be used to quantify habitat objectives.
- The NEPA analyses for renewals and modifications of livestock grazing permits/leases that include lands within Priority Habitat Management Areas will include specific management thresholds based on the Desired Conditions for Greater Sage-Grouse Habitat (habitat objectives) presented in Table 2.27 and Land Health Standards (43 CFR 4180.2) and defined responses that will allow the authorized officer to make adjustments to livestock grazing without conducting additional NEPA.
- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- If prescribed fire is to be used for vegetation treatments, the burn plan will clearly indicate how COT objectives will be addressed and met by its use, and why alternative techniques were not selected.
- A Fire Risk Assessment would be completed for implementation of prescribed fire in relation to sage-grouse goals and objectives.
- The area would be an exclusion area for solar and wind energy rights-of-way.
- The area would be closed to solid leasable minerals, including non-energy leasable minerals.
- Priority Habitat Management Areas are closed to new mineral material sales. However, these areas remain “open” to free use permits and the expansion of existing active pits, only if the following criteria are met:
  - the activity is within the Biologically Significant Unit (BSU) and project area disturbance cap;
  - the activity is subject to the provisions set forth in the mitigation framework (Appendix M.4);
  - all applicable required design features are applied (Appendix M.6).
- New road construction would be limited to realignments of existing roads, if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for public safety. New road construction would include appropriate BMPs and mitigation (Appendices C and M).

- Existing roads, or realignments, would be used to access valid existing rights. If valid existing rights cannot be accessed via existing roads, then any new road would be constructed to the absolute minimum standard necessary with appropriate BMPs and mitigation (Appendices C and M).

**Greater Sage-Grouse Restoration Area:** This is an area with ongoing or imminent impacts containing substantial and high quality sage-grouse habitat that historically supported sustainable sage-grouse populations. This area includes 46,786 acres of BLM surface. Management actions would emphasize restoration for the purpose of establishing or restoring sustainable sage-grouse populations.

Specific management for this area would be addressed through plan implementation, most likely a natural gas field development plan for the Bears Paw South Area (see Appendix E, Map E.1). Management actions addressed during implementation would be based on guidance contained in Instruction Memorandum MT-2010-017 and may include:

- Maximizing the area of interim reclamation on roads and well locations.
- Direct planting of seedlings of shrubs and forbs important for spring and summer food.
- Seeding of wild collected shrub seed to increase nesting habitat.
- Burying powerlines to prevent predator perch sites.

**Mountain Plover:** The following management actions would apply to protect mountain plover habitat and to maintain regional mountain plover populations:

- Mountain plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within mountain plover habitat.
- A timing stipulation would also apply: surface occupancy and use would be prohibited within 1/4 mile of mountain plover habitat from April 1 through July 15.
- Activities for existing oil and gas leases would be managed according to BMPs.
- For surface-disturbing or disruptive activities other than oil and gas, mitigation would be applied where needed to minimize impacts of human activities on mountain plover habitat consistent with the oil and gas surface use restrictions. The BLM would avoid permanent above-ground structures that may provide perches for avian predators or deter plover from using preferred habitat. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of mountain plovers. This would include surveys for mountain plovers in all suitable habitat, as well as avoidance of nesting areas from April 1 through July 15. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.
- Road maintenance in mountain plover habitat would not occur between April 1 and July 15 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.
- The BLM would reduce or control non-native grasses to increase breeding habitat, and prescribed burning could be used to increase the availability of nesting habitat, particularly on lands where taller or non-native grasses occur.
- The BLM would promote integrated pest management practices that limit chemical applications in mountain plover habitat.

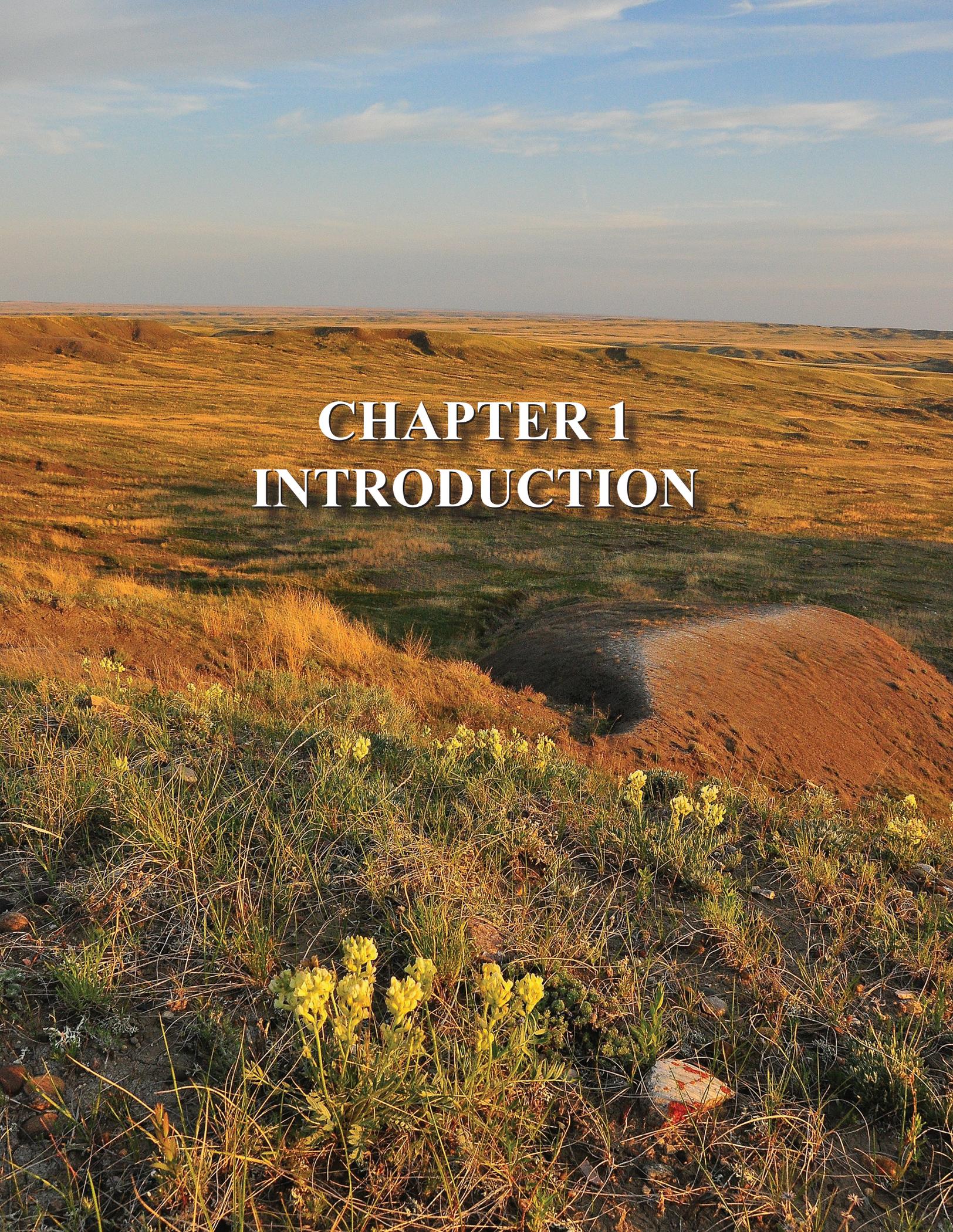
**Piping Plover:** The following management actions would apply to protect piping plover habitat and maintain regional piping plover populations:

- Piping plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within 1/4 mile of essential and critical habitat.
- Road maintenance in piping plover habitat would not occur between April 1 and July 31 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.

**Sprague's Pipit:** The following management actions would apply to protect Sprague's pipit habitat:

- Sprague's pipits would be protected through management actions for the Grassland Bird/Greater Sage-Grouse Priority Areas.
- 
- A timing stipulation would apply to areas within Sprague's pipit habitat: Surface occupancy and use would be prohibited from April 15 through July 15.





# CHAPTER 1 INTRODUCTION



# Chapter 1

## Introduction

Chapter 1 introduces the information discussed throughout the remainder of the HiLine Resource Management Plan. This chapter discusses why the Bureau of Land Management (BLM) prepared this Proposed Resource Management Plan and Final Environmental Impact Statement (Proposed RMP/Final EIS), how the public was involved in this planning process, how issues were defined, and a number of other topics. The information in this chapter is organized into the following headings and subheadings:

- Background
- Purpose and Need
- Planning Area
- Collaboration
- Planning Process
  - Scoping
    - Issues Addressed
    - Issues and Concerns Considered but Not Addressed Further
  - Planning Criteria
  - Vision and Management Goals
  - Development of Alternatives
    - Related Plans
    - Relationship to BLM Policies, Plans, and Programs
  - Draft Resource Management Plan
  - Proposed Resource Management Plan/Final EIS

## Background

The BLM prepared this Proposed RMP/Final EIS to provide direction for managing public lands (BLM lands) and federal minerals in northcentral Montana under the jurisdiction of the HiLine District under the principles of multiple use and sustained yield. Under the Federal Land Policy and Management Act of 1976 (FLPMA), lands administered by the BLM are defined as public lands. However, the public generally refers to public lands as those for which title and control rests with a government (federal, state, regional, county, or municipal). For clarity throughout the document public lands administered by the BLM will be referred to as BLM lands.

The affected lands are currently managed under two RMPs: the Judith-Valley-Phillips Resource Management Plan (BLM 1994a) and the West HiLine Resource Management Plan (BLM 1988). Oil and gas leasing in Phillips and Valley Counties is currently managed under four Management Framework Plans (MFPs): the Phillips MFP (BLM 1977a), Valley MFP (BLM 1977b), Little Rocky Mountains MFP (BLM 1977c), and UL Bend/Zortman MFP (BLM 1977d).

The Judith-Valley-Phillips RMP was amended on five occasions and the West HiLine RMP was amended on seven occasions (Table 1.1). In addition, several new laws, regulations, and policies have affected management of public lands since approval of both plans.

The two previous RMPs and four MFPs are being revised according to guidance in FLPMA and the BLM's Land Use Planning Handbook, H-1601-1. An EIS is incorporated into this document as required by the National Environmental Policy Act of 1969 (NEPA) and Council on Environmental Quality (CEQ) regulations for implementing NEPA.

### Public Lands

Under the Federal Land Policy and Management Act of 1976, the term “public lands” means any land and interest in land owned by the United States within the several States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership.” (43 U.S.C. 1702, Sec. 103(e))

Land use plan decisions establish goals and objectives for resource management (desired outcomes) and the measures needed to achieve these goals and objectives (allowable uses and management actions) in coordination with federal, tribal, state, and local governments; land users; and interested public. This RMP incorporates new information and regulatory guidance, and provides management direction where it may be lacking or requires clarification. Current management direction that has proven effective and requires no change will be carried forward into the revised RMP.

<b>Table 1.1 Resource Management Plan Amendments</b>		
<i>Amendment</i>	<i>RMP Amended</i>	
	<i>Judith-Valley-Phillips</i>	<i>West HiLine</i>
Bitter Creek and Mountain Plover Areas of Critical Environmental Concern Plan Amendment and Environmental Assessment (BLM 2001a)	✓	
Fire/Fuels Management Plan Environmental Assessment/Plan Amendment for Montana and the Dakotas (BLM 2004a)	✓	✓
Loma/Vimy Ridge Watershed Environmental Assessment and Plan Amendment (BLM 2002)		✓
Lonesome Lake Management Area Environmental Assessment and Resource Management Plan Amendment (BLM 1996a)		✓
Montana/Dakotas Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a)	✓	✓
Off-Highway Vehicle Environmental Impact Statement and Proposed Plan Amendment for Montana, North Dakota and South Dakota (BLM 2001b)	✓	✓
Sweet Grass Hills Plan Amendment and Environmental Impact Statement (BLM 1996b)		✓
Wind Energy Development on BLM-Administered Lands in the Western United States, Final Programmatic Environmental Impact Statement (BLM 2005)	✓	✓

The BLM’s multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. Management is based on the principles of multiple use and sustained yield within a framework of environmental responsibility and scientific technology.

The BLM is responsible for resource protection, resource use, recreation, and serving the community on public lands and federal subsurface mineral estate. The resources managed include air resources, cultural, fish and wildlife habitat, minerals, rangelands, timber, visual, watersheds, and wilderness.

**Multiple Use and Sustained Yield**

Under the Federal Land Policy and Management Act of 1976, the term “multiple use” means “the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.” (43 U.S.C. 1702, Sec. 103(c)) The term “sustained yield” means “the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.” (43 U.S.C. 1702, Sec. 103(h))

## Purpose and Need

The purpose of the RMP is to provide a single, comprehensive land use plan to guide management of public lands and minerals administered by the HiLine District. The plan provides goals, objectives, land use allocations, and management direction to maintain, improve, or enhance resource conditions and to provide for long-term benefits to the public.

The need for the revision is the result of considerable changes within the planning area since completion of the Judith-Valley-Phillips RMP and the West HiLine RMP. Additional plan amendments and maintenance actions are not adequate to address these changes, which include increased oil and gas leasing, exploration and development activities, heightened public awareness and interest in BLM management actions and permitted uses, increased demand for recreational use of public lands, increased conflicts between land use and wildlife/wildlife habitat, changes in BLM policy, and expanded scientific knowledge and data.

In March 2010, the U.S. Fish and Wildlife Service (USFWS) published its listing decision for the Greater Sage-Grouse as “Warranted but Precluded.” Inadequacy of regulatory mechanisms was identified as a major threat in the USFWS finding on the petition to list the Greater Sage-Grouse. The USFWS has identified the principal regulatory mechanism for the BLM as conservation measures in RMPs. Based on the identified threats to the Greater Sage-Grouse and the USFWS timeline for making a listing decision on this species, the BLM needs to incorporate objectives and adequate conservation measures into RMPs in order to conserve, enhance, and/or restore Greater Sage-Grouse habitat.

This RMP revision incorporates specific management actions and conservation measures to conserve Greater Sage-Grouse and its habitats on BLM land.

## Planning Area

The BLM administers approximately 2,437,000 acres of public land and 4,240,000 acres of federal minerals within the planning area in Blaine, Chouteau, Glacier, Hill, Liberty, Phillips, Toole, and Valley Counties (Table 1.2). These lands and minerals are managed by three BLM Field Offices in Havre, Malta, and Glasgow along with the Great Falls Oil and Gas Field Office, which provides oil and gas program support in western, central, and northcentral Montana. Figure 1.1 shows surface land ownership within the planning area, and Figure 1.2 shows the federal mineral estate.

<i>County</i>	<i>Total Area (Acres)</i>	<i>BLM Surface</i>		<i>BLM Subsurface</i>	
		<i>Acres</i>	<i>%</i>	<i>Acres</i>	<i>%</i>
Blaine	2,705,755	299,201	11	615,688	23
Chouteau	2,542,874	45,025	2	174,281	7
Glacier	1,916,621	1,040	<1	6,184	<1
Hill	1,853,670	14,448	1	156,967	8
Liberty	915,046	7,543	1	66,990	7
Phillips	3,289,325	1,029,362	31	1,744,612	53
Toole	1,223,008	27,646	2	123,203	10
Valley	3,149,440	1,013,209	32	1,351,730	43
<b>Total</b>	<b>17,595,739</b>	<b>2,437,474</b>	<b>14</b>	<b>4,239,655</b>	<b>24</b>

Source: U.S. Bureau of Census (total acres) and BLM 2012 (BLM surface and subsurface acres).

Figure 1.1 HiLine Planning Area – Surface Ownership

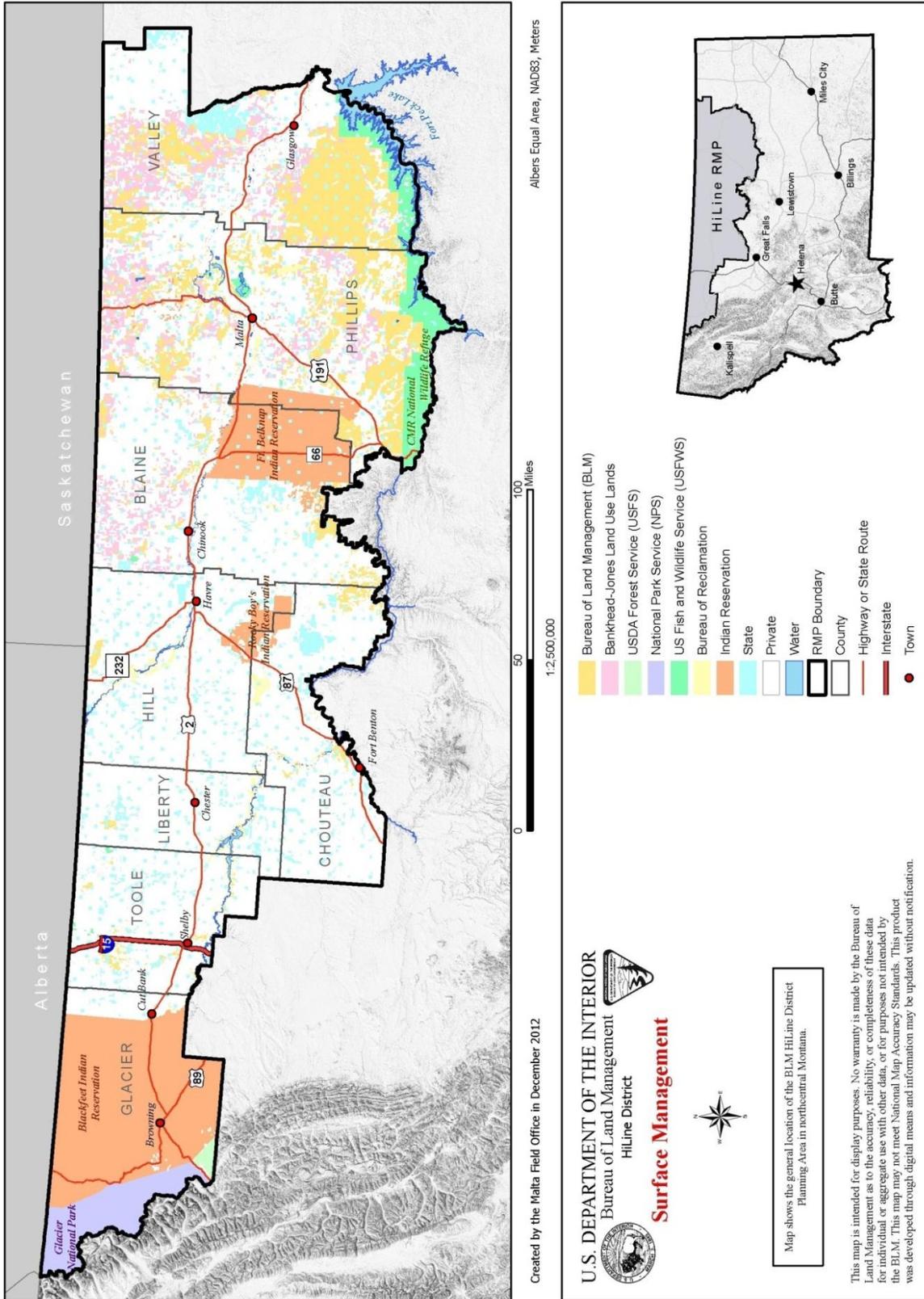
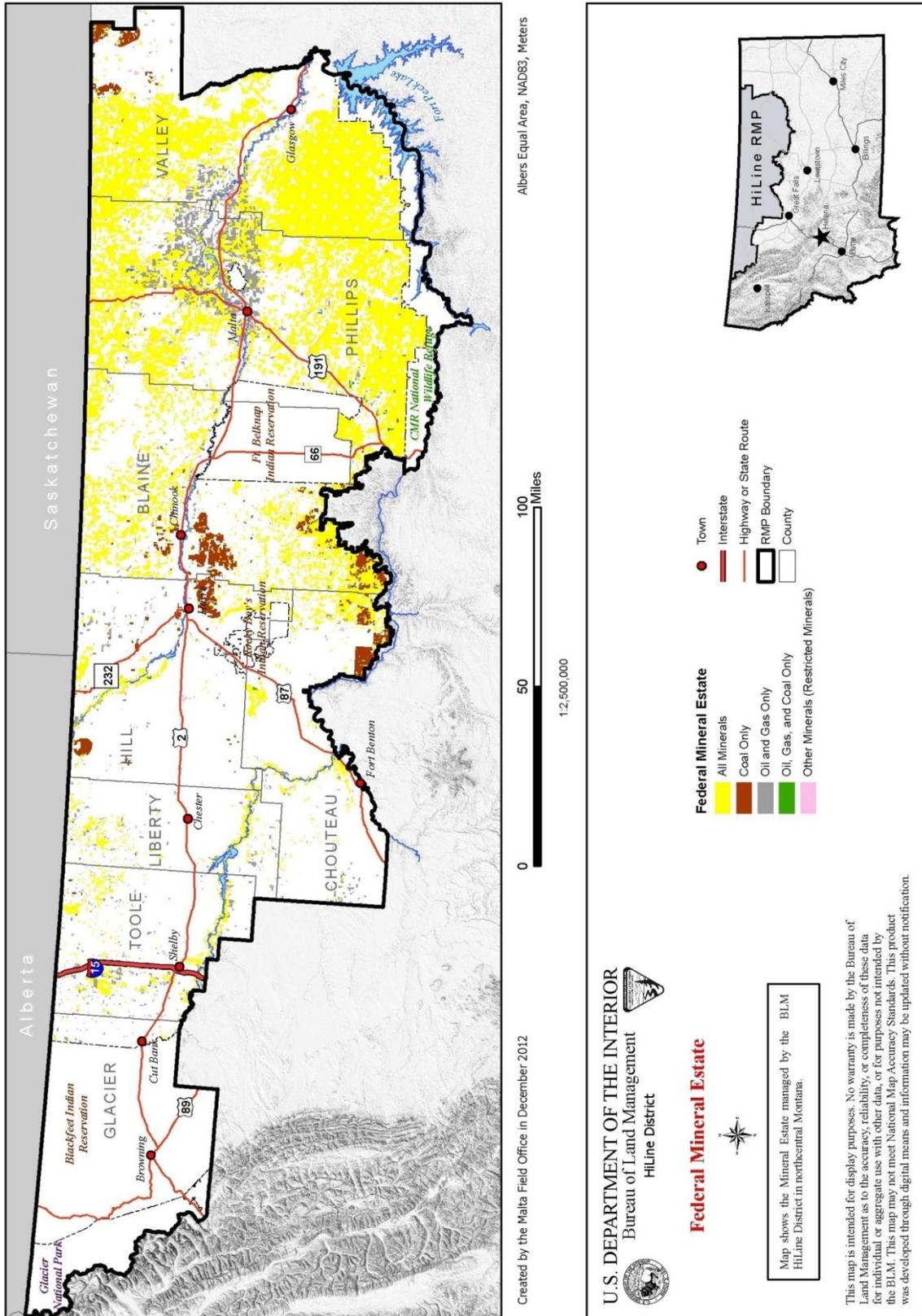


Figure 1.2 HiLine Planning Area – Federal Mineral Estate



## Collaboration

Throughout preparation of the RMP/EIS consultation and coordination have been important components of the planning effort. Public meetings, information mailings and individual contacts with other governmental agencies, Native American tribes, interest groups and the general public were used to gather information for the RMP/EIS. Consultation and coordination will continue with preparation of the Proposed RMP/Final EIS, Record of Decision, and implementation. A list of the public involvement opportunities can be found in Chapter 5.

At the onset of this planning process the BLM invited entities of federal, tribal, state and county governments to collaborate with the BLM on the development of this RMP/EIS by becoming cooperating agencies. The primary role of cooperating agencies (also called cooperators) is to provide special expertise and/or assistance to the lead agency throughout the planning process. Cooperator roles include participation in the scoping process; provision of staff, information, and assistance to the lead agency; performance of (or assistance with) independent preparation of analysis where cooperating staff has special expertise; and review of draft information. Cooperators meet throughout the planning process as a group to discuss issues, solutions, and ideas for revising the plan. Upon request of the lead agency, any other federal, state, local, or tribal government having jurisdiction by law or having special expertise with respect to an environmental issue may become a cooperating agency. An agency may also request the lead agency designate it a cooperating agency.

The following agencies with jurisdiction or special expertise are cooperating agencies for this resource management plan:

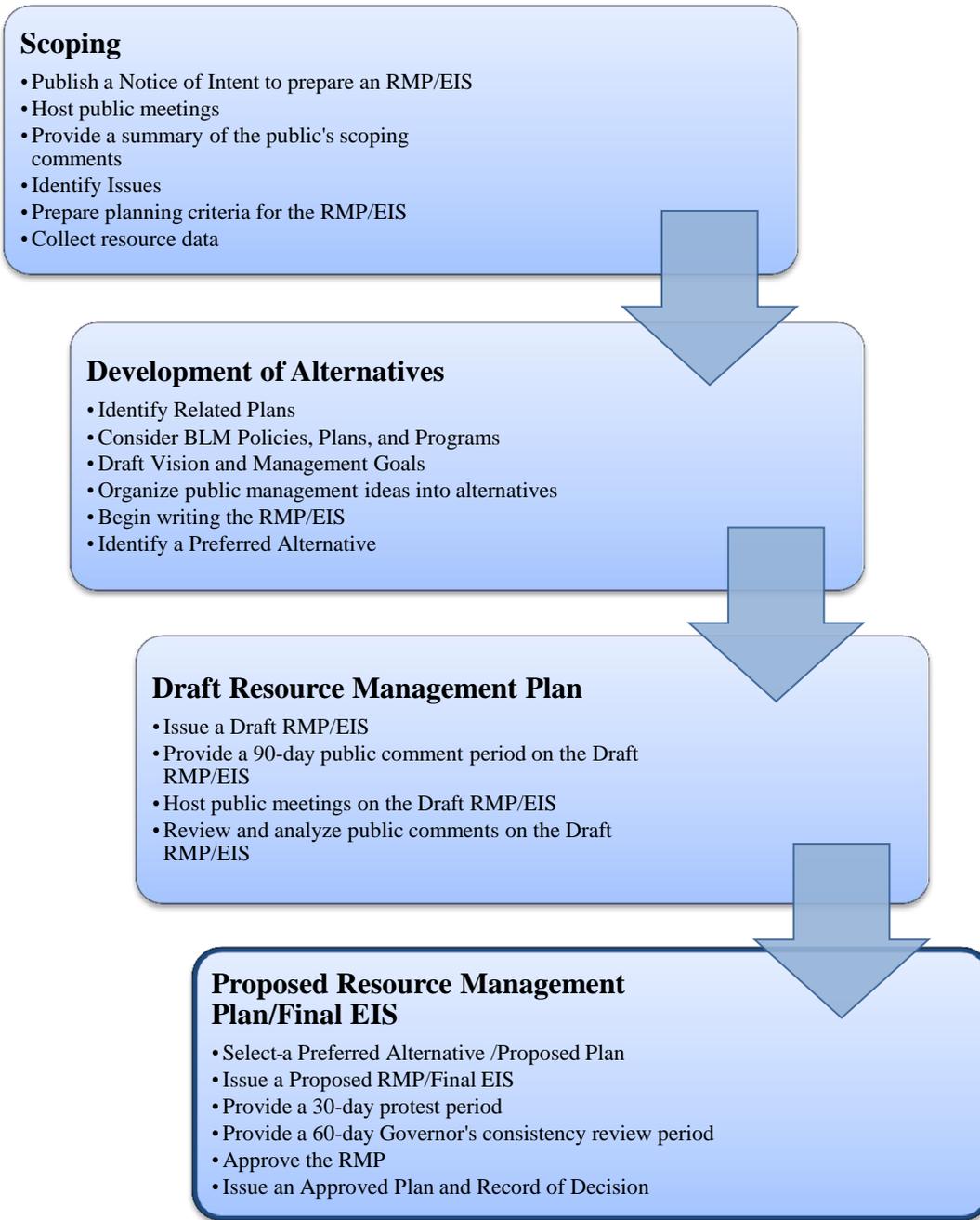
- U.S. Bureau of Indian Affairs
- U.S. Bureau of Reclamation
- U.S. Fish and Wildlife Service
- Montana Fish, Wildlife and Parks
- Blaine County
- Phillips County
- Valley County
- Montana Cooperative State Grazing Districts
  - Badlands
  - Buggy Creek
  - North Blaine
  - North Phillips
  - North Valley
  - South Phillips
  - Wayne Creek
  - Willow Creek

In accordance with the National Historic Preservation Act and in recognition of the government-to-government relationship between tribes and the federal government, letters were sent to nine tribal governments and officials at the start of the planning process to inform them of the HiLine RMP and an opportunity to partner with the BLM as a cooperating agency. While no tribes became an official cooperating agency, coordination has continued through letters and updates. Additional meetings and briefings occurred during the public comment period for the Draft RMP/EIS. A summary of the meetings with tribal governments/officials on the HiLine RMP is presented in Table 5.3 in Chapter 5.

## Planning Process

Figure 1.3 shows the major steps in the planning process that led to the publication of the Draft RMP/EIS and the steps for completing the Proposed RMP/Final EIS. The major steps in Figure 1.3 are described in subsequent sections of this chapter.

**Figure 1.3  
Steps in Preparing the Resource Management Plan**



**Scoping**

The scoping process identifies land use issues and conflicts. These issues stem from new information or changed circumstances, the need to address environmental concerns, or a need to reassess the appropriate mix of allowable uses based on new information. Scoping is the first step in the planning process and closely involves the public with identifying issues, providing resource or other information, and developing planning criteria to guide preparation of the RMP.

On September 9, 2006, a Notice of Intent to prepare the RMP was published in the Federal Register. This notice marked the beginning of a scoping effort that would invite extensive public involvement as a means of helping define the issues to be addressed in the RMP/EIS.

During scoping the BLM requested public input on identifying resource issues and concerns, management alternatives, or other ideas to help in determining future land use decisions for the planning area. In October 2006, eighteen scoping meetings were held across the planning area, including three outside of the planning area (Great Falls, Billings and Helena). Additional information on scoping and public participation is described in Chapter 5.

## Issues Addressed

Planning issues are determined from demands, concerns, conflicts, or problems concerning use or management of public lands and resources. These issues are usually expressed in terms of the potential adverse consequences or effects that a particular land or resource use may have on other lands or resources which are used or valued for other purposes. The following planning issues were identified through public scoping and information gathered in analyzing the existing management situation in the planning area. Based on the input of the public, other government agencies, and the BLM and its cooperators, eleven key issues or unresolved conflicts were identified.

### **Issue 1: How will the area be managed for the development of fluid minerals, solid minerals, and renewable energy?**

#### **Fluid Minerals**

In March 2004, the United States District Court for the District of Montana determined that the West HiLine RMP, which was approved in 1988, did not analyze the impacts of leasing in the area such as to allow leasing to proceed without appropriate NEPA analysis. The BLM was ordered to prepare an environmental impact statement for the oil and gas leasing program that covers the three leases. While this ruling only applied to the three leases, the BLM discontinued leasing in the West HiLine planning area until completion of a new resource management plan that would address the oil and gas leasing program.

Oil and gas leasing continues to occur in the remaining portion of the planning area on a very limited basis until completion of a new resource management plan. In 1988, the BLM suspended lease issuance on lands that require special stipulations to protect wildlife resources until a new resource management plan was completed. This was a result of a protest on the issuance of oil and gas leases by the BLM in Montana. In the early 1990s, the BLM prepared the Judith-Valley-Phillips RMP to address this protest along with other resource issues. However, a subsequent protest to the 1992 Judith-Valley-Phillips RMP warranted a supplement to address an alternative for oil and gas leasing that would avoid leasing valuable wildlife habitat. The supplement was never finalized and the HiLine RMP will address the deficiency.

The HiLine RMP will address the oil and gas leasing program for the entire planning area in compliance with FLPMA, NEPA, ESA, NHPA and all other applicable laws, regulations, and policies. Fluid mineral (oil and gas) development and the related transportation network may conflict with other land and resource uses or values in some areas. Principal management considerations include split estate ownership (private surface/federal minerals), activities and human presence in fish and wildlife habitats, and the potential effects of mineral development on recreation values, forage use, air resources, scenic quality, sensitive vegetation types, and water quality. Areas should be identified where surface-disturbing activities (e.g., mineral exploration and development) are suitable or not suitable.

#### **Solid Minerals**

Solid mineral development, which includes leasable, locatable, and salable minerals, requires the same management considerations discussed above for fluid minerals.

Leasable mineral resources are managed under the Mineral Leasing Act of 1920. Coal is a leasable solid mineral with occurrence potential in the planning area; however, no leases have been issued, no production is occurring, and the potential for development is considered to be low enough that no interest has been shown in obtaining leases.

Locatable minerals (e.g., gold and silver) are managed under the General Mining Law of 1872, as amended, which allows the location and maintenance of mining claims on those federal mineral estate lands open for mining claim location and patent. The BLM manages the Mining Law program on federal mineral estate as set forth in 43 CFR 3809. BLM management includes authorizing and permitting mineral exploration, mining, and reclamation actions. Areas should be recommended for withdrawal from the mining laws for locatable exploration or development where surface-disturbing activities are not suitable. Any terms or conditions should also be considered when needed to protect other resource values while conducting activities under the operation of the mining laws.

Salable minerals were designated under the Materials Act (July 1947), which authorizes the disposal of petrified wood and common varieties of sand, gravel, stone, pumice, cinders and clay through a contract of sale or free use permit. Uncommon varieties of these same minerals are locatable under the Mining Law. Management actions for salable minerals determine areas open or closed to mineral material development and identify mitigation needed to protect other resource values.

### **Renewable Energy (Solar)**

Opportunities for solar development will be provided consistent with the other goals, objectives, and requirements of this plan. Applications for solar energy projects would be processed and authorized as rights-of-way under Title V of FLPMA. Utility-scale concentrating solar power or photovoltaic electric generating facilities must comply with the BLM's planning, environmental, and right-of-way application requirements as established by BLM guidance (WO IM No. 2011-003) or additional Bureau guidance and/or policy. No BLM lands within the planning area have been identified as having potential for this type of energy source.

### **Renewable Energy (Wind)**

The majority of high development potential areas for wind resources are located in the western third of the planning area (Glacier, Toole and Liberty Counties), which has the least amount of BLM land. At this time no existing or proposed wind farms are located on BLM land; however, several wind farms are in varying stages of planning on lands not managed by the BLM. These wind farms have the potential to expand; therefore, future wind farms and/or associated facilities (e.g., transmission lines and utility corridors) could occur on BLM land. The increased need for energy and reducing American reliance on foreign energy resources will most likely increase the demand for wind energy development. Some areas may need to be closed to wind energy development or mitigation may need to be considered to protect other resource values.

## **Issue 2: Are there opportunities to enhance management through land ownership adjustment?**

Opportunities may exist to consolidate land ownership patterns that would provide improved land management efficiencies as well as benefit private landowners, local communities, and the public. Identification of land parcels and/or establishment of criteria that would be used to identify lands for land ownership adjustments are necessary.

## **Issue 3: How will soils and vegetation be managed to achieve or maintain healthy ecosystems while providing for a broad range of multiple uses?**

It is important to determine the appropriate mix of resources produced from the public lands. Vegetation resource values include native vegetative cover, important watersheds, properly functioning riparian areas, quality soils, healthy forests and fuel conditions, and important wildlife habitat (particularly big game crucial winter range and habitat for candidate, sensitive, proposed, or threatened and endangered wildlife and vegetative species). Consumptive uses of vegetation include livestock grazing, forest products, wildlife foraging, and vegetation removal by surface-disturbing activities.

## **Issue 4: How will the area be managed for cultural resources and significant paleontological resources?**

Cultural and paleontological resources must be managed in a way that appropriately protects these unique resources consistent with laws, regulations, and policies. Certain resources and areas need protection. Of particular concern is the need for protection of historic/traditional use areas and significant paleontological sites. Other areas should be accessible for more public and recreational uses.

**Issue 5: How should the BLM manage motorized travel to meet the needs for public access and resource uses while considering conflicts of use and effects on other resources?**

Improperly managed motorized travel can conflict with other land and resource uses and values. Of concern are potential effects on resources, including soil, vegetation, wildlife habitat and disturbance, watersheds, visual values, cultural and paleontological resources, and other recreation values. Principal considerations include providing for suitable and sufficient recreation uses and facilities (both dispersed and commercial), visual resource management direction, and OHV use designations.

**Issue 6: How will access be managed to meet the needs of the public?**

Meeting the access needs of the public involves two management issues. One is the acquisition of legal public access to BLM lands for the use and enjoyment of the public and for resource uses (e.g., energy development, right-of-way authorizations, grazing, and other uses). The other involves designating motorized or non-motorized access routes over BLM land, which would be addressed in travel management planning after completion of the RMP.

**Issue 7: How will the BLM manage resource uses while protecting important wildlife habitat and special status species, including Greater Sage-Grouse?**

The principal issues concerning wildlife habitat are surface-disturbing or disruptive activities in big game winter range, migratory routes, and birthing areas (for elk, mule deer, pronghorn, and bighorn sheep) along with the habitats of other important fish and wildlife species (e.g., Greater Sage-Grouse, mountain plovers, and grassland birds). Alteration or elimination of wildlife habitats on private lands has increased the importance of maintaining functional habitats on BLM lands. Populations of Greater Sage-Grouse have declined throughout their range, and some intensively developed areas in the planning area no longer provide functioning sage-grouse habitats.

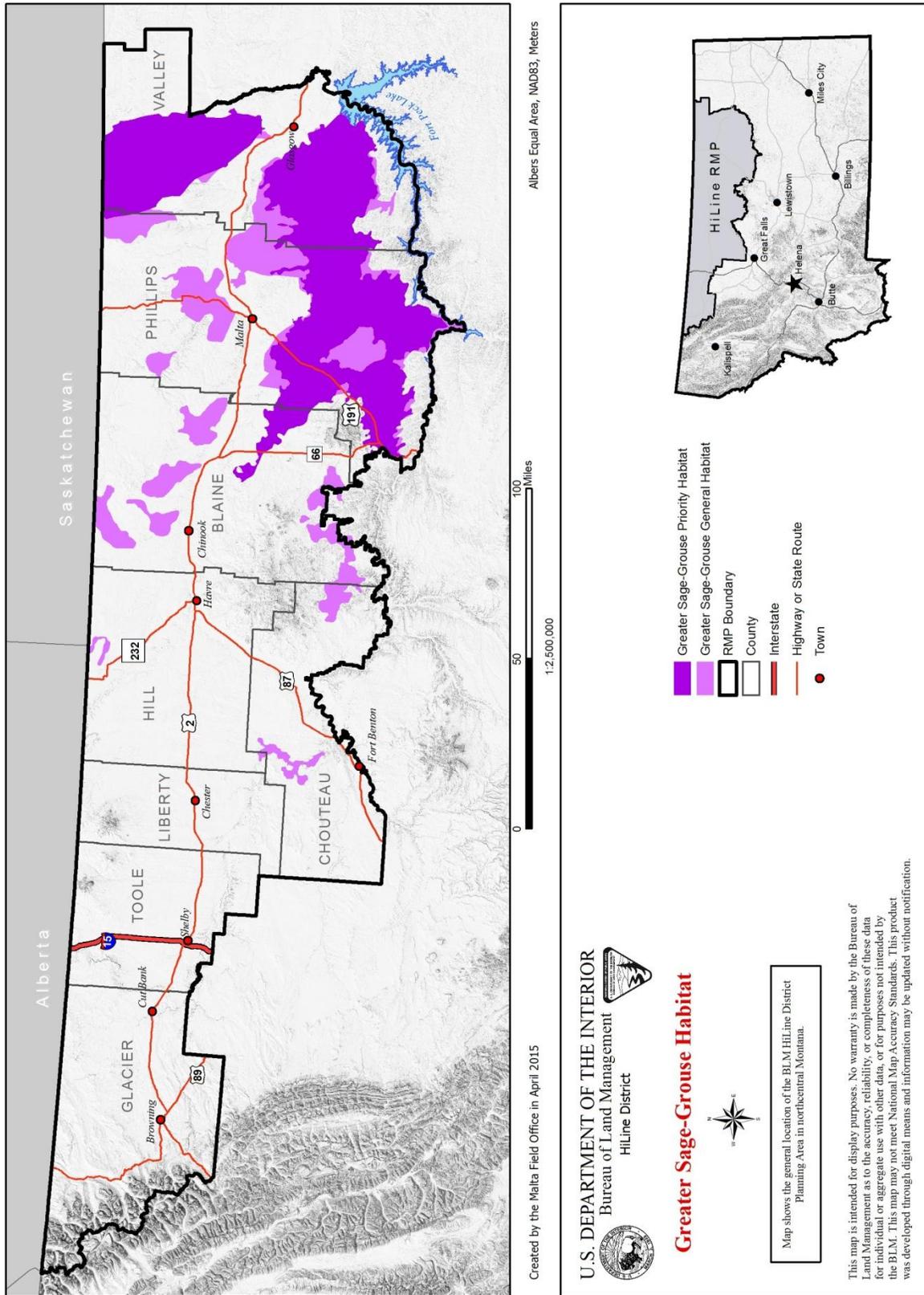
Several categories of species and their habitats within the planning area require special management or considerations. These species are federally listed threatened and endangered, proposed for listing, and candidate and state sensitive species, and BLM special status species. Principal concerns associated with special status species are habitat identification, use, and quality; and the interrelationships between these species and other resource uses and human activities.

In March 2010, the USFWS determined that the Greater Sage-Grouse warranted protection under the Endangered Species Act (ESA), but that listing the species was precluded by the need to address other, higher-priority species first (75 FR 13910, March 23, 2010). One reason for the USFWS decision was an identified need for “improved regulatory mechanisms” to ensure species conservation. The principal regulatory mechanisms for the BLM are Resource Management Plans (RMPs); therefore, the BLM is using this opportunity to develop long-term and effective management for the species on the BLM lands (WO IM No. 2012-044).

On October 27, 2014, the USFWS provided the BLM and Forest Service a memorandum titled “[Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes.](#)” The memorandum and associated maps provided by the USFWS identify areas that represent recognized “strongholds” for Greater Sage-Grouse that have been noted and referenced as having the highest densities of Greater Sage-Grouse and other criteria important for the persistence of the species. The USFWS recognized areas within the HiLine planning area as “strongholds” for Greater Sage-Grouse. Habitat for Greater Sage-Grouse in the HiLine planning area is shown in Figure 1.4.

On November 21, 2014, the U.S. Geological Survey (USGS) published “Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review” (USGS 2014). The USGS review provided a compilation and summary of published scientific studies that evaluate the influence of anthropogenic activities and infrastructure on Greater Sage-Grouse populations. The BLM has reviewed this information and examined how lek buffer-distances were addressed through land use allocations and other management actions in the Draft HiLine RMP. Based on this review, in undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer distances in the USGS Report “Conservation Buffer Distance Estimates for Greater Sage Grouse-A Review (Open File Report 2014-1239)” in both General Habitat Management Areas and Priority Habitat Management Areas as detailed in Appendix M.5.

Figure 1.4 Greater Sage-Grouse Habitat



**Issue 8: Which areas, if any, should be managed as special designations and how should they be managed to protect values that warrant special designation status?**

Resources or features of the lands within the planning area must be evaluated to determine if and how those resources or features might be managed in the future using specific or special management practices. A total of 19 Area of Critical Environmental Concern (ACEC) existing designations and new nominations were considered during this planning process:

- Seven designated ACECs currently lie within the planning area: Azure Cave, Big Bend of the Milk River, Bitter Creek, Kevin Rim, Mountain Plover, Sweet Grass Hills, and prairie dog towns within the 7km Complex.
- The BLM also identified four ACEC nominations during scoping that will be considered in the planning process: Malta Geological Area, Woody Island, Frenchman Breaks, and Zortman/Landusky Mine Reclamation.
- The BLM received five ACEC nominations from the public that will be considered in the planning process: Grassland Bird/Greater Sage-Grouse, Greater Sage-Grouse, Five Watersheds, Mountain Plover, and Black-tailed Prairie Dog and Black-footed Ferret.
- Three other ACEC nominations received prior to the commencement of this planning process will also be considered: Old Scraggy; Saddle Butte; and Little Rocky Mountains.

**Issue 9: How will the BLM manage for fire, including wildfire and prescribed fire?**

The BLM prioritizes wildland fire management activities by assessing risk to life and property, commensurate with fire management costs and realized benefit. Mechanical, prescribed fire and other appropriate treatments can be used to restore and maintain fire regimes and land health, and reduce hazardous fuels accumulations. Areas should be identified where fire is desired to manage ecosystems and areas where current conditions create constraints on use, or where unplanned fire is likely to cause negative effects.

**Issue 10: How will the BLM consider social and economic conditions in the planning area when managing BLM lands?**

The planning area provides a variety of resources that contribute to the local economy (e.g., natural gas, livestock grazing, recreation, etc.). Potential social and economic effects associated with management include changes in employment, income, public revenues, economic dependency, economic stability, and quality of life. Management must recognize the economic activities that are dependent on the land and its natural resources.

**Issue 11: Which areas, if any, should be managed for wilderness characteristics and how should they be managed to protect those values?**

Section 201 of FLPMA requires the BLM to maintain on a continuing basis an inventory of all public lands and their resources and other values. This inventory requirement includes maintaining information regarding wilderness characteristics (BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands).

The existing inventory of BLM land in the HiLine planning area was updated and evaluated to determine whether additional lands other than the existing wilderness study areas (WSAs) have wilderness characteristics. Areas with wilderness characteristics must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. Twenty-six areas within the HiLine District have wilderness characteristics. These areas include 386,462 acres of BLM land and vary in size from 4,118 to 49,564 acres. Section 202 of FLPMA requires the BLM to rely on resource inventories in the development and revision of land use plans, including inventory information regarding wilderness characteristics.

**Issues and Concerns Considered but Not Addressed Further**

Scoping also identified issues, concerns, or questions that can be addressed by current management, BLM policy, administrative action, or that were beyond the scope of this RMP/EIS. Some of these scoping comments are summarized

below, while the Scoping Summary Report (BLM 2007a) provides a comprehensive list of issues and concerns that are outside the scope of the RMP or are addressed through administrative or policy action.

### ***Issues Considered but Not Addressed Further***

#### **How will the BLM manage wildlife populations including elk and other big game, coyotes, and sage-grouse?**

The BLM manages wildlife habitat on public lands, which is addressed in Chapter 2. Montana Fish, Wildlife and Parks (MFWP) is responsible for fish and wildlife population management.

#### **How will bison be managed?**

The grazing regulations provide for authorizing grazing permits for privately owned indigenous animals. The BLM has permitted two allotments in south Phillips County for bison. The BLM has also permitted bison on allotments in other areas of Montana, Colorado, New Mexico, North Dakota, South Dakota, and Wyoming. Any future proposals to change the class of livestock from cattle to bison would be considered as provided by the grazing regulations.

A distinction is made between bison that are privately owned and considered livestock and those that are considered wildlife (publicly owned) that fall under the jurisdiction of the State of Montana.

The Department of the Interior Bison Conservation Initiative (DOI 2008) provides guidance to address the health and genetic composition of the Department's bison herds in seven national wildlife refuges and five national parks, which are all outside of the planning area. While the initiative does mention that the "Charles M. Russell National Wildlife Refuge is in the early stages of considering devoting part of the refuge to bison habitat with adjoining land owners, including the Bureau of Land Management," the USFWS has taken the position that it will not consider reintroducing wild bison on the refuge unless MFWP initiates an effort to restore wild bison on a large landscape (USFWS 2012a).

In May 2012, MFWP began the public scoping process for their Statewide Bison Management Plan EIS. The programmatic EIS will examine an array of possible alternatives from a no action alternative to a number of different bison restoration alternatives (MFWP 2012a). The BLM recognizes the State's role in managing native wildlife and would work cooperatively with MFWP, USFWS, other agencies, partners, and cooperators in the development of a wild bison restoration plan.

#### **The BLM should make a determination on final designation of the wilderness study areas (Bitter Creek and Burnt Lodge) in the new RMP. It is time for the process to move forward.**

The wilderness program is in the transitional stage between wilderness study and Congressional action. Final suitability studies and environmental impact statements completed by the BLM (BLM 1987 and 1989) recommended the Burnt Lodge Wilderness Study Area (WSA) as wilderness and the Bitter Creek WSA as non-wilderness. Only Congress can designate or release these lands from WSA status. The WSAs will continue to be managed under BLM Manual 6330-Management of BLM Wilderness Study Areas.

### ***Concerns Considered but Not Addressed Further***

#### **Who will handle outfitting permits, the Central Montana District or the HiLine District?**

Special recreation permits (SRPs) for outfitting on BLM land entirely within the planning area are administered out of the HiLine District. However, SRPs for lands that also include the Upper Missouri River Breaks National Monument and/or the Lewistown Field Office are administered out of the Central Montana District.

#### **How will the BLM manage wild horses and burros in the planning area?**

No wild horse or burro herd management areas or managed populations of wild horses or wild burros are located in the planning area.

**Where does the money go from the development of federal minerals? Does some of it go back to the county or BLM Field Office, or can it be used to improve firefighting capabilities?**

Mineral revenues are collected from two types of lands administered by the BLM, public domain lands and Bankhead-Jones lands (LU lands). LU lands are further divided by the Taylor Grazing Act of 1934 into Section 3 lands (grazing districts) and Section 15 lands (outside grazing districts; leased to private parties).

Mineral revenues on public domain lands are distributed as follows: the State of Montana receives 50%; the Reclamation Fund (managed by the U.S. Bureau of Reclamation) receives 40%; and the remaining 10% goes to the General Fund in the U.S. Department of the Treasury. Starting in Fiscal Year (FY) 2005, 25% of the disbursement to the State of Montana (or 12.5% of total royalty revenue) is distributed to the county of production.

Mineral revenues on LU lands (Section 3) are distributed as follows: the State of Montana and counties receive 12.5%; the BLM range improvement fund receives 50%; and the remaining 37.5% goes to the General Fund in the U.S. Department of the Treasury. Mineral revenues on LU lands (Section 15) are distributed as follows: the State of Montana and counties receive 50%; and the BLM range improvement fund receives 50%.

*Questions about the RMP Process*

**The BLM should take full advantage of the stakeholder process as decisions are made regarding the management of these public lands, including discussions prior to developing alternatives. The BLM should also provide for public input into the management situation analysis, identification of planning issues, and on a preliminary range of alternatives prior to preparing the Draft RMP/EIS.**

During scoping the BLM requested public input on identifying resource issues and concerns, management alternatives, or other ideas to help in determining future land use decisions for the planning area. Public involvement continued with a 90 day public comment period on the Draft RMP/EIS. Additional information on scoping and public participation is described in Chapter 5.

**How does the BLM handle public comments? Are written comments treated as “one person equals one vote” and are the public comments weighted in any way (local and non-local)?**

Our planning regulations require the BLM to consider each comment thoroughly and equally. When reading the public comments, we look for specific comments or information that help identify issues; develop a reasonable range of alternatives; supplement, improve or modify the analysis; and/or make factual corrections. All the comments received are read and specific comments are identified and coded into the appropriate subject category (e.g., wildlife, cultural resources, recreation, etc.). Duplicate comments from form-type letters and emails or “campaign-style” submissions are only coded once, but each submission is included in the public record.

BLM resource planning is not a voting process. The BLM is expected to make decisions on the merits of each case and not on counting the numbers of responses pro and con (HR Report 94-1163, page 7, May 15, 1976). Our planning regulations do not allow us to enlarge or diminish the value of any comment based on the commenter’s location, livelihood, ability to travel, economic status, philosophical disposition, or any other criterion.

**What type and how much cooperation/coordination is there between the BLM and other agencies including tribal governments? At what point are cooperating agencies involved in the planning process and will the BLM identify those agencies that have been granted cooperating agency status?**

Twelve cooperating agencies have signed memoranda of understanding (MOUs) with the BLM and another three agencies are informal cooperators (i.e., no formal MOU). Cooperators meet throughout the planning process as a group to discuss issues, solutions, and ideas for revising the plan. The cooperating agencies are identified under the Collaboration section of this chapter.

Throughout the development of the RMP, the BLM coordinated and consulted with the tribal governments in the planning area. Additional information on tribal consultation is provided in Chapter 5.

**How will the BLM prepare a “no action alternative” when there are existing parcels that were withheld from an oil and gas lease sale? Some lease parcels are on hold and you’ve already determined that they will eventually be leased.**

Chapter 2, Alternative A is the no action alternative, or current management. Any parcels that were withheld from an oil and gas lease sale would be managed under the guidance of this RMP. A specific area may or may not be available for leasing based on the final decision in the Record of Decision.

**Greater Sage-grouse Conservation Objectives: How do Priority Areas for Conservation correlate with Priority and General Habitat Management Areas?**

In 2012, the Director of the USFWS asked the Conservation Objectives Team (COT), consisting of state and USFWS representatives, to produce recommendations regarding the degree to which the threats need to be reduced or ameliorated to conserve Greater Sage-Grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT Report (USFWS 2013a) provides objectives based upon the best scientific and commercial data available at the time of its release. The BLM planning decisions analyzed in the Proposed RMP/Final EIS are intended to ameliorate threats identified in the COT report and to reverse the trends in habitat condition. The COT Report can be viewed online at the following address:

<http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/COT/COT-Report-with-Dear-Interested-Reader-Letter.pdf>

The highest level objective in the COT Report is identified as meeting the objectives of the Western Association of Fish and Wildlife Agencies (WAFWA) 2006 Greater Sage-Grouse Comprehensive Strategy of “reversing negative population trends and achieving a neutral or positive population trend.”

The COT Report provides a WAFWA Management Zone and Population Risk Assessment. The report identifies localized threats from sagebrush elimination, fire, conifer encroachment, weed and annual grass invasion, mining, free-roaming wild horses and burros, urbanization, and widespread threats from energy development, infrastructure, grazing, and recreation (USFWS 2013a, p. 18).

Key areas across the landscape that are considered “necessary to maintain redundant, representative, and resilient populations” are identified within the COT Report. The USFWS in concert with the respective state wildlife management agencies identified these key areas as Priority Areas for Conservation (PACs).



Rock Creek Area, Northern Valley County

BLM Photo

Within the HiLine planning area, the PACs consist of approximately 2,358,000 acres across all ownerships. Under the Proposed Plan, the PACs are comprised of approximately 1,433,000 acres of Priority Habitat Management Area managed by the BLM. An additional 290,000 acres of General Habitat Management Area are managed by the BLM in the planning area.

## Planning Criteria

The BLM planning regulations (43 CFR 1610.4-2) require planning criteria to guide preparation of the RMP. Planning criteria are the constraints or ground rules that guide and direct the preparation of the plan. They ensure the plan is tailored to the identified issues and that unnecessary data collection and analyses are avoided.

The following criteria were developed based on applicable laws and regulations, agency guidance, and the result of public comment.

- The RMP will address public lands and federal minerals managed by the BLM. Decisions will not be made in the RMP relative to the management of lands not managed by BLM.
- The RMP will be in compliance with FLPMA and all other applicable laws, regulations and policies. Management is based on the principles of multiple use and sustained yield within a framework of environmental responsibility and scientific technology.
- Impacts from the management alternatives considered in the RMP will be analyzed in an EIS developed in accordance with regulations at 43 CFR 1610 and 40 CFR 1500.
- Broad-based public participation will be an integral part of the planning and EIS process.
- Decisions in the plan will strive to be compatible with the existing plans and policies of adjacent local, state and federal agencies as long as the decisions are consistent with the purposes, policies, and programs of federal law, and regulations applicable to public lands.
- The RMP will recognize the State of Montana's responsibility and authority to manage wildlife. The BLM will consult with MFWP as necessary. The RMP will incorporate state or region-wide planning efforts for wildlife to the fullest extent possible.
- The National Sage-Grouse Habitat Conservation Strategy (BLM 2004b) requires that impacts to sagebrush habitat and sagebrush-dependent wildlife species (including Greater Sage-Grouse) be analyzed and considered in BLM land use planning efforts for the public lands with sage-grouse/sagebrush habitats.
- The BLM will utilize the Western Association of Fish and Wildlife Agencies (WAFWA) Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats (Connelly, et al. 2004), and any other appropriate resources, to identify Greater Sage-Grouse habitat requirements and best management practices.
- The RMP will recognize valid existing rights.
- The RMP will incorporate management decisions brought forward from existing planning documents.
- Based on the assumptions of adequate funding, this plan will be periodically reviewed and would be amended if necessary. Plans would be evaluated every 5 years per 43 CFR 1610.4-9. Information gathered from the 5-year evaluation would be used to determine planning needs and priorities for plan revisions and/or amendments.
- The planning team will work cooperatively and collaboratively with the State of Montana, tribal governments, county and municipal governments, other federal agencies, the Central Montana Resource Advisory Council (RAC), and all other interested groups, agencies and individuals.

- The planning process will provide strategies for the protection of recognized traditional and cultural uses.
- The BLM and cooperating agencies/governments will jointly develop alternatives for resolution of resource management issues that are within the authority of the BLM.
- The planning process will incorporate Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997a) developed in accordance with regulations in 43 CFR Subpart 4180 and approved by the Secretary of the Interior.
- The State Historic Preservation Office (SHPO) will be invited to participate throughout the planning process as per the State Protocol developed between the BLM and the Montana SHPO (BLM 1998a).
- Areas with special environmental qualities will be protected and, if necessary, designated as ACECs, Wild and Scenic Rivers, or other appropriate designations.
- The RMP will emphasize the protection and enhancement of the planning area’s biodiversity while, at the same time, providing the public with opportunities for compatible activities on public lands.
- The RMP will recognize local, statewide and national concerns and lifestyles.
- Lands acquired by the BLM will be managed in the manner the RMP prescribes for adjacent public land, subject to any constraints associated with the acquisition.
- The RMP will provide management direction for lands returned to BLM management through revocation of withdrawals. The plan will also address lands acquired through other means.
- Forest management strategies will be consistent with the Healthy Forests Restoration Act and the Tribal Forest Protection Act where appropriate.
- All proposed management actions will be based upon best available scientific information, research and technology, as well as existing inventory and monitoring information.
- The BLM released Handbook H-8320-1, Planning for Recreation and Visitor Services, on August 22, 2014. The handbook assists BLM staff in the planning and management of recreation and visitor services on public land. The release of the handbook coincided with the final development of the Proposed RMP/Final EIS. Accordingly, not all recreation and visitor services decisions in this Proposed RMP/Final EIS follow the recommended format provided in the handbook. However, the Proposed RMP/Final EIS complies with the requirements for establishing desired conditions, allowable uses and actions related to the management of recreation and visitor services as discussed in Handbook H-8320-1.
- Fire management strategies will be consistent with the Federal Wildland Fire Policy (NIFC 2001), National Fire Plan (2000), Interagency Prescribed Fire Planning and Implementation Procedures Guide with BLM supplemental guidance (NIFC 2008), Interagency Standards for Fire and Fire Aviation Operations (Redbook) (NIFC, updated annually), and other BLM handbooks.
- GIS and metadata information will meet Federal Geographic Data Committee standards, as required by Executive Order 12906, signed April 11, 1994. Other applicable BLM data standards will be followed. The goal is to develop an RMP with spatial and temporal data that can be easily accessed for use in subsequent environmental review. At times, GIS analysis may result in acres that are different than other published data sources for BLM lands and minerals.

**GIS Calculations**

Acres displayed in this document should be considered approximations even when displayed to the nearest acre. Most acres were calculated from GIS datasets and as a result may not match acres provided in prior published documents that contained calculations from master title plats or other base data. For example, acres calculated for wilderness study areas and reported in the 1991 Montana Statewide Wilderness Study Report vary from the GIS calculated acres for those same areas. The data used throughout this document is for land use planning purposes and not necessarily for actual on-the-ground implementation.

## Vision and Management Goals

The vision of the HiLine District is to manage the planning area in a manner that provides for multiple use while sustaining a healthy and productive environment for present and future generations.

A number of management goals guided the development of alternatives for this RMP. The goals are the result of information provided through public scoping, existing laws and regulations, and the planning team. Management goals are discussed in more detail in Chapter 2. These goals include:

- Protect, preserve and interpret the cultural and paleontological resources within the planning area and ensure they are available for appropriate uses by present and future generations.
- Manage air resources, soils, vegetation, and water resources to meet all state and federal standards, maintain a diversity of ecological conditions and enhance resource values while providing for a variety of multiple uses that are economically and biologically feasible.
- Ensure habitat for fish and wildlife species, including special status species, is of sufficient quantity and quality to enhance biological diversity and sustain ecological, economic and social values.
- Ensure dependable and environmentally responsible exploration and development of mineral resources and renewable energy consistent with other resource goals.
- Improve resource management efficiency and provide public benefits while protecting significant resources.
- Provide a diverse array of recreational opportunities and visitor experiences while maintaining healthy BLM land resources.
- Manage certain areas with significant values (e.g., ACECs, WSAs, National Historic Trails, etc.) through special management to protect those resources in need of a higher degree of management.

## Development of Alternatives

The scoping results, the issues to be addressed, and the planning criteria along with related plans, other BLM plans, and the vision and management goals all helped define the scope of possible alternatives that will be carried forward throughout the planning process. Management strategies are aimed at providing viable options for addressing the planning issues.

Public input received during the scoping process was considered to ensure that all the issues and concerns would be addressed, as appropriate, in developing the alternatives. Many comments addressed management of oil and gas development and other resources including travel planning, designating special management areas, consideration of lands with wilderness characteristics, and hunting and angling areas of interest. The scoping and public comment processes are summarized in Chapter 5.

This Proposed RMP/Final EIS describes and analyzes a reasonable range of management alternatives for the public lands and resources administered by the HiLine District. The analyses contained in the draft aided the BLM in formulating this Proposed RMP/Final EIS. Based on the analyses, the RMP will ensure the sustainability of important resources in the area (e.g., crucial winter range and other wildlife habitats, air and water quality, scenic views, healthy vegetative cover, and soil stability) while providing for resource uses (e.g., renewable energy, motorized and nonmotorized recreational activities, livestock grazing, range improvements, mineral exploration and development, and economic development opportunities) and resource protection (cultural and paleontological) in accordance with laws and regulations.

## Related Plans

This section discusses other plans that are germane to the development of this RMP. The BLM planning regulations require that RMPs be "... consistent with officially approved or adopted resource-related plans, and the policies and

programs contained therein, of other Federal agencies, State and local governments and Indian tribes, so long as the guidance and resource management plans are also consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands ....” (43 CFR 1610.3-2(a)).

The BLM is aware that there are specific state laws and local plans relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that the BLM's land use plans be consistent with officially-approved state and local plans only if those plans are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Where officially-approved state and local plans or policies and programs conflict with the purposes, policies, and programs of federal law applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially-approved state and local policies and programs (as opposed to plans), this consistency provision only applies to the maximum extent practical. While county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to state or county plans, planning processes, policies, or planning stipulations.

### **Blaine County Master Plan**

The Blaine County Master Plan (Blaine Co. 1996) was developed to guide the use of lands and resources in Blaine County, promote the lawful use of private property, protect the rights of all persons in the county, and secure the benefits of economic activities.

### **Blackfeet Comprehensive Plan**

The Blackfeet Comprehensive Plan (Blackfeet Planning Dept. 1984) serves as a mechanism for planning, budgeting, development of new programs and services, strengthening of existing services, an evaluation tool, and guide not only for Tribal programs and Tribal government, but for all other programs and organizations providing services for the Blackfeet Reservation Community.

### **Black-footed Ferret Recovery Plan**

The Black-footed Ferret Recovery Plan (USFWS 1988a) outlines steps for recovery of the black-footed ferret throughout its historical range. A six-step process is outlined beginning with ensuring success of captive breeding, locating reintroduction habitat, finding other populations of ferrets, devising release strategies, managing reintroduced and other populations, and building programs for public support of the recovery effort.

### **Chinook-Blaine County Comprehensive Plan**

The Chinook-Blaine County Comprehensive Plan (Chinook-Blaine Co. 1979) provides information on population, projected land needs for residential growth, land use, public facilities, natural resources, and land use problems. The plan also provides land use policy recommendations for land use, public investments, and local governmental administrative policy changes.

### **Chouteau County Growth Policy Plan**

The Chouteau County Growth Policy Plan (Chouteau Co. 2004) includes a framework of goals and policies, and an implementation program that outlines specific action steps that are derived from the goals and policies.

### **Comprehensive Conservation Plan for the Charles M. Russell National Wildlife Refuge and UL Bend National Wildlife Refuge**

The Comprehensive Conservation Plan (USFWS 2012a) provides long-range guidance and management direction for the refuges' programs including habitat conservation and wildlife-dependent recreation such as hunting and wildlife observation.

### **Comprehensive Economic Development Strategy for North Central Montana Economic Development District Inc.**

The Comprehensive Economic Development Strategy (North Central MT EDDI 2006) is a resource to accomplish the following goals for five counties (Cascade, Glacier, Pondera, Teton, and Toole) in northcentral Montana: create higher skills, higher wage jobs; raise income levels; diversify the economy; and improve the quality of life while protecting the environment.

### **Conservation Plan for Black-Tailed and White-Tailed Prairie Dogs in Montana, and the Final Fish, Wildlife & Parks Region 6 Prairie Dog Abundance and Distribution Objectives**

The goal of this Conservation Plan for the State of Montana (MPDWG 2002) and Abundance and Distribution Objectives (MFWP 2006a) is to provide for management of prairie dog populations and habitats to ensure long-term viability of prairie dogs and associated species.\

### **Hill County Growth Policy - Preliminary**

The goals and objectives in the Hill County Growth Policy (Hill Co. 2009) serve to establish general guiding principles in matters concerning planning for the future of Hill County. This includes policy statements that provide a more specific reference or means of achieving what the county has adopted as a desirable path to guide the citizens in the long term.

### **Lewis and Clark National Historic Trail Comprehensive Management Plan**

This Comprehensive Management Plan (NPS 1982) outlines management objectives, practices, and responsibilities, and emphasizes partnerships in trail administration.

### **Management Plan and Conservation Strategies for Sage Grouse in Montana – Final**

The Management Plan and Conservation Strategies for Sage-Grouse in Montana (MSGWG 2005) is designed to provide biological information, identify information gaps, and facilitate data collection required for future resource management decisions. It establishes a process to achieve sage-grouse management objectives and provides a framework to guide local management efforts. Regional or local groups will adapt the statewide plan to develop and implement strategies in respective geographic areas that will improve or maintain the sagebrush steppe and reduce or mitigate factors that may further reduce habitats or populations.

### **Montana Aquatic Nuisance Species Management Plan**

The goal of the Montana Aquatic Nuisance Species (ANS) Management Plan (MANS 2002) is to minimize the harmful ecological, economic, and social impact of ANS through prevention and management of introduction, population growth, and dispersal into, within, and from Montana. The plan includes a system to classify all nonindigenous aquatic species in Montana, identifies the proper management for each class, details current authorities and programs, and sets objectives that will lead to the accomplishment of the goal.

### **Montana Bald Eagle Management Plan**

The Bald Eagle Management Plan (MBEWG 1994) provides landowners and resource managers with information on the biology of bald eagles and management guidelines to allow informed decisions about land use to help conserve the species and its habitat.

### **Montana Sage Grouse Habitat Conservation Program**

The Governor of the State of Montana issued Executive Order 10-2014 which created the Montana Sage Grouse Oversight Team (MSGOT) and the Montana Sage Grouse Habitat Conservation Program. The executive order outlines a number of conservation strategies for state agencies to follow for land uses and activities in sage-grouse habitat in addition to establishing the MSGOT and habitat conservation program. The State conservation efforts are complimentary to the conservation measures proposed in the BLM land use plans and when combined will provide conservation efforts across land ownership boundaries.

### **Montana Weed Management Plan**

The purpose of the Montana Weed Management Plan (MWMP 2008) is to strengthen, support, and coordinate private, county, state, and federal weed management efforts in the state, and promote implementation of ecologically-based integrated weed management programs.

### **Nez Perce (Nee-Me-Poo) National Historic Trail Comprehensive Plan and Interpretive Strategy**

In addition to items concerning objectives and practices to be observed in trail management and trail marking requirements given in Section 5(e) of the National Trails System Act, the Comprehensive Plan (USFS 1990a) and Interpretive Strategy (USFS 1990b) address:

- Identification of non-federal lands outside of the high potential route segments needed for access to the National Historic Trail, development of trailhead and trailside facilities, and protection, interpretation, and visitor use of historic sites.
- Designation by the Secretary of Agriculture of complementary state and local components found to qualify as parts of the National Historic Trail provided they are administered without expense to the United States.
- Recognition of the need for habitat and visitor use management with respect to endangered species.
- Where segments of the Nez Perce route have been designated by Congress and such segments are within existing wilderness and other more restrictive forms of management, the trail shall be administered with the requirements of wilderness management and/or other such management.
- Direction on how the national identity of the trail shall be preserved and made known to trail users, consistent with the nationally recognized signing system.
- Identification of the relationship and alternatives for interconnecting portions of the Oregon and Lewis and Clark National Historic Trails, and the Continental Divide National Scenic Trail.

### **Phillips County Growth Policy**

The Phillips County Growth Policy (Phillips Co. 2006) addresses the land and resources, including characteristics and conditions and trends, the people and economy, public facilities, and infrastructure and services. The policy lists overall goals and objectives and covers a five year period from 2006 through 2011.

### **Phillips County Land Resource Use Plan**

The Phillips County Land Resource Use Plan (Phillips Co. 2012) lists goals and objectives that serve to establish general guiding principles in matters concerning planning for resource and land uses in Phillips County.

### **Recovery Plan for the Pallid Sturgeon**

The Recovery Plan (USFWS 1993) describes the distribution, status, life history, and habitat association information that is known about the pallid sturgeon. The plan provides the short- and long-term recovery objectives and actions needed to achieve recovery of the pallid sturgeon.

### **Valley County Resource Use Plan**

The Valley County Resource Use Plan (Valley Co. 2006) provides a plan for the best uses of Valley County lands and resources.

## **Relationship to BLM Policies, Plans, and Programs**

A number of BLM plans relate to or otherwise govern management in the planning area. These plans are considered by the BLM when specific management actions are implemented. However, specific management actions from these plans must be in conformance with the approved HiLine RMP and Record of Decision when completed (43 CFR 1601.0-5(b)).

All proposed actions in the future, including implementation of existing activity plans, must also be in conformance with the approved HiLine RMP Record of Decision when completed. Some of these plans are listed below and provide a perspective of the many management considerations pertinent to the planning area.

#### **Bitter Creek Wilderness Environmental Impact Statement**

This plan (BLM 1989) addressed the environmental consequences of managing the Bitter Creek WSA in the planning area.

#### **BLM National Greater Sage-Grouse Land Use Planning Strategy (BLM IM No. 2012-044)**

This strategy (BLM 2011) provides direction to the BLM for considering Greater Sage-Grouse conservation measures identified in the Sage-Grouse National Technical Team's - *A Report on National Greater Sage-Grouse Conservation Measures*.

#### **Geothermal Leasing in the Western United States Final Programmatic Environmental Impact Statement**

This plan (BLM and USFS 2008) evaluates issues associated with geothermal leasing of federal mineral estate on western public lands administered by the BLM and the U.S. Forest Service. The plan assesses the environmental, social, and economic impacts associated with geothermal leasing on public lands in 12 western states (including Alaska) and evaluates a number of alternatives to determine the best management approach to mitigating potential impacts and facilitating geothermal leasing of federal mineral estate.

#### **Missouri Breaks Grazing Environmental Impact Statement**

The Missouri Breaks Grazing EIS (BLM 1979) addresses the grazing management program in the Missouri Breaks area of central Montana, including lands available for livestock grazing and the allocation of animal unit months. This EIS involves nearly 2.2 million acres of BLM land, including some public land in the southern portion of the planning area.

#### **Missouri Breaks Wilderness Suitability Study/Environmental Impact Statement**

This plan (BLM 1987) addressed the environmental consequences of managing 12 wilderness study areas (WSAs) as wilderness or non-wilderness, including the Burnt Lodge WSA in the planning area.

#### **Montana Statewide Wilderness Study Report**

This plan (BLM 1991) provides the wilderness recommendations for 36 WSAs in Montana, including the two WSAs in the planning area (Burnt Lodge and Bitter Creek).

#### **National Oil and Hazardous Substances Pollution Contingency Plan**

This plan (40 CFR 300) is the federal government's blueprint for responding to both oil spills and hazardous substance releases.

#### **National Sage-Grouse Habitat Conservation Strategy**

This plan (BLM 2004b) serves as guidance on managing, restoring and enhancing sagebrush habitat on BLM lands. The guidance is designed to support and promote the range-wide conservation of sagebrush habitats for sage-grouse and other sagebrush-obligate wildlife species.

#### **National Scenic and Historic Trails Strategy and Work Plan**

This plan (BLM 2006a) provides a 10-year framework for the development of program guidance and direction for improved management of the BLM's National Scenic and Historic Trails (NSHT) Program.

**Native American Graves Protection and Repatriation Act Reburial Policy on BLM Lands, BLM Handbook 8120-1, Ch. II, Paragraph C3**

This policy (BLM 2006b) clarifies the position of the BLM that reburial of Native American Graves Protection and Repatriation Act (NAGPRA) items on public lands may be authorized on a case-by-case basis. Lands that may be considered for reburial activities include lands withdrawn from multiple uses and mineral entry.

**Nongame Migratory Bird Habitat Conservation Plan**

This plan (BLM 1992a) provides for managing nongame birds that migrate to the tropics or use neotropical habitats. The overall intent is to reverse the decline in some bird populations and to implement a proactive program for other migratory species.

**Prairie Potholes Environmental Impact Statement**

This plan (BLM 1982) addresses the grazing management program in the prairie potholes area of northern Montana, including lands available for livestock grazing and the allocation of animal unit months. This EIS involves about 1.75 million acres of BLM land, including most of the planning area.

**Resource Management Plan Alternative Development for Livestock Grazing (BLM IM No. 2012-169)**

This Instruction Memorandum (BLM 2012) communicates policy guidance regarding resource management plan/environmental impact statement (RMP/EIS) alternative development for livestock grazing.

**Standards for Rangeland Health and Guidelines for Livestock Grazing Management**

This plan (BLM 1997a) documents the effects of adopting regional Standards for Rangeland Health and Guidelines for Livestock Grazing Management on BLM land in Montana, North Dakota and South Dakota. Standards are physical or biological conditions or functions required for healthy, sustainable rangelands. Guidelines are management practices or methods which help ensure that standards can be met or significant progress can be made toward meeting standards.

**Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement**

This plan (BLM 2007b) assesses the environmental consequences of implementing a vegetation treatment program to manage a variety of vegetation species on BLM land in the Western United States. The vegetation treatment program responds to many different control requirements, including suppressing plants that are toxic to humans and animals, enhancing visibility, maintaining passages for transportation, facilitating drainage, reducing fuel for wildland fires, and controlling the expansion of exotic species, which includes noxious weeds. The vegetation treatment methods include manual, mechanical, biological, prescribed burning, and chemical.

**Wind Energy Development on BLM-Administered Lands in the Western United States Final Programmatic Environmental Impact Statement**

This plan (BLM 2005) evaluates issues associated with wind energy development on western public lands administered by the BLM. The plan assesses the environmental, social, and economic impacts associated with wind energy development on public lands in 11 western states (excluding Alaska) and evaluates a number of alternatives to determine the best management approach to mitigating potential impacts and facilitating wind energy development.

**Draft Resource Management Plan**

Five alternatives for managing public lands in the HiLine District, including a no action alternative (current management), were described in the Draft RMP/EIS. The alternatives described various ways the BLM could address the planning issues. Each alternative had a different emphasis, but all met the overall vision and management goals and the multiple use-sustained yield mandate of FLPMA.

The Draft RMP/EIS was released to the public in March 2013. The BLM provided a 90-day comment period and hosted a series of public meetings across the HiLine planning area. Additional information on the public participation process is provided in Chapter 5.

## Proposed Resource Management Plan/Final EIS

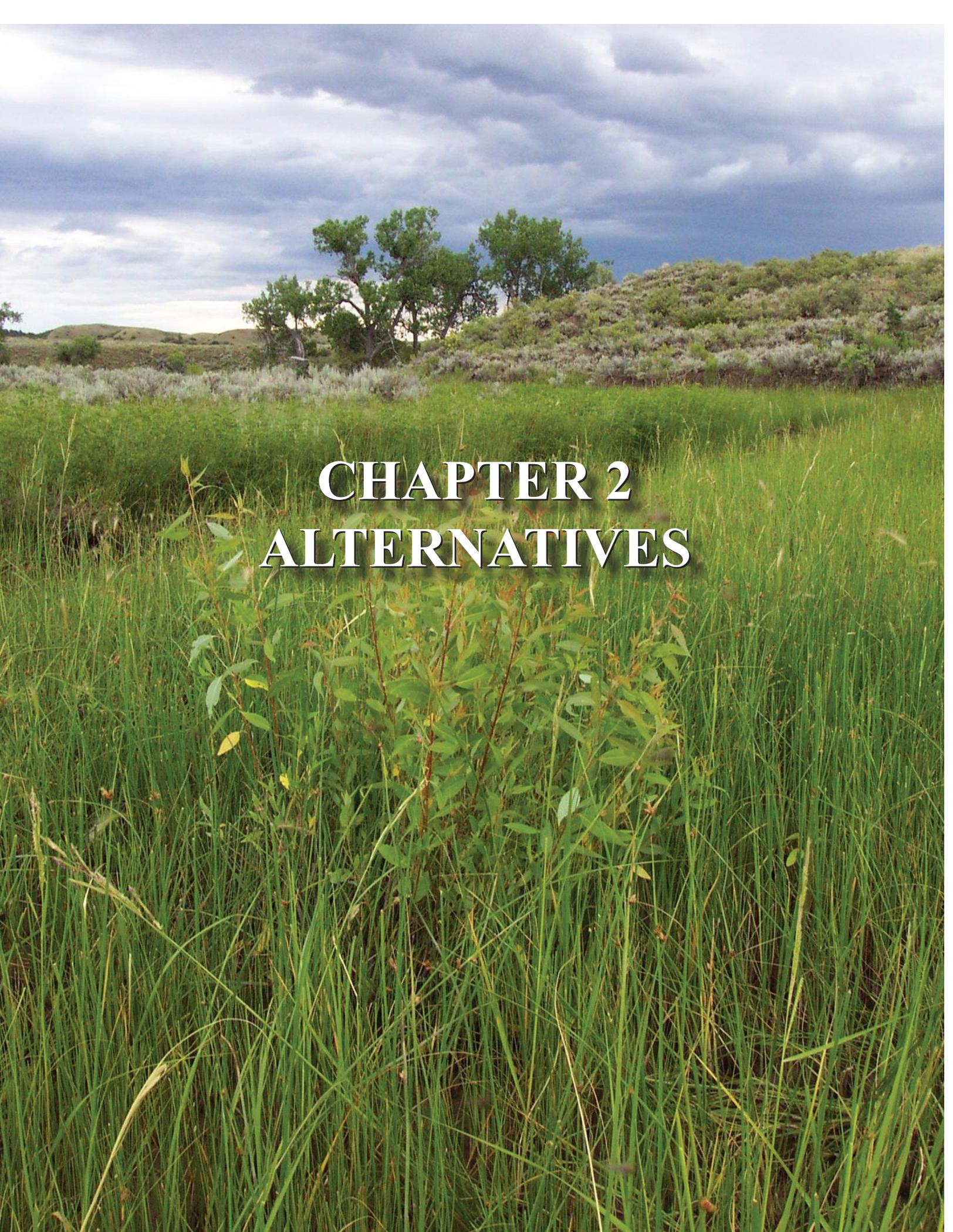
Following the 90-day public comment period on this Draft RMP/EIS, the comments were analyzed and the BLM began preparing the Proposed RMP/Final EIS. A total of 2,438 letters and emails were received on the Draft RMP/EIS. Additional information on the public comments and the BLM's responses can be found in Chapter 5 of this Proposed RMP/Final EIS.

A 30-day protest period and 60-day Governor's consistency review period will occur following publication of the Proposed RMP/Final EIS. At the end of the protest period and Governor's consistency review, the BLM may issue a Record of Decision (ROD) approving implementation of any portion of the proposed RMP not under protest. Approval would be withheld on any portion of the plan under protest until the protest has been resolved. Proposed land use plan decisions are protestable to the BLM Director but are not reviewable by the Office of Hearings and Appeals. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations after the BLM resolves the protests to land use plan decisions and makes a decision to adopt or amend the RMP.



Kevin Rim, Toole County

Photo by Brian Hockett

A landscape photograph of a grassy field. In the foreground, there is a dense patch of tall green grass. A single, bushy green shrub with small leaves and some brownish flowers stands prominently in the center. The middle ground is filled with more green grass and some low-lying shrubs. In the background, there are several trees with green foliage, and the sky is filled with large, dark, dramatic clouds. The overall scene is a natural, open landscape.

# CHAPTER 2 ALTERNATIVES



# Chapter 2

## Alternatives

### Introduction

Chapter 2 details five alternatives for managing the HiLine District to meet the purpose and need, the vision and management goals, and to address the issues discussed in Chapter 1. Each alternative represents a reasonable set of objectives and actions to guide future management of the planning area. This chapter is presented in three sections:

- Current Management and Alternatives (including Decisions Common to All Alternatives)
- Alternatives Considered but Not Analyzed in Detail
- Comparison of Alternatives

The Bureau of Land Management (BLM) complied with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality (CEQ) implementing regulations in developing alternatives, including seeking public input and analyzing a reasonable range of alternatives. Where necessary to meet the planning criteria, to address issues and comments from the public and cooperating agencies, or to provide a reasonable range of alternatives, the alternatives include management options for the planning area that would modify or amend decisions made in the West HiLine and Judith-Valley-Phillips Resource Management Plans (RMPs). Some decisions from the West HiLine and Judith-Valley-Phillips RMPs remain acceptable and reasonable; in these instances, there is limited need to develop alternative management prescriptions. In some cases, management actions are the same across all alternatives or may reflect only a decision to implement or not implement an action.

Public input received during the scoping process was considered to ensure that all the issues and concerns would be addressed, as appropriate, in developing the alternatives. Many comments addressed management of oil and gas development and other resources including travel planning, designating special management areas, and hunting and angling areas of interest. The scoping and public comment processes are summarized in Chapter 5.

Many of the decisions from the existing RMPs have been implemented. In some cases, implementation of these decisions established valid existing rights or other obligations that are important considerations in preparing the HiLine RMP. For example, many of the oil and gas resources in the planning area are leased. The presence of these valid existing rights influences, and sometimes limits, management choices. Specific to the oil and gas program, the alternatives address the availability and allocation of lands for future oil and gas leasing, potential lease stipulations, and additional mitigation to be considered and applied during the Application for Permit to Drill (APD) process.

The guidance found in the Decisions Common to All Alternatives sections has been carried forward from existing laws, regulations, policy, and previous planning efforts, primarily the West HiLine RMP (BLM 1988, 1992b) and the Judith-Valley-Phillips RMP (BLM 1994a).

All of the alternatives presented herein have been analyzed by a BLM interdisciplinary team. Alternative E was identified in the Draft RMP and Environmental Impact Statement (EIS) as the Preferred Alternative. Based on comments received during the public comment period on the Draft RMP/EIS and additional internal review, the BLM developed the Proposed RMP which is a variation of Alternatives B, C and E and is within the range of alternatives in the Draft EIS. The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.

Upon completion of this process, the Decisions Common to All Alternatives, combined with the Preferred Alternative selected by the State Director (either Alternative E or any of the other alternatives, or a combination thereof) will form the management plan for the HiLine District.

## Summary of Changes to Alternative E to Develop the Proposed RMP/Final EIS

The Draft RMP/EIS was published in March 2013, and the public comment period closed in June 2013. The BLM identified 1,185 individual comments from the comment documents received, which touched on a wide range of issues. While many of the comments supported the Preferred Alternative in the Draft RMP/EIS, commenters also identified areas where the document could be improved. The HiLine District carefully evaluated and responded to these comments (see Chapter 5). The Proposed RMP/Final EIS contains a number of changes made in response to comments. As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP/EIS, the BLM has developed the Proposed RMP/Final EIS for managing BLM-administered lands in north central Montana. The Proposed RMP/Final EIS focuses on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed RMP/Final EIS is a variation of the Preferred Alternative (E) and is within the range of alternatives analyzed in the Draft RMP/EIS.

Changes made to the Proposed RMP/Final EIS from the Preferred Alternative (E) in Draft RMP/EIS are the following:

**Air Resources and Climate Change:** Additional background information was added to the Proposed RMP regarding emissions of greenhouse gases (GHG) and national actions to reduce GHGs. The goals were revised for air quality and air quality-related values, and objectives were added for reducing air pollutant and GHG emissions from BLM-authorized activities.

**Fluid Minerals:** Additional background information was added to the Proposed RMP regarding hydraulic fracturing (fracking). Guidance in the hydraulic fracturing rule published as final on March 26, 2015 (80 Fed. Reg. 16128) would be applied as appropriate. New oil and gas lease stipulations were added for Air Quality and VRM Class II areas. To provide consistency between Montana BLM land use plans, the oil and gas lease stipulation for general sage-grouse habitat was revised from a one-mile no surface occupancy (NSO) buffer around leks to a 6/10 mile lek buffer.

**Livestock Grazing:** Specific, measurable objectives for managing livestock grazing were added. Livestock grazing would be managed to promote proper functioning condition on upland, riparian and sensitive species habitats. Additional rationale was added for not analyzing a No Grazing or Reduced Grazing alternative.

**National Historic Trails:** The goal was revised and objectives were added for congressionally designated national historic trails. A 1/2 mile wide trail management corridor was identified for the Nez Perce and the Lewis and Clark National Historic Trails. Additional language was added clarifying the BLM would implement the Interagency National Historic Trail Plans for the Lewis and Clark and Nez Perce National Historic Trails for BLM-managed lands within identified Trail Management Corridors and participate in the interagency planning update efforts as needed.

**Renewable Energy Resources:** Approximately 1,600 acres near Shelby, Montana were identified as Potential Wind Development Areas. Priority sage-grouse habitat was closed to development of commercial solar energy and geothermal resources. General sage-grouse habitat would be an avoidance area for wind and solar energy ROWs in the Preferred Alternative.

**Vegetation:** A new goal and objective was added guiding management of woody draws. Woody draws would be managed to achieve multi-aged stands that are healthy, structurally diverse, and reproductively successful. The goals and objectives for riparian areas and wetlands were modified to clarify that management strategies to promote proper functioning condition (PFC) would apply to wetland habitats as well as riparian areas.

**Wilderness Characteristics:** Based on the BLM's consideration of citizen-submitted information the acreage of lands with wilderness characteristics was adjusted from 386,462 acres to 399,482 acres. A total of 16,393 acres would be managed to protect wilderness characteristics in the Proposed RMP as compared to 10,714 acres in the Preferred Alternative in the Draft RMP. Map 2.8 was corrected to show that lands with wilderness characteristics "managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics," would be managed as semi-primitive motorized under the recreation opportunity spectrum (ROS).

**Wildlife:** Additional language was added clarifying the State of Montana’s role in managing native wildlife populations, including proposals to reestablish native species such as black-footed ferrets and wild bison. The BLM would work cooperatively with Montana Fish, Wildlife and Parks (MFWP), U.S. Fish and Wildlife Service (USFWS), other agencies, partners, and cooperators in the development of wildlife restoration plans.

No new grazing permits authorizing sheep or goat allotments would be allowed within the MFWP Bighorn Sheep Management Zone.

**Special Status Species- Greater Sage-Grouse:** The HiLine District includes Greater Sage-Grouse (GRSG) habitat and the RMP reflects the following changes to decisions for the conservation of sage-grouse. The boundaries of the preliminary priority sage-grouse habitat were expanded in the Preferred Alternative to better match the core sage-grouse habitat delineated by MFWP. This increased the Greater Sage-Grouse Protection Priority Area from approximately 930,000 BLM surface acres to 1,006,000 acres and increased the size of the Grassland Bird/Greater Sage-Grouse Priority Area from 299,000 acres to 426,000 acres. In the Preferred Alternative of the Final EIS, the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Area are referred to as Priority Habitat Management Areas (PHMA). General sage-grouse habitat is referred to as General Habitat Management Areas (GHMA).

A 927,000 acre Sagebrush Focal Area (SFA) that represents a recognized “stronghold” for Greater Sage-Grouse was designated in south Phillips and Valley Counties. The SFA, as it relates to BLM land, approximates the Greater Sage-Grouse Protection Priority Area ACEC that was proposed and analyzed in Alternative B of the Draft EIS. An assessment of the Proposed RMP consistency with USFWS Conservation Objectives Team (COT) Report was completed (see Appendix M.3), and a summary comparison of alleviated threats to Greater Sage-Grouse by alternative was also prepared (see Table 2.30). A new sage-grouse mitigation strategy was added (Appendix M.4). A complete summary of new proposed sage-grouse habitat management actions is provided below in the Greater Sage-Grouse Habitat Management section.

Allocations for PHMA and GHMA – Allocations in the Proposed RMP/Final EIS provide more opportunities for uses in GHMA, while still maintaining conservation management by establishing screening criteria for project/activity review in GRSG habitat.

Changes in Allocations in Greater Sage-Grouse Habitat between the Draft RMP/EIS and the Proposed RMP/Final EIS are shown in Table 2.1.

<i>Resource/ Resource Allocation</i>	<i>General Habitat Management Areas</i>		<i>Priority Habitat Management Areas</i>		<i>Sagebrush Focal Areas</i>		<i>Alternative in Draft RMP/EIS that Analyzed New Allocation</i>		
	<i>Draft</i>	<i>Final</i>	<i>Draft</i>	<i>Final</i>	<i>Draft</i>	<i>Final</i>	<i>GHMA</i>	<i>PHMA</i>	<i>SFA</i>
Acres	371,000	290,000	1,229,000	1,433,000	0	927,000			
Solar ROWs	Open	Avoidance	Open	Exclusion	N/A*	Exclusion	**	**	**
Wind ROWs	Open	Avoidance	Exclusion	Exclusion	N/A	Exclusion	**	E	E
Major ROWs	Open	Avoidance	Open	Avoidance	N/A	Exclusion	**	C	B
Oil & Gas Lease Stipulations	NSO within 1 mile of leks	NSO within 0.6 mile of leks	NSO (WEMs)	NSO - Limited Exceptions & No waivers or modifications	N/A	NSO (No WEMs)	D	B	B
Salable Minerals	Open	Open	Open	Closed	N/A	Closed	A	B	B
Locatable Minerals	Open	Open	Open	Open	N/A	Recommended Withdrawal	A	A	B

\* N/A – Not applicable

\*\* Not analyzed in Draft RMP/EIS. Solar insolation levels in the planning area range from about 4.13 kWh/m<sup>2</sup>/day to 5.02 kWh/m<sup>2</sup>/day. Due to the unlikelihood of commercial solar development in the planning area, allocations for solar development were not addressed in the Draft RMP/EIS. Since ROWs for wind energy and large transmission lines and pipelines are discretionary actions, they were not specially limited in the Draft RMP/EIS in general habitat.

Sagebrush Focal Areas (SFAs) – These areas have been identified in the Proposed Plan based on recommendations in a USFWS memorandum, and, as to BLM land, are proposed to be managed as PHMA with the following additional management: recommended for withdrawal; NSO without waiver, exception, or modification for fluid mineral leasing; and prioritized for management and conservation actions including, but not limited to review of livestock grazing permits/leases. Alternative B identified recommendation for withdrawal; Alternative E identified NSO, and prioritization the review of grazing permits and leases, and analyzed the impacts of those decisions. As such, the management of these areas as SFAs and the impacts of the associated management decisions was addressed in the Draft RMP/EIS and is qualitatively within the spectrum of alternatives analyzed.

The BLM will manage these areas, totaling approximately 927,000 acres of BLM land within the HiLine planning area, as SFAs because of their importance to the conservation of the species range-wide. Specifically, SFAs include characteristics such as existing high-quality sagebrush habitat; highest breeding densities; have been identified as essential to conservation and persistence of the species; represent a preponderance of current federal ownership and in some cases are adjacent to protected areas that serve to anchor the conservation importance of the landscape. In light of the landscape level approach to sage grouse conservation provided through this planning effort and as defined by the characteristics set forth above, as well as additional considerations, including potential for impacts from climate change, fire and invasives, these areas have been identified as SFAs.

As noted in the Draft RMP/EIS, one of the goals/objectives of this planning effort is to protect both the habitat *and* the species. The habitat in the SFAs exhibits areas of high-quality sagebrush habitat, areas with highest breeding densities, and areas identified as essential to conservation and persistence of the species.

USGS Buffer Study – Included a management action to incorporate the lek buffer-distances identified in the USGS report titled *Conservation Buffer Distance Estimates for Greater Sage Grouse—A Review: USGS Open File Report 2014-1239* (Mainer, et al. 2014) during NEPA analysis at the implementation stage. Although the buffer report was not available at the time of the Draft RMP/EIS release, applying these buffers was addressed in the Draft RMP/EIS and is qualitatively within the spectrum of alternatives analyzed. Specifically, Alternative B identified and analyzed allocation restrictions such as closure to fluid minerals, recommendation for withdrawal, and exclusion of wind energy ROWs. Accordingly, the management decision to require lek buffers for development within certain habitat types is within the range of alternatives analyzed.

Adaptive Management – Identification of hard and soft adaptive management triggers for population and habitat and identified appropriate management responses. Chapter 2 of the Draft RMP/EIS identified that the BLM would further develop the adaptive management approach by identifying hard and soft triggers and responses. All of the adaptive management hard trigger responses were analyzed within the range of alternatives.

Monitoring and Disturbance – The monitoring framework was further refined in the Proposed RMP/Final EIS, and further clarification as to how disturbance cap calculations would be measured were developed for the Proposed RMP/Final EIS. During the public comment period, the BLM received comments on how monitoring and disturbance cap calculations would occur at implementation. The Draft RMP/EIS outlined the major components of the monitoring strategy, as well as provided a table portraying a list of anthropogenic disturbances that would count against the disturbance cap. A BLM Disturbance and Monitoring Sub-team further enhanced the two Appendices (M.2 and M.8) in the Proposed RMP/Final EIS.

Mitigation Strategy; Net Conservation Gain –The net conservation gain strategy is in response to the overall landscape-scale goal which is to enhance, conserve, and restore GRSG and its habitat. All of the action alternatives provided management actions to meet the landscape-scale goal.

WAFWA Management Zone Cumulative Effects Analysis on GRSG – A quantitative cumulative effects analysis for GRSG was included in the Proposed RMP/Final EIS. This analysis was completed to analyze the effects of management actions on GRSG at a biologically significant scale which was determined to be at the WAFWA Management Zone level. The Draft RMP/EIS, in Chapter 4, included a qualitative analysis and identified that a quantitative analysis would be completed for the Proposed RMP/Final EIS at the WAFWA Management Zone.

Public Comment on Draft RMP/EIS – Updated the Proposed RMP/Final EIS based on public comment received on the Draft RMP/EIS. Additional information on the public comments and the BLM’s responses can be found in Chapter 5 of this Proposed RMP/Final EIS.

NEPA requires agencies to prepare a supplement to the draft EIS: 1) if the agency makes substantial changes in the proposed action that are relevant to environmental concerns; or 2) if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. A supplement is not necessary if a newly formulated alternative is a minor variation of one of the alternatives and is qualitatively within the spectrum of alternatives analyzed in the Draft EIS.

The Proposed RMP includes components of the alternatives analyzed in the Draft EIS. Taken together, these components present a suite of management decisions that present a minor variation of the preferred alternative identified in the Draft RMP/EIS and are qualitatively within the spectrum of alternatives analyzed.

As such, the BLM has determined that the Proposed RMP is a minor variation of the preferred alternative and that the impacts of the Proposed RMP would not affect the human environment in a substantial manner or to a significant extent not already considered in the Draft EIS. The impacts disclosed in the Proposed RMP/Final EIS are similar or identical to those described Draft RMP/EIS.

## **Greater Sage-Grouse Habitat Management**

In August 2011, the BLM convened the Sage-Grouse National Technical Team (NTT), which brought together resource specialists and scientists from the BLM, state fish and wildlife agencies, the USFWS, the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), and the U.S. Geological Survey. The NTT developed a series of science-based conservation measures to be considered and analyzed through the land use planning process.

On December 9, 2011, a Notice of Availability was published in the Federal Register to initiate the BLM and U.S. Forest Service Greater Sage-Grouse Planning Strategy across ten western states, including California, Oregon, Nevada, Idaho, Utah, and Southwest Montana in the Great Basin Region and Northwest Colorado, Wyoming, Montana, South Dakota, and North Dakota in the Rocky Mountain Region. This EIS is one of fifteen separate sub-regional EISs that are being conducted to analyze and incorporate specific conservation measures across the range of the Greater Sage-Grouse, consistent with BLM policy.

The BLM Washington Office (WO) issued a National Greater Sage-Grouse Planning Strategy on December 27, 2011. WO Instruction Memorandum (IM) 2012-044 provides direction to the BLM on how to consider the NTT conservation measures in the land use planning process. The WO IM requires that applicable and appropriate conservation measures in the NTT report be analyzed in at least one alternative in the land use planning EIS and that a “hard look” be given to the conservation measures, as applicable to local ecological site variability. Alternatives B, C and E in the HiLine Proposed RMP/Final EIS contain conservation measures identified in the NTT report and incorporate the national strategy (WO IM 2012-044).

## **BLM Programs for Addressing Greater Sage-Grouse Threats**

The direction for managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS’ 2010 warranted but precluded finding on listing the GRSG, as well as their [Conservation Objectives Team \(COT\) Report](#) issued in 2013. The USFWS threats do not necessarily align with BLM resource program areas, and are often integrated into several different resource program areas. Table 2.2, USFWS and COT Report Identified Threats to Greater Sage-Grouse and Their Habitat and Applicable BLM Program Areas, provides a cross-walk between the 2010

warranted but precluded finding and COT-identified threats and the BLM program areas addressing these threats, with references to specific sections of the proposed plan.

<b>Table 2.2 Identified Threats to Greater Sage-Grouse and Their Habitat, and Applicable BLM Proposed Plan Resource Program Areas Addressing these Threats</b>		
<i>USFWS-Identified Threats to Greater Sage-Grouse and Its Habitat (2010 warranted but precluded finding)</i>	<i>COT Report-Identified Threats to Greater Sage-Grouse and Its Habitat (2013)</i>	<i>Applicable BLM Proposed Plan Resource Program Addressing Threat</i>
Wildland Fire	Fire	Wildland Fire Management (see Fire Management and Ecology section)
Invasive Species	Nonnative, Invasive Plants Species	Vegetation Management (see Vegetation – Rangeland section), Range Management (see Livestock Grazing section), Wildland Fire Management (see Fire Management and Ecology section), and Recreation (see Recreation section)
Oil and Gas For wind energy development, see <i>Infrastructure – power lines/pipelines, roads (below)</i>	Energy Development	Lands and Realty (see Lands and Realty section) and Fluid Minerals (see Fluid Minerals section)
Prescribed Fire	Sagebrush Removal	Vegetation Management (see Vegetation – Rangeland section) and Wildland Fire Management (see Fire Management and Ecology section)
Grazing	Grazing	Range Management (see Livestock Grazing section), Special Status Species (see Wildlife section), and Vegetation Management (see Vegetation – Rangeland section)
See <i>Grazing (above)</i>	Range Management Structures	Range Management (see Livestock Grazing section)
Conifer Encroachment	Pinyon and/or Juniper Expansion	Wildland Fire Management (see Fire Management and Ecology section) and Vegetation Management (see Vegetation – Rangeland section)
Agriculture and Urbanization	Agricultural Conversion and Ex-Urban Development	Lands and Realty (see Lands and Realty section)
Hard Rock Mining	Mining	Lands and Realty (see Lands and Realty section), Locatable Minerals (see Solid Minerals, Locatable section), Salable Minerals (see Solid Minerals, Salable section), and Non-energy Leasable Minerals (see Solid Minerals, Leasable section)
See <i>Infrastructure, Roads</i>	Recreation	Recreation (see Recreation section) and Trails and Travel Management (see OHV Use and Travel and Transportation Management section)
Infrastructure - Power lines/pipelines - Roads - Communication sites - Railroads Range improvements (see below)	Infrastructure	Lands and Realty (see Lands and Realty section) and Trails and Travel Management (see OHV Use and Travel and Transportation Management section)
Infrastructure – Range Improvements	Range Management Structures	Range Management (see Livestock Grazing section)
Water Developments	No similar threat identified	All applicable programs

<b>Table 2.2</b> <b>Identified Threats to Greater Sage-Grouse and Their Habitat, and Applicable BLM Proposed Plan Resource Program Areas Addressing these Threats</b>		
<i>USFWS-Identified Threats to Greater Sage-Grouse and Its Habitat (2010 warranted but precluded finding)</i>	<i>COT Report-Identified Threats to Greater Sage-Grouse and Its Habitat (2013)</i>	<i>Applicable BLM Proposed Plan Resource Program Addressing Threat</i>
Climate Change	No similar threat identified	<i>There is no BLM resource program in the proposed plan addressing this threat.</i>
Weather	No similar threat identified	<i>There is no BLM resource program in the proposed plan addressing this threat.</i>
Predation	No similar threat identified	All applicable programs
Disease	No similar threat identified	All applicable programs
Hunting	No similar threat identified	<i>There is no BLM resource program in the proposed plan addressing this threat.</i>
Contaminants	No similar threat identified	Public Health and Safety (see Public Safety section)

Source: USFWS 2010, 2013

### Range of Alternatives for Greater Sage-Grouse Management

The action alternatives (Alternatives B, C, D and E) offer a range of management approaches to maintain or increase Greater Sage-Grouse abundance and distribution of Greater Sage-Grouse by conserving, enhancing, or restoring the sagebrush ecosystem upon which Greater Sage-Grouse populations depend in collaboration with other conservation partners. The relative emphasis given to particular resources and resource uses differs as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law or are not tied to planning issues, there are typically few or no distinctions between alternatives.

The meaningful differences among the alternatives are described in the Current Management and Alternatives section of Chapter 2. This section also provides a complete description of the goals, objectives, and management actions for each alternative. In some instances, varying levels of management of Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) overlap a single area, or polygon, due to management prescriptions from different resource programs. In instances where varying levels of management prescriptions overlap a single polygon, the stricter of the management prescriptions would apply. Table 2.3 is a comparative summary of acres included in allocation alternatives for Greater Sage-Grouse management by resource/resource use.

<b>Table 2.3</b> <b>Comparative Summary of Allocation Decisions of the Draft Alternatives and Proposed Plan (Preferred Alternative) for Greater Sage-Grouse Management (Acres)*</b>					
<i>Resources/ Resource Uses</i>	<i>Alternative A (Current Mgmt)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alt.)</i>
Oil and Gas Leasing Stipulations **	<b>PHMA</b> Closed: 60,758 NSO: 215,441 Moderate: 868,099 Standard: 435,396	<b>PHMA</b> Closed: 1,597,942 NSO: 1,441 Moderate: 77 Standard: 0	<b>PHMA</b> Closed: 194,085 NSO: 554,327 Moderate: 33,925 Standard: 808,559	<b>PHMA</b> Closed: 60,758 NSO: 234,204 Moderate: 1,101,091 Standard: 165,601	<b>PHMA</b> Closed: 85,721 NSO: 1,514,224 Moderate: 0 Standard: 0
	<b>GHMA</b> Closed: 0 NSO: 22,043 Moderate: 226,689 Standard: 200,639	<b>GHMA</b> Closed: 449,638 NSO: 0 Moderate: 0 Standard: 0	<b>GHMA</b> Closed: 0 NSO: 185,000 Moderate: 18,326 Standard: 245,960	<b>GHMA</b> Closed: 0 NSO: 39,654 Moderate: 322,356 Standard: 64,242	<b>GHMA</b> Closed: 0 NSO: 75,152 Moderate: 371,509 Standard: 2,500

<b>Table 2.3</b> <b>Comparative Summary of Allocation Decisions of the Draft Alternatives and Proposed Plan (Preferred Alternative) for Greater Sage-Grouse Management (Acres)*</b>					
<i>Resources/ Resource Uses</i>	<i>Alternative A (Current Mgmt)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alt.)</i>
Solar ROWs	<b>PHMA</b> Exclusion: 0 Avoidance: 0 Open: 1,432,765	<b>PHMA</b> Exclusion: 0 Avoidance: 0 Open: 1,432,765	<b>PHMA</b> Exclusion: 0 Avoidance: 0 Open: 1,432,765	<b>PHMA</b> Exclusion: 0 Avoidance: 0 Open: 1,432,765	<b>PHMA</b> Exclusion: 1,432,688 Avoidance: 0 Open: 0
	<b>GHMA</b> Exclusion: 0 Avoidance: 0 Open: 289,756	<b>GHMA</b> Exclusion: 0 Avoidance: 0 Open: 289,756	<b>GHMA</b> Exclusion: 0 Avoidance: 0 Open: 289,756	<b>GHMA</b> Exclusion: 0 Avoidance: 0 Open: 289,756	<b>GHMA</b> Exclusion: 0 Avoidance: 289,756 Open: 0
Wind ROWs	<b>PHMA</b> Exclusion: 113,922 Avoidance: 0 Open: 1,318,843	<b>PHMA</b> Exclusion: 1,427,327 Avoidance: 5,025 Open: 391	<b>PHMA</b> Exclusion: 1,357,650 Avoidance: 71,559 Open: 3,555	<b>PHMA</b> Exclusion: 161,550 Avoidance: 1,241,128 Open: 30,087	<b>PHMA</b> Exclusion: 1,432,688 Avoidance: 0 Open: 0
	<b>GHMA</b> Exclusion: 10,284 Avoidance: 0 Open: 279,472	<b>GHMA</b> Exclusion: 274,836 Avoidance: 14,888 Open: 37	<b>GHMA</b> Exclusion: 18,661 Avoidance: 271,063 Open: 37	<b>GHMA</b> Exclusion: 15,174 Avoidance: 258,765 Open: 15,821	<b>GHMA</b> Exclusion: 0 Avoidance: 289,756 Open: 0
ROW Corridors	<b>PHMA</b> Open: 31,656	<b>PHMA</b> Open: 2,596	<b>PHMA</b> Open: 26,480	<b>PHMA</b> Open: 0	<b>PHMA</b> Open: 4,581
	<b>GHMA</b> Open: 3,648	<b>GHMA</b> Open: 5,065	<b>GHMA</b> Open: 12,918	<b>GHMA</b> Open: 0	<b>GHMA</b> Open: 4,562
General ROWs	<b>PHMA</b> Exclusion: 60,692 Avoidance: 0 Open: 1,372,072	<b>PHMA</b> Exclusion: 1,326,277 Avoidance: 98,226 Open: 8,261	<b>PHMA</b> Exclusion: 107,629 Avoidance: 1,004,061 Open: 321,074	<b>PHMA</b> Exclusion: 60,692 Avoidance: 98,074 Open: 1,273,998	<b>PHMA</b> Exclusion: 60,692 Avoidance: 1,367,399 Open: 4,597
	<b>GHMA</b> Exclusion: 0 Avoidance: 0 Open: 289,756	<b>GHMA</b> Exclusion: 11,947 Avoidance: 252,439 Open: 25,374	<b>GHMA</b> Exclusion: 0 Avoidance: 14,312 Open: 275,444	<b>GHMA</b> Exclusion: 0 Avoidance: 12,760 Open: 276,996	<b>GHMA</b> Exclusion: 0 Avoidance: 289,756 (major)*** Open: 289,756 (minor)
Mineral Material Sales and Permits	<b>PHMA</b> Open: 1,526,054 Closed: 60,732	<b>PHMA</b> Open: 148,490 Closed: 1,438,296	<b>PHMA</b> Open: 151,328 Closed: 1,435,458	<b>PHMA</b> Open: 1,445,058 Closed: 141,727	<b>PHMA</b> Open: 0 Closed: 1,586,786
	<b>GHMA</b> Open: 382,151 Closed: 0	<b>GHMA</b> Open: 367,200 Closed: 14,950	<b>GHMA</b> Open: 374,308 Closed: 7,842	<b>GHMA</b> Open: 372,242 Closed: 9,908	<b>GHMA</b> Open: 372,721 Closed: 9,429
Locatable Minerals	<b>PHMA</b> Open: 1,586,786 Closed: 0	<b>PHMA</b> Open: 119,312 Closed: 1,467,473	<b>PHMA</b> Open: 126,613 Closed: 1,460,172	<b>PHMA</b> Open: 1,449,517 Closed: 137,269	<b>PHMA</b> Open: 659,770 Closed: 927,016
	<b>GHMA</b> Open: 380,564 Closed: 1,586	<b>GHMA</b> Open: 367,200 Closed: 14,950	<b>GHMA</b> Open: 374,308 Closed: 7,842	<b>GHMA</b> Open: 37,3828 Closed: 8,322	<b>GHMA</b> Open: 382,759 Closed: 31

\* The PHMA/GHMA designations apply only to Alternative E, but are used in Alternatives A-D for comparative purposes.

\*\* Moderate stipulations include Controlled Surface Use and Timing limitations.

\*\*\* Major ROWs include high voltage transmission lines of 100 kilovolts or greater and pipelines 24 inches or greater in diameter.

## Development of the Proposed Plan for Greater Sage-Grouse Habitat Management

In developing the Proposed Plan for Greater Sage-Grouse management, the BLM made modifications to the Preferred Alternative identified in the Draft RMP/EIS. The modifications are based on public comments received on the Draft RMP/EIS, internal BLM review, new information and best available science, the need for clarification in the plans, and ongoing coordination with stakeholders across the range of the Greater Sage-Grouse. As a result, the Proposed Plan provides consistent Greater Sage-Grouse habitat management across the range, prioritizes development outside of Greater Sage-Grouse habitat, and focuses on a landscape-scale approach to conserving Greater Sage-Grouse habitat.

The BLM modified the Preferred Alternative, identified as Alternative E as presented in the Draft RMP/EIS, which is now considered the proposed plan for managing BLM-administered lands within the HiLine Planning Area.

Since release of the Draft RMP/EIS, the BLM has continued to work closely with a broad range of governmental partners, including Governors, State Fish and Game agencies, the USFWS, Indian tribes, county commissioners and many others. Through this cooperation, the BLM has developed a Proposed Plan that takes into account state, tribal, and local plans, policies, and strategies in accordance with applicable law, and contributes to the long-term conservation of the Greater Sage-Grouse. The BLM also received many substantive public comments on the Draft RMP (see Chapter 5), which greatly informed the BLM's development of the Proposed Plan for Greater Sage-Grouse management.

The BLM's Proposed Plan incorporates documents related to the conservation of Greater Sage-Grouse that have been released since the publication of the draft RMP/EIS. For example, this Proposed Plan considers the USGS November 21, 2014, report "*Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review*" (USGS 2014). Based on this document and the USFWS memorandum discussed below, the BLM is proposing to designate Sagebrush Focal Areas (SFAs) to further protect highly valuable habitat and is proposing to include lek-buffer distances when authorizing activities near leks. The BLM also updated the Proposed Plan to reflect new Greater Sage-Grouse state conservation strategies, including recent State Executive Orders.

On October 27, 2014, the USFWS provided the BLM and Forest Service a memorandum titled "[Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes](#)." The memorandum and associated maps provided by the USFWS identify areas that represent recognized "strongholds" for GRS that have been noted and referenced as having the highest densities of GRS and other criteria important for the persistence of the species. Within these areas, the BLM/FS identified Sagebrush Focal Areas (SFAs), which are PHMAs with the following additional management (Map 2.18):

- 1) Recommended for withdrawal from the Mining Law of 1872, subject to valid existing rights.
- 2) Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing.
- 3) Prioritized for management and conservation actions in these areas, including, but not limited to review of livestock grazing permits/leases (see livestock grazing section for additional actions).

The BLM has refined the Proposed Plan to provide a layered management approach that offers the highest level of protection for Greater Sage-Grouse in the most valuable habitat. Land use allocations in the Proposed Plan would limit or eliminate new surface disturbance in PHMA, while minimizing disturbance in GHMA. In addition to establishing protective land use allocations, the Proposed Plan for Greater Sage-Grouse management would implement a suite of management tools such as disturbance limits (see Special Status Species–Disturbance), Greater Sage-Grouse habitat objectives and monitoring (see *Special Status Species–Greater Sage-Grouse*), mitigation approaches (see Appendix M.4), adaptive management triggers and responses (see *Adaptive Management Strategy for Greater Sage-Grouse Habitat Management*), and lek buffer-distances (see Appendix M.5) throughout the range. These overlapping and reinforcing conservation measures will work in concert to improve Greater Sage-Grouse habitat condition and provide clarity and consistency on how the BLM will manage activities in Greater Sage-Grouse habitat.

## BLM Proposed Plan for Greater Sage-Grouse Management

Many of the proposed plan goals, objectives, management actions and allowable uses identified in this section originate from the specific BLM resource/program areas and have been determined to be applicable to the proposed management

of Greater Sage-Grouse habitat. The information presented below is the same as that presented in the Current Management and Alternatives section of Chapter 2 and has simply been consolidated here to depict how the agency proposes to manage Greater Sage-Grouse habitat.

- **Fire Management and Ecology**

- **Actions**

- The BLM would protect sensitive status species habitat (such as sage-grouse) during suppression and prescribed fire activities as described in this document and consistent with BLM Policy. Fire management-related activities, including prescribed fire, should preserve or enhance the habitat quality for sage-grouse and other sensitive status species, especially in priority habitat areas. Where applicable, the BLM would use BMPs (Appendix C) to design fuels treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns which benefit sage-grouse habitat (Appendix M.1). The use of heavy equipment during wildfire suppression and rehabilitation is allowable in sage-grouse habitat although cross-country travel should be limited through these areas. Wildfire suppression facilities shall be located to the extent possible in areas that minimize disturbance to high quality sage-grouse habitat.
- If prescribed fire is used in Greater Sage-Grouse habitat, the NEPA analysis for the Burn Plan will address:
  - why alternative techniques were not selected as viable options;
  - how Greater Sage-Grouse goals and objectives would be met by its use;
  - how the COT Report objectives would be addressed and met;
  - a risk assessment to address how potential threats to Greater Sage-Grouse habitat would be minimized.
- a) Prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect Greater Sage-Grouse habitat in PHMAs (e.g., creation of fuel breaks that would disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities).
- b) Prescribed fire in known winter range shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat would need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.

- **Fluid Minerals (oil, gas and geothermal)**

- **Objectives**

- Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 C.F.R. 3162.3-1(h).
- Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, minimize and apply compensatory mitigation to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to sage-grouse or its habitat

and will ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.

– **Actions**

- Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and Required Design Features (Appendix M.6) applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.
- Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.
- No waivers or modifications to a fluid mineral lease NSO stipulation will be granted in PHMAs. The authorized officer may grant an exception to a fluid mineral lease NSO stipulation only where the proposed action:
  - (i) would not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat; or,
  - (ii) is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to Greater Sage-Grouse.
- Exceptions based on conservation gain (ii) may only be considered in (a) PHMAs of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid federal fluid mineral lease existing as of the date of this RMP revision. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts.
- Any exceptions to this lease stipulation may be approved by the authorized officer only with the concurrence of the State Director. The authorized officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other Greater Sage-Grouse expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publically available at least quarterly.
- The Sagebrush Focal Areas are open to leasing with NSO with no waivers, exceptions, or modifications (WEMs).

• **Lands and Realty**

– **Actions**

- Land Tenure
  - Lands classified as priority habitat and general habitat (or habitat classification appropriate for the sub-region) for Greater Sage-Grouse will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands will provide a net conservation gain to the Greater Sage-Grouse; or (2) the agency can demonstrate that the disposal of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.

- Solar and Wind
  - PHMAs would be exclusion areas for solar and wind energy rights-of-way. GHMAs would be avoidance areas for solar and wind energy rights-of-way.
- **Livestock Grazing**
  - **Actions**
    - If monitoring data demonstrate that livestock use on an allotment in a priority Greater Sage-Grouse area is adversely affecting Greater Sage-Grouse or their habitat, the terms and conditions of grazing permits may be modified, or changes in active use could be considered in order to meet the standards for rangeland health as described in 43 CFR 4180 and the Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Appendix H) or to otherwise manage, maintain, or improve sage-grouse habitat.
    - Appropriate indicators and measurements specific to habitat for Greater Sage-Grouse, or any other wildlife species of concern, would be evaluated as part of standards and guidelines assessment and any necessary and appropriate habitat objectives specific to meeting the wildlife health standard for the site would be identified and incorporated into allotment management plans (AMPs) or the terms and conditions of livestock grazing permits
    - Processing Grazing Permits/Leases:
      - The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in Sagebrush Focal Areas (SFAs) followed by PHMAs outside of the SFAs. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.
      - The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFAs and PHMAs will include specific management thresholds based on the Greater Sage-Grouse habitat objectives Table 2.4, Desired Conditions for Greater Sage-Grouse Habitat, Land Health Standards (43 CFR 4180.2) and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis.
      - Allotments within SFAs, followed by those within PHMAs, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.
      - At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks.
- **Off-Highway Vehicle Use and Travel and Transportation Management**
  - **Actions**
    - The BLM would pursue opportunities to conduct restoration of roads, primitive roads and trails not designated during travel management planning, with priority given to areas with special management concerns. This includes primitive routes that have not been designated as “primitive routes” within WSAs and those that have been closed within areas that are being managed to protect or enhance wilderness characteristics or special status species such as the Greater Sage-Grouse. Restoration activities would be

done in accordance with guidelines described in Appendix J, Reclamation. Applicable requirements such as specific seed mixes or transplanting recommendations would also be applied where special status species or issues are a concern (e.g., mitigation for Greater Sage-Grouse).

- In PHMAs and GHMAs, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use).
  - Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence (43 CFR 8341.2). A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.
- **Recreation and Visitor Services**
    - **Actions**
      - In PHMA, do not construct new recreation facilities (e.g., campgrounds, trails, trailheads, staging areas) unless the development would have a net conservation gain to Greater Sage-Grouse habitat (such as concentrating recreation, diverting use away from sensitive areas, etc.), or unless the development is required for visitor health and safety or resource protection.
  - **Salable (Mineral Materials)**
    - **Actions**
      - PHMAs are closed to new mineral material sales. However, these areas remain “open” to free use permits and the expansion of existing active pits, only if the following criteria are met:
        - the activity is within the Biologically Significant Unit (BSU) and project area disturbance cap;
        - the activity is subject to the provisions set forth in the mitigation framework (Appendix M.1); and
        - all applicable required design features are applied and the activity is permissible under the specific subregional screening criteria (Appendix M.6).
  - **Solid Minerals – Leasable**
    - **Actions**
      - At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
  - **Solid Minerals – Locatable**
    - **Actions**
      - Within the limits of the Mining Laws, the BLM would apply conditions of approval (Appendix M) to Plans of Operations to prevent undue and unnecessary degradation to Greater Sage-Grouse habitat.

- A withdrawal would be proposed to segregate 927,074 acres from locatable mineral entry to protect the Sagebrush Focal Areas.

- **Vegetation – Rangeland**

- **Objectives**

- In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain a minimum of 70% of lands capable of producing sagebrush with 10 to 30% sagebrush canopy cover. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).

- **Actions**

- The BLM would consult with MFWP and seek concurrence regarding the anticipated benefits and/or impacts of any vegetation treatments that may impact wildlife habitat including priority sage-grouse habitat.
- Site-specific sage-grouse habitat and management objectives would be developed for BLM land within the Priority Habitat Management Areas. The actions needed to meet or progress toward meeting these objectives would be incorporated into the respective AMPs or livestock grazing permits as appropriate.
- Water developments would be installed and/or maintained to facilitate control of livestock use of vegetation, support other uses, and protect resource values. In order to minimize surface disturbance, have reliable water of better quality and not alter normal surface flow of water, alternative water developments would be emphasized before constructing new pits and reservoirs. The BLM would manage water developments within Greater Sage-Grouse habitat to reduce the spread of West Nile virus (Appendix M).
- The BLM would use land treatments to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives. Within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas, treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed as well as treatments that benefit other resources and do not adversely affect sage-grouse or their habitat.
- Rangeland health monitoring and assessments would be conducted within current staffing capabilities. The allotments within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas would be high priority for reassessment of land health standards and processing grazing permits as detailed in Appendix M. Rangeland health monitoring plans would be developed and implemented at the field office level.
- Conifers encroaching into sagebrush habitats would be removed. Treatments would be prioritized closest to occupied sage-grouse habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2. Use of site-specific analysis and principles like those included in the FIAT report (Chambers, et al. 2014) and other ongoing modeling efforts to address conifer encroachment would help refine the location for specific priority areas to be treated.

- **Vegetation – Riparian and Wetland**

- **Actions**

- The BLM would enhance or restore riparian composition and structure beyond PFC in riparian areas where and when appropriate for other resource values.
- Riparian areas with unique values (e.g., where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that requires surface disturbance and/or permanent surface occupancy).

- Grazing techniques and practices detailed in Appendix M.1 would be implemented to reduce hot season (summer) grazing on riparian and meadow complexes within the Priority Habitat Management Areas. Alternative water facilities would be installed to relieve grazing impacts on riparian areas inside of priority sage-grouse habitat.
- **Wildlife**
  - **Goals**
    - Identify, conserve, enhance and monitor rare, vulnerable, and representative habitats, communities, and ecosystems to ensure self-sustaining persistence of special status species.
    - Ensure that proposed land uses initiated or authorized by the BLM minimize damage to wildlife habitat and populations of special status species.
    - Maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in cooperation with other conservation partners.
  - **Objectives**
    - Manage priority wildlife habitat, special status species habitat, and populations using multi-scale assessments to identify current conditions, risks, and opportunities.
    - Maintain, enhance, or restore habitat availability and condition for special status species, and minimize habitat loss.
    - Protect priority Greater Sage-Grouse habitats from anthropogenic disturbances that would reduce distribution or abundance of sage-grouse.
    - Minimize fragmentation of large intact blocks of important wildlife habitat, particularly habitat areas for Greater Sage-Grouse and grassland birds.
  - **Actions**
    - The BLM would initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the Endangered Species Act (ESA).
    - The BLM would ensure habitat is provided for special status species (Tables 3.58 and 3.59 in Chapter 3). Proposed actions would not jeopardize the continued existence of a threatened or endangered species, or cause its habitat to be adversely modified or destroyed.
    - The BLM would continue cooperative participation in recovery plans, management plans and conservation strategies for special status species.
    - Fragmentation of large intact blocks of important wildlife habitat would be minimized, particularly in Priority Habitat Management Areas for Greater Sage-Grouse and grassland birds.
    - **Greater Sage-Grouse Priority Habitat Management Areas:**
      - The area would include a no surface occupancy (NSO) stipulation, without modifications or waivers, for oil and gas leasing unless there is a more restrictive stipulation in place to protect other resource values (e.g., no lease in the Mountain Plover ACEC).

- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2). Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M.1). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.
- The area would be an avoidance area for the issuance of rights-of-way except within designated corridors. Rights-of-way and similar facilities would be located adjacent to other facilities in a corridor where practical. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The area would remain available for livestock grazing. Site-specific Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate. Third order (fine-scale) and fourth order (site-scale) habitat indicators and characteristics for sage-grouse habitat seasonal use areas as described in the Sage-Grouse Habitat Assessment Framework (Stiver, et al. 2014) would be used to quantify habitat objectives.
- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- If prescribed fire is to be used for vegetation treatments, the burn plan will clearly indicate how COT objectives will be addressed and met by its use, and why alternative techniques were not selected.
- A Fire Risk Assessment would be completed for implementation of prescribed fire in relation to sage-grouse goals and objectives.
- The area would be an exclusion area for solar and wind energy rights-of-way.
- The area would be closed to solid leasable minerals, including non-energy leasable minerals.
- PHMAs are closed to new mineral material sales. However, these areas remain “open” to free use permits and the expansion of existing active pits, only if the following criteria are met:
  - the activity is within the Biologically Significant Unit (BSU) and project area disturbance cap;
  - the activity is subject to the provisions set forth in the mitigation framework (Appendix M.1); and
  - all applicable required design features are applied (Appendix M.6).
- New road construction would be limited to realignments of existing roads, if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for public safety. New road construction would include appropriate BMPs and mitigation (Appendices C and M).

- Existing roads, or realignments, would be used to access valid existing rights. If valid existing rights cannot be accessed via existing roads, then any new road would be constructed to the absolute minimum standard necessary with appropriate BMPs and mitigation (Appendices C and M).
- **Greater Sage-Grouse General Habitat Management Areas:**
  - Sagebrush habitats would be managed so that mid-scale (i.e. landscape level) shrub cover should include a mix of height classes with herbaceous understory adequate for meeting Greater Sage-Grouse requirements as well as habitat requirements for other sage-associated species such as mule deer and pronghorn.
  - Consideration would be given to incorporating fine-scale and site-specific Greater Sage-Grouse habitat and management objectives as appropriate to the area into AMPs or livestock grazing permits.
  - General Habitat Management Areas would be an avoidance area for solar and wind energy rights-of-way.
  - General Habitat Management Areas are open to minor ROWs and avoidance for major ROWs (high voltage transmission lines of 100 kilovolts or greater and pipelines 24 inches or greater in diameter).
  - General Habitat Management Areas are open to fluid mineral leasing with moderate and standard constraints.
  - Greater Sage-Grouse habitat suitability determinations would be based upon existing guidelines modified with data from recent habitat inventories and assessments in the planning area. Relevant range-wide research findings would also be included in habitat suitability determinations.
  - The BLM would emphasize restoration and rehabilitation of sagebrush in areas that are capable of, but no longer support sagebrush to contribute to the distribution and connectivity of habitat patches.
  - Greater Sage-Grouse habitats associated with silver sagebrush north of the Milk River would be enhanced to improve habitat conditions for nesting and brood rearing. Specific management actions would be derived from the results of ongoing research and best available science.
  - New distribution powerlines on BLM land within 1 mile of Greater Sage-Grouse leks would be buried.
  - Fragmentation of large intact blocks of habitat for special status species would be minimized, particularly in habitat protection areas for Greater Sage-Grouse and grassland birds.

## **Disturbance**

If the 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within GRSG PHMAs in any given Biologically Significant Unit, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the 1872 hard rock mining law, valid existing rights, etc.) would be permitted by BLM within GRSG PHMAs in any given Biologically Significant Unit until the disturbance has been reduced to less than the cap.

If the 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) or if anthropogenic disturbance and habitat loss associated with conversion to agricultural tillage or fire exceed 5% within a project analysis area in PHMAs, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the 1872 Mining Law, valid existing rights, etc.) will be permitted by BLM within PHMA in a project analysis area until the disturbance has been reduced to less than the cap. If the BLM determines that the State of Montana has adopted a GRSG Habitat Conservation Program that contains comparable components to those found in the State of Wyoming's Core Area Strategy including an all lands approach for calculating anthropogenic disturbances, a clear methodology for measuring the density of operations, and a fully operational Density Disturbance Calculation Tool, the 3% disturbance cap will be converted to a 5% cap for all sources of habitat alteration within a project analysis area.

Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in the Priority Habitat Management Area within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is co-located into an existing disturbed area.

**Greater Sage-Grouse:** Quantifiable vegetation objectives have been identified for sage-grouse breeding (leks, pre-laying, nesting and early brood-rearing) habitat on public land. The desired conditions for sage-grouse habitat presented in Table 2.4 are based on recommendations in current literature (Stiver, et al. 2014, Doherty, et al. 2014, Doherty, et al. 2011, Connelly, et al. 2000b, and Hagen, et al. 2007) and have been modified to more accurately reflect local conditions based on the vegetative potentials identified for ecological sites in Major Land Resource Areas 52C and 58A (USDA 2005). Table 2.4, Desired Conditions for Sage-Grouse Habitat, is to be used as a minimum to meet the applicable Land Health Standard in sage-grouse habitats.

<b>Table 2.4 Desired Conditions for Greater Sage-Grouse Habitat</b>					
<i>Habitat Indicators</i>	<i>Dominant Sagebrush, Soil Type and/or Ecological Site</i>				
	<i>Sagebrush on saline and/or sodic soils</i>	<i>Sagebrush on acid shale parent materials</i>	<i>Silver sagebrush on overflow sites</i>	<i>Silver sagebrush on all other soils/sites</i>	<i>Wyoming big sagebrush on all other soils/sites</i>
<b>Sage-Grouse Breeding Habitat</b>					
Sagebrush Canopy Cover	≥ 5%	≥ 5%	10-25%	≥ 2%	15-25%
Sagebrush Height	≥ 6 inches	≥ 6 inches	≥ 12 inches	≥ 12 inches	≥ 12 inches
Perennial Grass Heights	≥ 5 inches	≥ 7 inches	≥ 7 inches	≥ 7 inches	≥ 7 inches
Perennial Grass Canopy Cover	≥ 10%	≥ 10%	≥ 15%	≥ 15%	≥ 10%
Perennial Forb Canopy Cover	≥ 3%	≥ 3%	≥ 10%	≥ 5%	≥ 5%
Perennial Forb Availability	≥ 3 species	≥ 3 species	≥ 5 species	≥ 5 species	≥ 5 species
Riparian Areas & Wet Meadows	Proper Functioning Condition				
Lek Security	Rocky Mountain juniper and/or Ponderosa pine with less than 1% canopy cover on shrub/grassland ecological sites within 3 kilometers (1.86 miles) of occupied leks.				
<b>Sage-Grouse Winter Habitat</b>					
Sagebrush Availability	≥10% canopy and ≥10 inches visible above snow				

The assessment and evaluation of these objectives will follow the steps described in the Sage-Grouse Habitat Assessment Framework (Stiver, et al. 2014).

These habitat objectives in Table 2.4 summarize the characteristics that research has found represent the seasonal habitat needs for Greater Sage-Grouse. The specific seasonal components identified in the table were adjusted based on local science and monitoring data to define the range of characteristics used in this subregion. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the landscape that indicate the seasonal habitats used by sage-grouse. These habitat indicators are consistent with the rangeland health indicators used by the BLM.

The habitat objectives will be part of the sage-grouse habitat assessment to be used during land health evaluations (see Monitoring Framework, Appendix M.2). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.

All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use.

## Adaptive Management Strategy for Greater Sage-Grouse Habitat Management

Adaptive Management is a decision process that promotes flexible resource management decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a ‘trial and error’ process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. On February 1, 2008, the Department of the Interior published its Adaptive Management Implementation Policy (522 DM 1). The adaptive management strategy presented within this EIS complies with this policy and direction.

In relation to the BLM’s National Greater Sage-Grouse Planning Strategy, adaptive management will help identify if sage-grouse conservation measures presented in this EIS contain the needed level of certainty for effectiveness. Principles of adaptive management will be incorporated into the conservation measures in the plan to ameliorate threats to a species, thereby increasing the likelihood that the conservation measure and plan will be effective in reducing threats to that species. The following provides the BLM adaptive management strategy for the HiLine Proposed RMP/Final EIS.

If the BLM finds that the State of Montana is implementing a GRSG Habitat Conservation Program that is effectively conserving the GRSG, in addition to the change in disturbance cap noted above, the BLM will review the management goals and objectives to determine if they are being met and whether amendment of the BLM plan is appropriate to achieve consistent and effective conservation and GRSG management across all lands regardless of ownership.

In making amendments to this plan, the BLM will coordinate with the USFWS as the BLM continues to meet its objective of conserving, enhancing and restoring GRSG habitat by reducing, minimizing or eliminating threats to that habitat.

### Adaptive Management and Monitoring

This EIS contains a monitoring framework plan (Appendix M.2) that includes an effectiveness monitoring component. The agencies intend to use the data collected from the effectiveness monitoring to identify any changes in habitat conditions related to the goals and objectives of the plan and other range-wide conservation strategies (U.S. Department of the Interior 2004; Stiver, et al. 2006; USFWS 2013). The information collected through the Monitoring Framework Plan outlined in Appendix M.2 will be used by the BLM to determine when adaptive management hard and soft triggers (discussed below) are met.

Montana State Executive Order No.10-2014 contains the following language regarding adaptive management:

**Monitoring/Adaptive Response:** *Proponents of new projects are expected to coordinate with the Program and the permitting agency to determine which leks need to be monitored and what data should be collected and reported. Generally, monitoring plans should include an evaluation of affected leks as well as reference leks for control purposes. If declines in affected leks (using a three-year running average during any five year period relative to trends on reference leks) are determined to be caused by the project, the operator will propose adaptive management responses to increase the number of birds. If the operator cannot demonstrate a restoration of bird numbers to baseline levels (established by pre-disturbance surveys, reference surveys and taking into account regional and statewide trends) within three years, operations will cease until such numbers are achieved. In the interim, the operator, permitting agency and the Program will create additional adaptive management efforts to restore sage grouse population numbers and baseline numbers, as well as restore project*

*operations. Natural occurrences and their effects on sage grouse and sagebrush habitat will be considered in all cases. The [Montana Sage Grouse Oversight Team] shall review the work being conducted around this issue by the State of Wyoming and the U.S. Fish and Wildlife Service, and shall recommend any further adjustments to this stipulation that may be appropriate.*

## **Montana BLM Greater Sage-Grouse Adaptive Management Plan**

The Greater Sage-Grouse adaptive management plan provides regulatory assurance that a means of addressing and responding to unintended negative impacts to greater sage-grouse and its habitat is in place before consequences become severe or irreversible. This adaptive management plan:

- utilizes science-based soft and hard adaptive management triggers, and
- addresses multiple scales of data.

### **Adaptive Management Triggers**

Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting Greater Sage-Grouse conservation objectives. The BLM will use soft and hard triggers.

#### ***Soft Triggers:***

Soft triggers are indicators that management or specific activities may not be achieving the intended results of conservation action. The soft trigger is any negative deviation from normal trends in habitat or population in any given year, or if observed across two to three consecutive years. Metrics include, but are not limited to, annual lek counts, wing counts, aerial surveys, habitat monitoring, and density disturbance calculation tool (DDCT) evaluations. BLM field offices, local MFWP offices, and sage-grouse working groups will evaluate the metrics. The purpose of these strategies is to address localized Greater Sage-Grouse population and habitat changes by providing the framework in which management will change if monitoring identifies negative population and habitat anomalies.

Each major project (EIS level) will include adaptive management strategies in support of the population management objectives for Greater Sage-Grouse set by the State of Montana, and will be consistent with this Greater Sage-Grouse Adaptive Management Plan. These adaptive management strategies will be developed in partnership with the State of Montana, project proponents, partners, and stakeholders, incorporating the best available science.

#### ***Soft Triggers Response:***

Soft triggers require immediate monitoring and surveillance to determine causal factors and may require curtailment of activities in the short or long term, as allowed by law. The project level adaptive management strategies will identify appropriate responses where the project's activities are identified as the causal factor. The BLM and the adaptive management group will implement an appropriate response strategy to address causal factors not addressed by specific project adaptive management strategies, not attributable to a specific project, or to make adjustments at a larger regional or state-wide level.

#### ***Hard Triggers:***

Hard triggers are indicators that management is not achieving desired conservation results. Hard triggers would be considered a catastrophic indicator that the species is not responding to conservation actions, or that a larger-scale impact is having a negative effect.

Hard triggers are focused on three metrics: 1) number of active leks, 2) acres of available habitat, and 3) population trends based on annual lek counts.

Within the context of normal population variables, hard triggers shall be determined to take effect when two of the three metrics exceeds 60% of normal variability for the BSU in a single year, or when any of the three metrics exceeds 40% of normal variability for a three year time period within a five-year range of analysis. A minimum of three years is used to

determine trends, with a five- year period preferred to allow determination of three actual time periods (Y1-2-3, Y2-3-4, Y3-4-5). Baseline population estimates are established by pre-disturbance surveys, reference surveys and account for regional and statewide trends in population levels. Population count data in Montana are maintained by MFWP. Estimates of population are determined based upon survey protocols determined by MFWP, and are implemented consistently throughout the state. Population counts are tracked for individual leks and are then summarized for each PHMA.

**Hard Trigger Response:**

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from Greater Sage-Grouse conservation objectives set forth in the BLM plans. Upon determination that a hard trigger has been tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions within the Biologically Significant Unit for a period of 90 days. The Proposed Plan/Final EIS also includes a “hard-wired” plan-level response; that is, it provides that, upon reaching the trigger, a more restrictive alternative, or an appropriate component of a more restrictive alternative analyzed in the EIS will be implemented without further action by the BLM. Specific “hard-wired” changes in management are identified in Table 2.5, Specific Management Responses. In addition to the specific changes identified in Table 2.5, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists and managers from multiple agencies including the USFWS, NRCS, and the State of Montana, to determine the causal factor(s) and implement a corrective strategy. The corrective strategy would include the changes identified in Table 2.5, and could also include the need to amend or revise the RMP to address the situation and modify management accordingly.

<i>Program</i>	<i>Adaptive Management Response</i>
Sage-Grouse Management	Areas within and adjacent to PHMA where a hard trigger has been reached would be the top priority for regional mitigation habitat restoration and fuels reduction treatments.
Vegetation Management	PHMA would be the top priority for regional mitigation, habitat restoration and fuels reduction treatments.
Wildland Fire Management	Reassess Greater Sage-Grouse habitat needs to determine if priorities for at risk habitats, fuels management areas, preparedness, suppression and restoration have changed.
Livestock Grazing	For areas not achieving the Greater Sage-Grouse habitat objectives due to grazing, apply adjustments to livestock grazing to achieve objectives.
Rights of Way – Existing Corridors	Retain the corridors as mapped, but limit the size of new lines within the corridors to same as existing structures, or not larger than 138kV.
Wind Energy Development	No change from Proposed Plan.
Industrial Solar	No change from Proposed Plan.
Comprehensive Travel and Transportation Management	If travel management planning has not been completed within Greater Sage-Grouse habitat, PHMA areas where the hard trigger was met would be the highest priority for future travel management planning efforts.  If travel management has been completed within Greater Sage-Grouse habitat in the PHMA where the hard trigger was met, re-evaluate designated routes to determine their effects on Greater Sage-Grouse. If routes are found to be causing population-level impacts, revise their designation status to reduce the effect.
Fluid Minerals	No change from Proposed Plan.
Locatable Minerals	No change from Proposed Plan.
Salable Minerals	No change from Proposed Plan.
Non-energy Leasable Minerals	No change from Proposed Plan.

In addition to implementing the hard wired plan-level response, in the event that new scientific information becomes available demonstrating that the hard wired response would be insufficient to stop a severe deviation from sage-grouse conservation objectives set forth in the BLM plans, the BLM will immediately implement a formal directive to protect Greater Sage-Grouse and its habitat and to ensure that conservation options are not foreclosed. To the extent that it is supported scientifically, this formal directive will be drawn from the range of alternatives analyzed in the RMP Amendments/Revisions.

When a hard trigger is hit in a BSU, including those that cross state lines, the WAFWA Management Zone Greater Sage-Grouse Conservation Team will convene to determine the causal factor, put project level responses in place, as appropriate and discuss further appropriate actions to be applied. Adoption of any further actions at the plan level may require initiating a plan amendment process.

#### ***Lek Buffers:***

In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM would apply the lek buffer-distances identified in the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review ([Open File Report 2014-1239](#)) in accordance with Appendix M.5.

## **Regional Mitigation for Greater Sage-Grouse Habitat Management**

Consistent with the proposed plan's goal outlined in Table 2.4, the intent of the HiLine Proposed RMP is to provide a net conservation gain to the species. To do so, in all sage-grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Refer to Appendix M.1, Mitigation Measures and Conservation Actions for Greater Sage-Grouse Habitat, as well as the other Appendices in the M-series for more details in this regard. This is also consistent with BLM Manual 6840 – Special Status Species Management, Section .02B, which states “to initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of the need for listing of these species under the ESA.”

*Actions which result in habitat loss and degradation* include those identified as threats which contribute to Greater Sage-Grouse disturbance as identified by the U.S. Fish and Wildlife Service in its 2010 listing decision (75 FR 13910) and shown in Table 2 in Appendix M.2, Greater Sage-Grouse Monitoring Framework and those identified in the COT report and shown in Table 2.2, Identified Threats to Greater Sage-Grouse and Their Habitat, and Applicable BLM Proposed Plan Resource Program Areas Addressing these Threats.

*Mitigation Standards.* In undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Mitigation will follow the regulations from the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20; e.g., avoid, minimize, and compensate), hereafter referred to as the mitigation hierarchy. If impacts from BLM management actions and authorized third-party actions that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation (see the concepts of durability, timeliness, and additionality as described further in Appendix M.4, Greater Sage-Grouse Mitigation).

*Greater Sage-Grouse Conservation Team.* The BLM will establish a Western Association of Fish and Wildlife Agencies (WAFWA) Management Zone Greater Sage-Grouse Conservation Team (hereafter, Team) to help guide the conservation of Greater Sage-Grouse, within 90 days of the issuance of the Record of Decision. This Team will develop a WAFWA Management Zone Regional Mitigation Strategy (hereafter, Regional Mitigation Strategy). The Team will also compile and report on monitoring data (including data on habitat condition, population trends, and mitigation effectiveness) from States across the WAFWA Management Zone (see Monitoring section). Subsequently, the Team will use these data to either modify the appropriate Regional Mitigation Strategy or recommend adaptive management actions (see the Adaptive Management discussion in the Implementation and Monitoring section).

The BLM will invite governmental and tribal partners to participate in this Team, including the State Wildlife Agency and U.S. Fish and Wildlife Service, in compliance with the exemptions provided for committees defined in the Federal Advisory Committee Act and the regulations that implement that act. The BLM will strive for a collaborative and unified approach between Federal agencies (e.g. USFWS, BLM, and USFS), tribal governments, state and local government(s), and other stakeholders for Greater Sage-Grouse conservation. The Team will provide advice, and will not make any decisions that impact federal lands. The BLM will remain responsible for making decisions that affect federal lands in the planning area.

*Developing a Regional Mitigation Strategy.* The Team will develop a Regional Mitigation Strategy to inform the mitigation components of NEPA analyses for BLM management actions and third-party actions that result in habitat loss and degradation. The Strategy will be developed within one year of the issuance of the Record of Decision. The BLM's Regional Mitigation Manual MS-1794 will serve as a framework for developing the Regional Mitigation Strategy. The Regional Mitigation Strategy will be applicable to the States/Field Offices/Forests within the WAFWA Management Zone's boundaries. Regional mitigation is a landscape-scale approach to mitigating impacts to resources. This involves anticipating future mitigation needs and strategically identifying mitigation sites and measures that can provide a net conservation gain to the species. The Regional Mitigation Strategy developed by the Team will elaborate on the components identified above (i.e., avoidance, minimization, and compensation; additionality, timeliness, and durability) and further explained in Appendix M.4.

In the time period before the Strategy is developed, the BLM will consider regional conditions, trends, and sites, to the greatest extent possible, when applying the mitigation hierarchy and will ensure that mitigation is consistent with the standards set forth in the first paragraph of this section.

*Incorporating the Regional Mitigation Strategy into NEPA Analyses.* The BLM will include the avoidance, minimization, and compensatory recommendations from the Regional Mitigation Strategy in one or more of the NEPA analysis' alternatives for BLM management actions and third-party actions that result in habitat loss and degradation and the appropriate mitigation actions will be carried forward into the decision.

*Implementing a Compensatory Mitigation Program.* Consistent with the principles identified above, the BLM needs to ensure that compensatory mitigation is strategically implemented to provide a net conservation gain to the species, as identified in the Regional Mitigation Strategy. In order to align with existing compensatory mitigation efforts, this compensatory mitigation program will be implemented at a State-level (as opposed to a WAFWA Management Zone, a Field Office, or a Forest), in collaboration with our partners (e.g., federal, tribal, and state agencies).

To ensure transparent and effective management of the compensatory mitigation funds, the BLM will enter into a contract or agreement with a third party to help manage the state-level compensatory mitigation funds, within one year of the issuance of the Record of Decision. The selection of the third-party compensatory mitigation administrator will conform to all relevant laws, regulations, and policies. The BLM will remain responsible for making decisions that affect federal lands.

## **Monitoring Framework for Greater Sage-Grouse Habitat Management**

The BLM's planning regulations, specifically 43 CFR 1610.4-9, require that land use plans establish intervals and standards for monitoring based on the sensitivity of the resource decisions. Land use plan monitoring is the process of tracking the implementation of land use plan decisions (implementation monitoring) and collecting data/information necessary to evaluate the effectiveness of land use plan decisions (effectiveness monitoring). For Greater Sage-Grouse,

these types of monitoring are also described in the criteria found in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (50 CFR Vol. 68, No. 60). One of the Policy for Evaluation of Conservation Efforts When Making Listing Decisions criteria evaluates whether provisions for monitoring and reporting progress on implementation (based on compliance with the implementation schedule) and effectiveness (based on evaluation of quantifiable parameters) of the conservation effort are provided.

A guiding principle in the BLM National Sage-Grouse Habitat Conservation Strategy (BLM 2004a) is that “the Bureau is committed to sage-grouse and sagebrush conservation and will continue to adjust and adapt our National Sage-grouse Strategy as new information, science and monitoring results evaluate effectiveness over time.” In keeping with the WAFWA Sage-grouse Comprehensive Conservation Strategy (Stiver, et al. 2006) and the Greater Sage-grouse Conservation Objectives: Final Report (USFWS 2013), the BLM will monitor implementation and effectiveness of conservation measures in Greater Sage-Grouse habitats.

On March 5, 2010, USFWS’ 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered were posted as a Federal Register notice (75 Federal Register 13910-14014, March 23, 2010). This notice stated:

“...the information collected by BLM could not be used to make broad generalizations about the status of rangelands and management actions. There was a lack of consistency across the range in how questions were interpreted and answered for the data call, which limited our ability to use the results to understand habitat conditions for sage-grouse on BLM lands.”

Standardization of monitoring methods and implementation of a defensible monitoring approach (within and across jurisdictions) will resolve this situation. The BLM, Forest Service, and other conservation partners use the resulting information to guide implementation of conservation activities.

Monitoring strategies for Greater Sage-Grouse habitat and populations must be collaborative, as habitat occurs across jurisdictional boundaries (52 percent on BLM-administered lands, 31 percent on private lands, 8 percent on National Forest System lands, 5 percent on state lands, 4 percent on tribal and other federal lands) (75 Federal Register 13910, March 23, 2010), and state fish and wildlife agencies have primary responsibility for population level wildlife management, including population monitoring. Therefore, population efforts will continue to be conducted in partnership with state fish and wildlife agencies. The BLM and Forest Service have finalized a monitoring framework, which can be found in Appendix M.2. This framework describes the process that the BLM and Forest Service will use to monitor implementation and effectiveness of RMP/LUP decisions. The monitoring framework includes methods, data standards, and intervals of monitoring at broad and mid scales; consistent indicators to measure and metric descriptions for each of the scales; analysis and reporting methods; and the incorporation of monitoring results into adaptive management. The need for fine-scale and site-specific habitat monitoring may vary by area depending on existing conditions, habitat variability, threats, and land health. Indicators at the fine and site scales will be consistent with the Habitat Assessment Framework; however, the values for the indicators could be adjusted for regional conditions.

More specifically, the framework discusses how the BLM and Forest Service will monitor and track implementation and effectiveness of planning decisions (e.g., tracking of waivers, modifications, site-level actions). The two agencies will monitor the effectiveness of RMP/LUP decisions in meeting management and conservation objectives. Effectiveness monitoring will include monitoring disturbance in habitats, as well as landscape habitat attributes. To monitor habitats, the BLM and Forest Service will measure and track attributes of occupied habitat, priority habitat, and general habitat at the broad scale, and attributes of habitat availability, patch size, connectivity, linkage/ connectivity habitat, edge effect, and anthropogenic disturbances at the mid-scale. Disturbance monitoring will measure and track changes in the amount of sagebrush in the landscape and changes in the anthropogenic footprint, including change energy development density. The framework also includes methodology for analysis and reporting for field offices, states, ranger districts, BLM districts, National Forests, and Forest regions, including geospatial and tabular data for disturbance mapping (e.g., geospatial footprint of new permitted disturbances) and management actions effectiveness.

## Current Management and Alternatives

The following sections provide a detailed description of the five alternatives for the planning area. The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS. In order to improve the readability of this document and to enable the reader to easily locate referenced tables/sections, the resource discussions are organized alphabetically. The resource sections are noted in the document footers, along with the chapter and page numbers. Each resource section includes Decisions Common to All Alternatives along with the description by alternative if applicable. Not all resource sections have a range of alternatives because management of the resource would be the same for each alternative.

## Air Resources and Climate Change

### Goals

*Protect air resources, including air quality and air quality related values (AQRVs).*

*Improve greenhouse gas (GHG) emission reduction methods for BLM-authorized activities.*

## Objectives

Reduce air pollutant and GHG emissions from BLM-authorized activities, while recognizing the multiple use-sustained yield mission of the BLM.

Comply with national and state air resource standards to protect existing air quality and AQRVs.

Work with the Montana Department of Environmental Quality (MDEQ) to coordinate data exchange and air quality protection strategies.

## Decisions Common to All Alternatives

The BLM would not authorize management actions that would exceed applicable Montana and Federal Ambient Air Quality Standards (MAAQS, NAAQS).

Actions authorized on BLM land and federal minerals would comply with Clean Air Act requirements, including the State of Montana Air Quality Implementation Plan, through the use of best management practices (BMPs) (Appendix C) and the Air Resource Management Plan (Appendix B).

To ensure actions authorized by the BLM comply with air quality regulations, requirements and implementation plans, the BLM would evaluate effects to air quality at the activity planning level, and prepare detailed monitoring and mitigation prescriptions for proposals that could degrade air resources.

The BLM would coordinate with the Montana/Idaho Airshed Group, Smoke Monitoring Unit and the appropriate airshed zone coordinator to ensure that prescribed fires comply with smoke management rules and regulations. The BLM would use timing and atmospheric dispersal to control particulate emissions and record and review data on fire prescriptions and mitigation measures (location, size, and date of burns).

### **Air Quality Standards**

Primary standards are designed to protect human health, including sensitive populations, such as people with asthma and emphysema, children, and senior citizens. Primary standards were designed for the immediate protection of public health, with an adequate margin of safety, regardless of the cost.

Secondary standards are designed to protect public welfare, including soils, water, crops, vegetation, buildings, property, animals, wildlife, weather, visibility, and other economic, aesthetic, and ecological values, as well as personal comfort and well-being. Secondary standards were established to protect the public from known or anticipated effects of air pollution.

For oil and gas operations, venting or flaring of hydrocarbon gas requires approval under provisions of Notice to Lessee – 4A (NTL-4A). The Montana Department of Environmental Quality (DEQ), Air Quality Protection Division, monitors this activity for compliance. The use of green or flareless well completions as a BMP for oil and gas operations would be encouraged to reduce GHG emissions.

## Cultural Resources

### Goal

*Protect, preserve and interpret the cultural resources within the planning area and ensure they are available for appropriate uses by present and future generations.*

## Objectives

Manage important archaeological and historical sites, or areas where concentrations of cultural resources occur, for their use based on the nature of the cultural resource and relative preservation value.

Reduce imminent threats from natural or human-caused deterioration, and/or reduce potential conflicts with other resource uses.

Promote stewardship, conservation, and appreciation of cultural resources through educational and public outreach programs in accordance with the BLM Heritage Education Program.

## Decisions Common to All Alternatives

Protection for all cultural resources would occur according to federal laws and BLM regulations and agreements. The BLM must evaluate all proposed actions, initiated or authorized by the BLM, to determine potential effects to historic properties. This evaluation process occurs under Section 106 of the National Historic Preservation Act (NHPA). The BLM must determine, based on inventory and evaluation data, whether the proposed action could impact important cultural resources and, if necessary, take steps to avoid or mitigate possible impacts.

The BLM would mitigate impacts to cultural resources from authorized uses through project abandonment, redesign, and if necessary, data recovery investigations in accordance with the national Programmatic Agreement among the BLM, Advisory Council on Historic Preservation, and National Conference of State Historic Preservation Officers (BLM 2012a); and the State Protocol Agreement between the BLM Montana State Director and the Montana State Historic Preservation Office (BLM 1998a).

Several steps are available to mitigate an occurrence of a potential adverse impact to cultural resources, including a requirement for on-the-ground inventory prior to proposed projects that include surface-disturbing activities; avoidance or modification of the proposed project; and if effective modification cannot be reached, excavation for archaeological information retrieval and/or consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation. Further, consultation with knowledgeable tribal elders is used to identify important cultural properties which might otherwise be missed by a standard archaeological inventory.

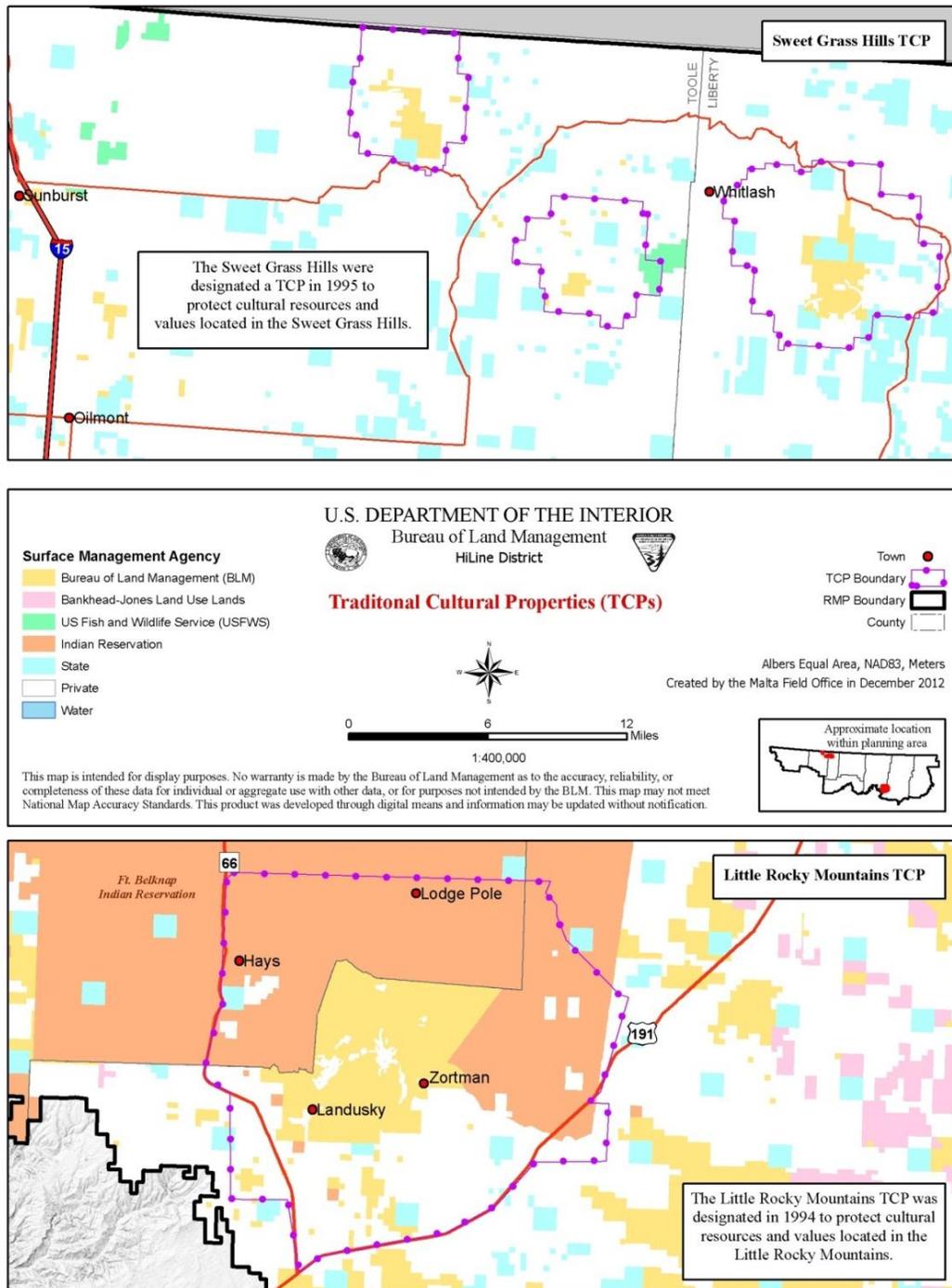
To consider potential effects to historic properties where a federal action is occurring, the BLM would comply with Section 106 of the NHPA. Commonly, a Class III survey (inventory) is required prior to surface disturbance to identify significant cultural properties.

The BLM would consult with Indian tribes when its actions have the potential to affect areas of concern to the practitioners of traditional religions. The activities of concern are those that might degrade the visual or aesthetic nature of an area, or cause the loss of plant species or other resources important to traditional uses. The BLM is required to consult with traditional religious practitioners on policies and procedures to ensure they are considered when

implementing agency actions. This includes consultations with federally recognized Indian tribes as sovereign nations in a government-to-government relationship with the United States.

Potential effects to the Little Rocky Mountains and Sweet Grass Hills Traditional Cultural Properties (TCPs) would be avoided, if possible, or mitigated (Figure 2.1). Specific management for the TCPs is addressed under the alternatives section below.

**Figure 2.1  
Traditional Cultural Properties**



To promote the appreciation of cultural resources the BLM would continue to provide traveling museum exhibits consisting of replica artifacts from local sites. These exhibits would provide outreach and local identification with cultural resources across the planning area.

The BLM would monitor cultural sites to ensure that sites retain integrity and are not being vandalized or degraded through other processes.

The Big Bend of the Milk River, Kevin Rim, and Sweet Grass Hills Areas of Critical Environmental Concern (ACECs), along with the potential Little Rocky Mountains ACEC, contain diverse cultural resources and historic sites of significance. Special management for these areas is addressed in the Special Designations section of Chapter 2.

## National Register of Historic Places

Cultural sites with characteristics that make them eligible for the National Register of Historic Places (NRHP) require additional attention beyond recordation. The NRHP sites would be categorized for use allocations based on their nature and relative preservation value, and appropriately managed.

Pursuant to Section 110 of the National Historic Preservation Act, the BLM would identify other cultural resources in the planning area by defining priority geographic areas for new field inventory based on a probability for unrecorded significant resources. Any new National Register eligible sites recorded would be categorized in use allocations and specific management would be prescribed.

### Use Allocation Categories

Cultural resources within the planning area are diverse, extensive and rich in history. Sacred sites consist of vision quest sites, graves, ceremonial sites and spiritual sites. Prehistoric cultural sites consist of habitation/camp sites such as stone circle sites, bison kill sites, cairns, lithic scatters, quarries, animal processing sites, etc. Historic sites range from early railroads, homestead sites, early farming and ranching infrastructure, town sites, building foundations, and dumps, to sites associated with early mining.

Categorizing cultural resources according to their potential uses is the culmination of the identification process and the bridge to protection and utilization decisions. Use categories establish what needs to be protected, and when or how use should be authorized. All cultural resources have uses, but not all should be used in the same way (BLM 8110 Manual, 2004).

All recorded cultural resources would be assessed according to six use categories for prehistoric and historic resources, as identified below:

- **Scientific Use:** This category applies to any cultural property determined to be available for consideration as the subject of scientific or historical study at the present time, using currently available research techniques. Study includes methods that would result in the property's physical alteration or destruction. This category applies almost entirely to prehistoric and historic archaeological properties, where the method of use is generally archaeological excavation, controlled surface collection, and/or controlled recordation (data recovery). Recommendations to allocate individual properties to this use must be based on documentation of the kinds of data the property is thought to contain and the data's importance for pursuing specified research topics. Properties in this category need not be conserved in the face of a research or data recovery (mitigation) proposal that would make adequate and appropriate use of the property's research importance. Scientific Use properties include sites similar in composition to:
  - **Beaucoup Site (24PH188/189).** This site complex is important because it contains a bison kill site, extensive drive lines, stone circle sites and unusual ceremonial features. The site is part of the Big Bend of the Milk River ACEC.
  - **Fantasy Complex (24PH1206).** This site is a kill site complex indicating use over several time periods.

- Kevin Rim (Toole County). This site complex consists of extensive prehistoric stone feature sites and drive lines with potential bison kill sites located on a unique geological bluff.
- Laundry Springs (24VL1679). This site has buried features and is located next to a natural spring. Evidence shows that the site was much larger at one time before early homesteading and farming.
- Lonesome Lake Complex (Chouteau County). This site is important because it contains over 1,000 stone circles along with other stone features and prehistoric sites.
- **Public Use:** This category may be applied to any cultural property found to be appropriate for use as an interpretive exhibit in place, or for related educational and recreational uses by members of the general public. The category may also be applied to buildings suitable for continued use or adaptive use, for example as staff housing or administrative facilities at a visitor contact or interpretive site. Public Use properties include sites of similar composition to:
  - Henry Smith (24PH794). This site complex is important because it contains a bison kill site, extensive drive lines, stone circle features and unique stone effigies. The site is part of the Big Bend of the Milk River ACEC.
  - Little Rocky Mountains Ranger Station (24PH2151). The Little Rocky Mountains Ranger Station was built in 1908 by the Forest Service as a Fire Lookout in the Little Rocky Mountains. It is the only station of its kind in the HiLine District. The cabin was also used as an administrative site for the BLM Fire Program.
- **Conservation for Future Use:** This category is reserved for any unusual cultural property which, because of scarcity, a research potential that surpasses the current state of the art, singular historic importance, cultural importance, architectural interest, or comparable reasons, is not currently available for consideration as the subject of scientific or historical study that would result in its physical alteration. A cultural property included in this category is deemed worthy of segregation from all other land or resource uses, including cultural resource uses that would threaten the maintenance of its present condition or setting, as pertinent, and would remain in this use category until specified provisions are met in the future. Conservation for Future Use properties include sites of similar composition to:
  - Grouse Gulch Cave (24PH1121). This cave is unique for its petroglyph images.
  - Lookout Cave (24PH402). This cave is unique as it has yielded a wealth of information from excavations. The cave is also unique for its petroglyph images.
  - Two Hands Cave (24PH404). This cave is unique for its petroglyph images.
- **Experimental Use:** This category may be applied to a cultural property judged well-suited for controlled experimental study, to be conducted by the BLM or others concerned with the techniques of managing cultural properties, which would result in the property's alteration, possibly including loss of integrity and destruction of physical elements. Committing cultural properties or the data they contain to loss must be justified in terms of specific information that would be gained and how it would aid in the management of other cultural properties. Experimental study should aim toward understanding the kinds and rates of natural or human-caused deterioration, testing the effectiveness of protection measures, or developing new research or interpretation methods and similar kinds of practical management information. It should not be applied to cultural properties with strong research potential, traditional cultural importance, or good public use potential, if it would significantly diminish those uses. No Experimental Use properties have been identified at this time.
- **Traditional Use:** This category is to be applied to any cultural resource known to be perceived by a specified social and/or cultural group as important in maintaining the cultural identity, heritage, or well-being of the group. Cultural properties assigned to this category are to be managed in ways that recognize the importance ascribed to them and seek to accommodate their continuing traditional use. Traditional Use properties include sites of similar composition to:

- Little Rocky Mountains TCP (24PH3197/24BL1341). This area was determined eligible for the National Register of Historic Places as a Traditional Cultural Property based on significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.
- Sweet Grass Hills TCP (24TL771/24LT171). The Sweet Grass Hills was determined eligible for the National Register of Historic Places as a Traditional Cultural Property based on significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.
- Medicine Rock (24PH1008). This is a large petroglyph boulder located on the prairie. The boulder is an erratic left by the retreating glaciers several thousand years ago. Native Americans often leave offerings at this site.
- **Discharged from Management:** This category is assigned to cultural properties that have no remaining identifiable use. Most often these are prehistoric and historic archaeological properties, such as small surface scatters of artifacts or debris, whose limited research potential is effectively exhausted as soon as they have been documented. Also, more complex archaeological properties that have had their salient information collected and preserved through mitigation or research may be discharged from management, as should cultural properties destroyed by any natural event or human activity. Properties discharged from management remain in the inventory, but they are removed from further management attention and do not constrain other land uses. Particular classes of unrecorded cultural properties may be named and described in advance as dischargeable upon documentation, but specific cultural properties must be inspected in the field and recorded before they may be discharged from management. No Discharged from Management properties have been identified at this time.

## Alternative A (Current Management)

### Little Rocky Mountains Traditional Cultural Property

Oil and gas leasing would be subject to existing requirements under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, and Native American Graves Protection and Repatriation Act, E.O. 13007.

### Sweet Grass Hills Traditional Cultural Property

The area would be open to oil and gas leasing with a No Surface Occupancy (NSO) stipulation.

The area is currently withdrawn from locatable mineral entry under the Mining Law until 2017. The BLM would review the withdrawal prior to expiration.

## Alternative B

### Little Rocky Mountains Traditional Cultural Property

The area would be open to oil and gas leasing with an NSO stipulation (38,102 acres).

The area would be an exclusion area for wind energy rights-of-way (30,648 acres).

The area would be closed to solid mineral leasing (e.g., coal) (37,403 acres).

The BLM would recommend a 20-year withdrawal from locatable mineral entry under the Mining Law to protect the TCP (37,387 acres).

### Sweet Grass Hills Traditional Cultural Property

The area would be open to oil and gas leasing with an NSO stipulation (21,275 acres).

The area would be an exclusion area for wind energy rights-of-way (7,718 acres).

The area would be closed to solid mineral leasing (e.g., coal) (19,665 acres).

The area is currently withdrawn from locatable mineral entry under the Mining Law until 2017. The BLM would recommend a 20-year extension of the current withdrawal to protect the TCP (19,671 acres).

## **Alternative C**

### **Little Rocky Mountains Traditional Cultural Property**

The area would be open to oil and gas leasing with an NSO stipulation (38,102 acres).

The area would be an exclusion area for wind energy rights-of-way (30,648 acres).

The area would be closed to solid mineral leasing (e.g., coal) (37,403 acres).

### **Sweet Grass Hills Traditional Cultural Property**

The area would be open to oil and gas leasing with an NSO stipulation (21,275 acres).

The area would be an exclusion area for wind energy rights-of-way (7,718 acres).

The area would be closed to solid mineral leasing (e.g., coal) (19,665 acres).

The area is currently withdrawn from locatable mineral entry under the Mining Law until 2017. The BLM would recommend a 20-year extension of the current withdrawal to protect the TCP (19,671 acres).

## **Alternative D**

### **Little Rocky Mountains Traditional Cultural Property**

The area would be open to oil and gas leasing with an NSO stipulation (38,102 acres).

The area would be an exclusion area for wind energy rights-of-way (30,648 acres).

The area would be closed to solid mineral leasing (e.g., coal) (37,403 acres).

The area would be closed to solid mineral material sales (e.g., sand and gravel) (37,403 acres).

### **Sweet Grass Hills Traditional Cultural Property**

The area would be open to oil and gas leasing with an NSO stipulation (21,275 acres).

The area would be an exclusion area for wind energy rights-of-way (7,718 acres).

The area would be closed to solid mineral leasing (e.g., coal) (19,665 acres).

The area is currently withdrawn from locatable mineral entry under the Mining Law until 2017. The BLM would not recommend an extension of the current withdrawal.

The area would be closed to solid mineral material sales (e.g., sand and gravel) (19,665 acres).

## Alternative E (Preferred Alternative)

### Little Rocky Mountains Traditional Cultural Property

A portion of the TCP would be closed to oil and gas leasing (32,166 acres). The remaining area (5,936 acres) would be open to leasing with an NSO stipulation.

Through vegetation management or forest health treatments the BLM may restore natural meadows to enhance traditional uses and viewsheds.

The area would be an avoidance area for rights-of-way (30,648 acres).

The area would be an exclusion area for wind energy rights-of-way (30,648 acres).

A portion of the TCP would be closed to solid mineral leasing (e.g., coal) (32,058 acres). The remaining area would be open.

A portion of the TCP would be limited to those mineral material uses necessary for reclamation activities and maintenance of the existing road system (32,058 acres).

### Sweet Grass Hills Traditional Cultural Property

The area would be closed to oil and gas leasing (21,275 acres).

The area would be an avoidance area for rights-of-way (7,718 acres).

The area would be an exclusion area for wind energy rights-of-way (7,718 acres).

The area would be closed to solid mineral leasing (e.g., coal) (19,665 acres).

The area is currently withdrawn from locatable mineral entry under the Mining Law until 2017. The BLM would recommend a 20-year extension of the current withdrawal to protect the TCP (19,671 acres).

The area would be closed to solid mineral material sales (e.g., sand and gravel) (19,665 acres).

## Fire Management and Ecology

### Goal

*Manage fire and fuels to protect life and property and to protect or enhance resource values.*

### Objectives

The first priority of managing wildfires is to provide for firefighter and public safety.

Secretarial Order 3336, issued by the Secretary of the Interior on January 5, 2015, emphasized that “protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, greater sage-grouse habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department.”

Use fire to protect, maintain, and enhance resources; and to function in its ecological role where appropriate.

Integrate fire and fuels management across landscape, agency, federal, and international boundaries.

## Decisions Common to All Alternatives

The BLM’s 2012 Fire Planning Manual Guidance (M-9211) and Fire Planning Handbook (H-9211-1), along with Chapter 09 of the Interagency Standards for Fire and Fire Aviation Operations (NIFC, updated annually), and the BLM’s updated policy for Implementation of Federal Wildland Fire Management Policy (2009), April 30, 2010 (NWCG #024-2010), the Guidance for Implementation of Federal Wildland Fire Management Policy (February 2009), and Secretarial Order 3336 and the Final Report dated May 1, 2015, summarize national fire policy, regulations, guidance documents, and BLM fire planning policy. The key points of this policy and guidance are:

- Firefighter and public safety is the first priority in every fire management activity.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
- Federal agencies and local communities collaborate, particularly when Community Wildfire Protection Plans are prepared.
- The role of wildland fire as an essential ecological process and natural change agent would be incorporated into the planning process.
- Fire Management Plans (FMPs), programs, and activities support land and resource management plans and their implementation.
- Fire regime condition class methodology would be utilized for project planning, prioritization, and monitoring.

The BLM prioritizes fire management activities by risk to life, property, and natural resource objectives, including protecting, conserving, and restoring sage-grouse habitat. Mechanical, prescribed fire and other treatments would be used, where appropriate, to restore and maintain fire regimes, land health, and to reduce hazardous fuels accumulations.

The BLM uses Fire Management Units (FMUs), fire management categories, and a Fire Management Plan (FMP) to summarize guidance for fire and fuels management actions on BLM-managed lands. The FMP is developed and tiered from the RMP and then updated annually. The planning area includes seven FMUs: Sweet Grass Hills, Havre Prairie Potholes, Malta Prairie Potholes, Bears Paw, Little Rockies, Malta Breaks, and Sun Prairie (Table 2.6 and Map 2.1, which is located at the end of Chapter 2). The BLM assigns a fire management category to each FMU; the categories range from Category A where fire (including prescribed fire) is not desired at all, to Category D where fire is desired and no constraints are placed on its use. The BLM periodically assesses FMUs and the FMP to determine whether they reflect appropriate and suitable strategies to protect high value areas; or where appropriate, to enhance resource conditions and achieve desired vegetation conditions.

Appendix D, Fire and Emergency Stabilization and Rehabilitation (ES&R), provides full definitions of the fire management categories.

**Fire Management Categories**

**Category A:** Fire is not desired at all. (No lands in the planning area are assigned to this category.)

**Category B:** Unplanned fire is likely to cause negative effects.

**Category C:** Fire is desired to manage ecosystems, but current conditions create constraints on use.

**Category D:** Fire is desired; no constraints on its use. (No lands in the planning area are assigned to this category.)

The BLM Montana/Dakotas State Office has developed a database of landscape-level fire and disturbance regimes. This database is used to assess the condition of plant communities and systems relative to their regimes. Fire regime/condition class (FRCC) methodology and other land health assessments would be used by the BLM to monitor vegetation treatment effects and other changes to landscape health and fire behavior. This information would be used to provide feedback for updating available fire management strategies and responses at the RMP level.

Within the areas identified as fire management Category C on Map 2.1 in the RMP, wildfires would be managed to meet resource and protection objectives. Within the areas identified as fire management Category B on Map 2.1 in the RMP, wildfires would be managed to meet protection objectives. Fire management has included the full range of suppression options from full suppression to managing fire for beneficial effects. If monitoring indicates the strategy could be revised in Category C areas where the management of wildfire to achieve resource objectives is currently not allowed, changes would be developed and implemented through coordination with state, local, tribal, and other federal agencies and the RMP would be updated as necessary.

The BLM coordinates with state and adjacent federal land management agencies to implement fire prevention orders such as restrictions and/or closures; and maintains a current Fire Restriction and Closure Plan as an appendix to the Fire Management Plan. The BLM has developed and maintains a Wildland Fire Prevention, Mitigation, and Education Plan (BLM 2012b); and coordinates with counties to develop, update, or implement Community Wildfire Protection Plans.

Vegetation and fuels treatments on BLM lands would be planned and prioritized based on values at risk and land health assessments, including fire regime condition class assessments. In conjunction with forestry, wildlife, riparian, and range management priorities, mechanical and prescribed fire treatments may be used in all of the FMUs. The highest wildland urban interface (WUI) priority fuels treatment areas include the Zortman and Landusky Communities at Risk and areas identified by Community Wildfire Protection Plans and the Tribal Forest Protection Act.

The BLM would protect the wilderness characteristics of land within the National Wilderness Preservation System and in Wilderness Study Areas (WSAs). This includes the Burnt Lodge and Bitter Creek WSAs. Fire management-related activities, including prescribed fire, should preserve or enhance the natural character of wilderness areas and avoid unnecessary impairment of a WSA's suitability for preservation as wilderness. The use of ground-disturbing equipment during wildfire suppression and rehabilitation requires authorization, and should be avoided to protect wilderness characteristics. The use of motorized vehicles and mechanical equipment during mop-up should be minimized, and fire camps should be located outside WSAs. Suppression methods, prescribed fire implementation, and emergency stabilization/rehabilitation (ES&R) projects may include the use of power tools, aircraft, motorboats, and motorized firefighting equipment, and may require authorization prior to use.

The BLM would protect sensitive status species habitat (such as Greater Sage-Grouse habitat) during suppression and prescribed fire activities as described in this document and consistent with the Secretarial Order on Rangeland Fire and BLM Policy. Fire management-related activities, including prescribed fire, should preserve or enhance the habitat quality for Greater Sage-Grouse and other sensitive status species, especially in priority habitat areas. Where applicable, the BLM would use BMPs (Appendix C) to design fuels treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns which benefit sage-grouse habitat (Appendix M). The use of heavy equipment during wildfire suppression and rehabilitation is allowable in sage-grouse habitat although cross-country travel should be limited through these areas. Wildfire suppression facilities shall be located to the extent possible in areas that minimize disturbance to high quality sage-grouse habitat.

If prescribed fire is used in Greater Sage-Grouse habitat, the NEPA analysis for the Burn Plan will address:

- why alternative techniques were not selected as a viable options;
  - how Greater Sage-Grouse goals and objectives would be met by its use;
  - how the COT Report objectives would be addressed and met;
  - a risk assessment to address how potential threats to Greater Sage-Grouse habitat would be minimized.
- a) Prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect Greater Sage-Grouse habitat in PHMAs (e.g., creation of fuel breaks that would disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities).
  - b) Prescribed fire in known winter range shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat would need to be designed to

strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.

The BLM would implement ES&R in a cost-effective manner to minimize negative effects of fire on soil, vegetation, and water resources (Appendix D).

Prior to approval of vegetation treatment activities, an interdisciplinary environmental review would be required. For other BLM resources, site inventories or assessments would provide guidance for project planning so that activities would meet the objectives of those programs. Livestock grazing could be considered as a vegetation management tool to reduce hazardous fuel loads. The BLM would design post fuels management projects to ensure long-term persistence of seeded or pre-treatment native plants. Post-treatment land uses, such as livestock grazing rest periods, would be determined at the activity level.

The Montana DEQ has the primary responsibility for attaining and maintaining air quality standards through coordination with the Environmental Protection Agency (EPA). Prescribed fire projects must comply with state and federal air quality regulations, and the BLM must obtain burn permits from the Montana DEQ. The BLM is a member of the Montana/Idaho Airshed Group which manages smoke impacts to the region by monitoring and scheduling interagency burn activities. The entire planning area is within Montana/Idaho Airshed 9, a geographic area which has excellent smoke dispersal and is rarely denied activity by the Montana/Idaho State Airshed Group. At the project level, the BLM manages smoke impacts to sensitive areas such as towns, WSAs and wilderness areas by constraining wind direction and/or smoke dispersal height in the burn plan prescription. In addition, the BLM coordinates and obtains burn permits as necessary from county and local agencies and tribal partners.

**Alternative A (Current Management)**

Most of the FMUs are managed as Category B (Table 2.6 and Map 2.1), where unplanned fire is likely to cause negative effects, but prescribed fire treatments may be used to reduce fuels, improve land health, and restore fire regimes. Suppression of unplanned ignitions (wildfire) is required in Category B areas. Prevention and education activities are emphasized in this category as well as fuels reduction treatments.

The Malta Breaks FMU is managed as Category C (Table 2.6 and Map 2.1), where fire is desired to manage ecosystems; but ecological, social, or political conditions create constraints on use of wildfire for resource benefit. Suppression may be required in Category C areas. The emphasis in this category is to reduce hazardous fuels accumulations and to restore or maintain land health and fire regimes. Prevention and education activities target recreation areas and Wildland Urban Interface (WUI) areas.

<b>Table 2.6</b>				
<b>Fire Management Units and Categories by Alternative</b>				
<i>Fire Management Unit</i>	<i>BLM Acres</i>	<i>Fire Management Category</i>		
		<i>Alternative A (Current Management)</i>	<i>Alternatives B, C and D</i>	<i>Alternative E (Preferred Alternative)</i>
Bears Paw	123,055	B	B	B
Havre Prairie Potholes	247,834	B	B	B
Little Rockies	32,216	B	C	B
Malta Breaks	193,046	C	C	C
Malta Prairie Potholes	854,221	B	C	C
Sun Prairie	962,899	B	C	B
Sweet Grass Hills	24,204	B	B	B

**Alternatives B, C, and D**

The Bears Paw, Havre Prairie Potholes, and Sweet Grass Hills FMUs would be managed as Category B (Table 2.6 and Map W.0), where unplanned fire is likely to cause negative effects but prescribed fire treatments may be used to reduce

fuels, improve land health, and restore fire regimes. Prevention and education activities are emphasized in this category as well as fuels reduction treatments.

The Little Rockies, Malta Breaks, Malta Prairie Potholes, and Sun Prairie FMUs would be managed as Category C (Table 2.6 and Map W.0), where fire is desired to manage ecosystems but ecological, social, or political conditions create constraints on the use of wildfire for resource benefit. Suppression may be required in Category C areas. The emphasis in this category is to reduce hazardous fuels accumulations and to restore or maintain land health and fire regimes. Prevention and education activities target recreation areas and Wildland Urban Interface (WUI) areas.

Wildfires would be suppressed in both Category B and C areas. If the conditions described above change in Category C areas, suppression strategies would be reevaluated to include use of wildfire for resource benefit. Changes would be developed and implemented through coordination with state, local, tribal, and other federal agencies.

### **Alternative E (Preferred Alternative)**

The Bears Paw, Havre Prairie Potholes, Little Rockies, Sun Prairie, and Sweet Grass Hills FMUs would be managed as Category B (Table 2.6 and Map 2.1), where unplanned fire is likely to cause negative effects but prescribed fire treatments may be used to reduce fuels, improve land health, and restore fire regimes. Prevention and education activities are emphasized in this category as well as fuels reduction treatments.

The Malta Breaks and Malta Prairie Potholes FMUs would be managed as Category C (Table 2.6 and Map 2.1), where fire is desired to manage ecosystems but ecological, social, or political conditions create constraints on the use of wildfire for resource benefit. Suppression may be required in Category C areas. The emphasis in this category is to reduce hazardous fuels accumulations and to restore or maintain land health and fire regimes. Prevention and education activities target recreation areas and Wildland Urban Interface (WUI) areas.

Wildfires would be suppressed in both Category B and C areas. If the conditions described above change in Category C areas, suppression strategies would be reevaluated to include use of wildfire for resource benefit. Changes would be developed and implemented through coordination with state, local, tribal, and other federal agencies.

## **Fish**

### Goals

*Ensure habitat for aquatic species is of sufficient quantity and quality to enhance biological diversity and sustain ecological, economic and social values.*

*Ensure proposed land uses initiated or authorized by the BLM maintain or improve aquatic habitats.*

*Promote public awareness, appreciation, and understanding of fisheries conservation, management, and ecology.*

## **Objectives**

The necessary habitat, biological processes, and disturbance regimes would be present to maintain, enhance, or restore priority fisheries populations. Land use would maintain habitat quality and large, intact reaches of aquatic habitat.

Use individual species management strategies and/or known habitat associations to design aquatic habitat for as many aquatic species as possible.

Manage priority fish habitats using multi-scale assessments to identify current conditions, risks and opportunities.

Identify restoration activities to provide improved aquatic and riparian habitat.

## Decisions Common to All Alternatives

Management activities would be designed and implemented consistent with current adopted strategies including Montana's Comprehensive Fish and Wildlife Conservation Strategy (MFWP 2005) and currently accepted science.

Most management actions would be directed at maintaining habitat and the processes that provide habitat diversity in the planning area. Where species-specific management can improve individual special status species habitats or populations, those actions would be considered as long as they are also compatible with long-term persistence of other habitats and species.

The BLM would cooperate with state and federal agencies to establish programs that are consistent with ecologically sound and sustainable practices, conserve and enhance high quality aquatic habitat, protect native aquatic species, and enhance game fishing opportunities.

If species which occur on BLM lands in the planning area are added to the Threatened and Endangered list in the future, management actions would be developed to conserve, enhance and protect the species in accordance with the Endangered Species Act.

The BLM would continue to manage aquatic habitats in the planning area according to existing federal and state laws, regulations, and BLM policies including BMPs and Montana Streamside Management Zone (SMZ) guidelines. Habitat management includes maintaining water quality and quantity, and riparian and wetland habitat conditions.

The BLM would protect aquatic resources occurring on BLM land through implementation of responsible and appropriate land management activities. The BLM would continue to implement, review, and update as necessary the Prairie Pothole Waterfowl and Fisheries Habitat Management Plan (HMP) of North Central Montana (BLM 1978) and the Whitewater Lake Waterfowl Habitat Development Project HMP (BLM 1970a). The BLM management approach includes the development of activity plans showing how site-specific actions accomplish goals and objectives. Some examples of activity plans include allotment management plans, recreation plans, habitat management plans, cultural resource management plans, oil and gas plans of development, and use authorizations. These plans would include the implementation of appropriate BMPs for activities directed by or permitted by the BLM to support the integrity of ecological processes, protect identified beneficial water uses, and meet state water quality standards.

The BLM would provide maintenance to all aquatic habitat improvement/fisheries projects as needed to ensure proper function.

## Alternative A (Current Management)

All high value fisheries would be evaluated to determine the need for fencing to promote riparian vegetation establishment.

An aquatic resource survey and monitoring plan would be developed to identify areas for special management to protect and/or improve aquatic habitats.

The BLM would encourage increased opportunities for recreational fishing (i.e., access, reservoir development, habitat improvement).

## Alternatives B, C, D, and E (Preferred Alternative)

Any new reservoirs would be analyzed for fish habitat potential. Priority consideration would be given to reservoirs near communities and access routes. The BLM would maintain and/or improve new and existing designated fishing reservoirs through fencing, aeration, and fish habitat improvement projects. All fishing reservoirs would be maintained as fisheries as long as the BLM and Montana Fish, Wildlife and Parks (MFWP) determine that they are viable fisheries opportunities. Fish stocking would be coordinated with MFWP.

The BLM would develop an aquatic resource survey and monitoring plan to identify areas for management to protect and/or improve aquatic habitats. Fish-bearing stream reaches would be surveyed/monitored as conditions warrant. Fishing reservoirs would be surveyed/monitored as needed for fish populations, riparian condition, emergent vegetation, reservoir condition, water quality, water depth, signage and condition of access. This inventory and monitoring would be crucial to sustaining a viable fishing reservoir.

The BLM would reduce effects of the transportation system on fisheries resources. To the extent possible, roads would be located, designed and maintained to reduce sedimentation, identify and remove unnatural barriers, eliminate fish passage barriers (when desired), and maintain or restore riparian vegetation. Culverts and other stream crossings would be analyzed for fish passage and would be made passable as opportunities arise.

The BLM would encourage increased opportunities for fisheries (i.e., access, reservoir development, habitat improvement). This would include coordination with MFWP (e.g., signage and pond levels), public schools and/or the general public on the development of fisheries opportunities through activities such as the development of a yearly fishing access and pond fishing guide for public use, public fishing days, and aquatic educational programs (e.g., uses of the fish resource other than for recreational fishing).

## Fluid Minerals

### Goal

*Ensure dependable and environmentally responsible production of leasable minerals by identifying lands appropriate for lease and development.*

## Objectives

Provide opportunities for responsible development of oil and gas.

Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 C.F.R. 3162.3-1(h).

Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, minimize and apply compensatory mitigation to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to sage-grouse or its habitat and will ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.

## Decisions Common to All Alternatives

The BLM planning process determines availability of federal minerals for oil and gas leasing. Federal oil and gas resources administered by the BLM are categorized into one of four groups:

- lands open to leasing with only standard lease terms;
- lands open to leasing subject to moderate constraints, such as a seasonal Timing Limitation Stipulation (TLS) or Controlled Surface Use (CSU);
- lands open to leasing subject to major constraints, such as No Surface Occupancy (NSO); and
- lands closed to leasing.

In areas with only standard lease terms, the BLM's 200 meter/60-day rule provides that conditions of approval are deemed consistent with lease rights provided that they do not require relocation of proposed operations by more than 200 meters, mandate that operations be sited off the leasehold, or prohibit new surface-disturbing activities for a period of more than 60 days in an lease year (43 CFR 3101.1-2).

In areas with a timing limitation stipulation (TLS), surface use is prohibited during specific time periods to protect identified resource values. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project-specific mitigation measures would be insufficient.

In areas with a controlled surface use (CSU) stipulation, use and occupancy is allowed (unless restricted by another stipulation), but identified resource values require special operational constraints that may modify the lease rights. CSU is used for operating guidance, not as a substitute for no surface occupancy or timing limitation stipulation.

In areas with a no surface occupancy (NSO) stipulation, use or occupancy of the land surface for fluid mineral exploration or development is prohibited to protect identified resource values.

In areas closed to leasing, federal minerals are not available for future oil and gas leasing. Existing oil and gas leases would continue according to the respective stipulations until they expire. Where oil or gas is being drained from lands otherwise unavailable for leasing, the BLM may issue leases with an NSO stipulation (43 CFR 3100.0-3(d)) with appropriate exception, waiver, and modification criteria.

An oil and gas lease grants the lessee the right to explore for, extract, remove, and dispose of the oil and gas deposits that may be found on the leased lands. The lessee may exercise the rights conveyed by the lease, subject to lease terms and any lease stipulations, and permit approval requirements. Oil and gas operations are described in detail in Appendix E.1.

The BLM Montana State Office issues all federal oil and gas leases for the planning area, including those involving split estate ownership. Competitive lease auctions are held where the public can nominate any federal lands with unleased federal minerals and/or any split estate lands overlying unleased federal minerals. For those parcels determined as appropriate for oil and gas leasing, but where other resource concerns or conflicts exist, stipulations based on the approved resource management plan are placed on the parcels. Prior to the lease auction, parcels with stipulations are posted for a 45-day review period in accordance with current regulations and policy.

Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.

Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.

The existing oil and gas leases (803,656 acres) would continue according to the respective stipulations until they expire. As these leases expire, the areas would come under the management guidelines of the approved resource management plan. New surface use stipulations (including TLS, CSU, and NSO) cannot be applied to existing oil and gas leases or other existing valid use authorizations such as rights-of-way. Site-specific actions such as APDs and rights-of-way in areas with existing oil and gas leases would be allowed, subject to surface use conditions of approval and best management practices (Appendix E.2).

Where applicable, stipulations may be changed by application of waivers, exceptions, or modifications. Waivers are a permanent exception from a lease stipulation. This occurs when the resource does not require the stipulation. Exceptions are granted on a case-by-case basis. Each time the lessee applies for an exception, the resource objective of the stipulation must be met. Modifications are fundamental changes to the provisions of a lease stipulation either temporarily or for the term of the lease. The decision whether to grant waivers, exceptions, or modifications generally

occurs during the APD approval process. If the authorized officer determines the change to be substantial, the change would be subject to a 30-day public review period.

Additional information can be provided to the lessee in the form of Onshore Orders (1, 2, 3, 5, and 7) and Notice to Lessees 3A and 4A. The Onshore Orders and Notices provide information about applicable laws and regulations, and the requirements for additional information to be supplied by the lessee.

After lease issuance, the lessee may conduct lease operations with an approved permit. Proposed drilling and associated activities must be approved before beginning operations. The operator must file an APD or Sundry Notice that must be approved according to lease stipulations, Onshore Oil and Gas Orders, and appropriate regulations. Subsequent well operations are set forth in 43 CFR 3162.3-2.

New information may lead to changes in existing resource inventories. New areas and resource locations, or areas and resource locations that are no longer valid, may be identified. These usually cover small areas requiring the same protection or mitigation as stated in this plan. Identification of new areas or removal of old areas that no longer have those resource values would result in the use of the same lease stipulation identified in this plan. These areas would be added to the existing data inventory through plan maintenance. In cases where the changes constitute a change in resource allocation outside the scope of this plan, a plan amendment would be required.

On Bureau of Reclamation lands (131,364 acres), in addition to the resource-specific stipulations under each alternative, stipulations and conditions are provided in accordance with that agency's planning guidance (Appendix E.3).

Regulations at part 43 CFR 3100.0-3(d), the Secretary's general authority to prevent the waste and dissipation of public property, and the Attorney General's Opinion of April 2, 1941 (Vol. 40 Op. Atty. Gen 41) allow the BLM to lease lands that are otherwise unavailable for leasing if oil and gas is being drained from such lands. Unavailable lands would be leased only if a state or fee well is proposed or completed within the same spacing unit, or if the lands are within a producing unit. These lands would be leased with a no surface occupancy and no subsurface occupancy stipulation with no waiver, modification, or exception provisions. This would only be a paper transaction with no physical impacts on the unavailable lands. No exploration or development (drilling or production) within the unavailable lands would occur. After issuance of a lease, the lease would be committed to a communitization agreement and the United States would then receive revenue in proportion to its acreage interest.

All lands would be open to geophysical exploration, subject to appropriate resource surveys, surface protection measures, adequate bonding, and adherence to State of Montana standards (ARM, 36.22.5) for geophysical operations.

## Alternative A (Current Management)

Approximately 282,062 acres (8%) of federal minerals would be open to leasing subject to major constraints (NSO), 2,649,241 acres (76%) would be open to leasing subject to moderate constraints (TLS and CSU), and 457,849 acres (13%) would be open to leasing subject to standard lease terms only (Table 2.7 and Map 2.2, which is located at the end of Chapter 2). The federal minerals available for leasing would be subject to the stipulations which are summarized in Table 2.8. The complete stipulations (Form 3109-1 – Standard Stipulations) are located in Appendix E.4.

Approximately 102,298 acres (3%) of federal minerals would be closed to leasing (Table 2.7 and Map 2.2). This includes the Bitter Creek WSA, Burnt Lodge WSA, and the Little Rocky Mountains.

### Subsequent Well Operations

A proposal for further well operations must be approved by the authorized officer prior to commencing operations to redrill, deepen, perform casing repairs, plug-back, alter casing, perform nonroutine fracturing jobs, recomple in a different interval, perform water shut off, commingling production between intervals and/or conversion to injection.

Unless additional surface disturbance is involved and if the operations conform to the standard of prudent operating practice, prior approval is not required for routine fracturing or acidizing jobs, or recompletion in the same interval.

No prior approval or a subsequent report is required for well cleanout work, routine well maintenance, or bottom hole pressure surveys.

## Alternative B

Approximately 258,560 acres (7%) of federal minerals would be open to leasing subject to major constraints (NSO); 3,291 acres (<1%) would be open to leasing subject to moderate constraints (TLS and CSU); and 55,962 acres (2%) would be open to leasing subject to standard lease terms only (Table 2.7 and Map 2.2). The federal minerals available for leasing would be subject to the stipulations which are summarized in Table 2.8. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4.

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
Open – NSO	282,062	258,560	1,291,160	357,456	1,711,378
<i>Leased</i>	28,954	78,469	338,636	33,504	182,060
<i>Unleased</i>	253,108	180,091	952,524	323,952	1,529,318
Open – TLS/CSU	2,649,241	3,291	1,681,990	2,461,652	1,460,097
<i>Leased</i>	578,195	1,544	341,765	545,301	561,866
<i>Unleased</i>	2,071,046	1,747	1,340,226	1,916,351	898,230
Open – Standard Terms Only	457,849	55,962	299,713	597,668	167,274
<i>Leased</i>	196,508	15,978	123,255	224,851	57,306
<i>Unleased</i>	261,341	39,983	176,458	372,817	109,967
Closed	102,298	3,173,637	218,586	74,674	152,702
<i>Leased</i>	0	707,665	0	0	2,424
<i>Unleased</i>	102,298	2,465,972	218,586	74,674	150,278

Approximately 3,173,637 acres (91%) of federal minerals would be closed to leasing (Table 2.7 and Map 2.2). This includes the Bitter Creek WSA, Burnt Lodge WSA, a parcel adjacent to the Bear Paw Battlefield, Azure Cave ACEC, areas with important wildlife habitat, and areas with wilderness characteristics.

## Alternative C

Approximately 1,291,160 acres (37%) of federal minerals would be open to leasing subject to major constraints (NSO); 1,681,990 acres (48%) would be open to leasing subject to moderate constraints (TLS and CSU); and 299,713 acres (9%) would be open to leasing subject to standard lease terms only (Table 2.7 and Map 2.3, which is located at the end of Chapter 2). The federal minerals available for leasing would be subject to the stipulations which are summarized in Table 2.8. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4.

Approximately 218,586 acres (6%) of federal minerals would be closed to leasing (Table 2.7 and Map 2.3). This includes the Bitter Creek WSA, Burnt Lodge WSA, a parcel adjacent to the Bear Paw Battlefield, Azure Cave ACEC, and areas with wilderness characteristics.

## Alternative D

Approximately 357,456 acres (10%) of federal minerals would be open to leasing subject to major constraints (NSO); 2,461,652 acres (71%) would be open to leasing subject to moderate constraints (TLS and CSU); and 597,668 acres (17%) would be open to leasing subject to standard lease terms only (Table 2.7 and Map 2.3). The federal minerals available for leasing would be subject to the stipulations which are summarized in Table 2.8. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4.

Approximately 74,674 acres (2%) of federal minerals would be closed to leasing (Table 2.7 and Map 2.3). This includes the Bitter Creek WSA, Burnt Lodge WSA, and Azure Cave ACEC.

### **Alternative E (Preferred Alternative)**

Approximately 1,711,378 acres (49%) of federal minerals would be open to leasing subject to major constraints (NSO); 1,460,097 acres (42%) would be open to leasing subject to moderate constraints (TLS and CSU); and 167,274 acres (5%) would be open to leasing subject to standard lease terms only (Table 2.7 and Map 2.4, which is located at the end of Chapter 2). The federal minerals available for leasing would be subject to the stipulations which are summarized in Table 2.8. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4.

Approximately 152,702 acres (4%) of federal minerals would be closed to leasing (Table 2.7 and Map 2.4). This includes the Bitter Creek WSA, Burnt Lodge WSA, Sweet Grass Hills TCP, a portion of the Little Rocky Mountains TCP, and the Azure Cave ACEC.



Stevens Compressor in Southern Blaine County

BLM Photo

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
<b>Air Resources</b>	None			CSU – Surface occupancy or use is subject to diesel-fueled nonroad engine (greater than 200 hp design rating) special operating constraint.	
<b>Cultural Resources</b>					
<i>NRHP Eligible Properties/Districts</i>	NSO on a case-by-case basis.	NSO			NSO
<i>Little Rocky Mountains TCP</i>					Higher elevations of the Little Rocky Mountains (above 3,600 feet) would be closed to leasing. The remaining area would be open with NSO stipulation.
<i>Sweet Grass Hills TCP</i>					Closed to leasing.
<i>Cultural Resource Survey (NTL-MSO-1-85)</i>	Cultural resource survey required.				
<i>Cultural Resource Lease Stipulation (16-1)</i>	The BLM may require modification to exploration or development proposals to protect historic properties and/or resources. The stipulation provides additional protection for historic properties under the NHPA and other statutes and Executive Orders.				
<b>Little Rocky Mountains Watershed</b>	Closed to leasing.	Appropriate resource stipulations.			
<b>National Historic Trails</b>	NSO - 300 feet from developed and undeveloped recreation trails.	NSO within 1/4 mile of National Historic Trails.	NSO within and 500 feet from National Historic Trails.	NSO within 300 feet of National Historic Trails.	NSO within the National Trail Management Corridor of designated National Historic Trails.
<b>National Park Service Bear Paw Battlefield</b>	Standard lease terms only.	Closed to leasing for the parcel adjacent to the Bear Paw Battlefield identified as T30N R19E, Sec. 12, SWNE.		NSO for the parcel adjacent to the Bear Paw Battlefield identified as T30N R19E, Sec. 12, SWNE.	

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
<b>Paleontological Resources</b>	NSO in critical paleontological sites (3 acres).	NSO in designated paleontological sites.			
<i>Paleontological Notice (LN 14-12)</i>	A paleontological inventory may be required.	Prior to any surface-disturbing activity in areas known to have a high potential (Classes 3-5) for containing significant paleontological resources, the lessee shall be required to conduct a paleontological inventory.			
<b>Recreation Sites</b>	NSO - 300 feet from developed and undeveloped recreation sites/trails.	NSO within 1/4 mile of recreation sites.	NSO within and 500 feet from recreation sites.	NSO within 300 feet of recreation sites.	NSO within and 500 feet from recreation sites.
<b>Residential Structures</b>	NSO - 300 feet from occupied buildings.	NSO within 1/4 mile of incorporated city limits or residential structures.	NSO within 500 feet of incorporated city limits or residential structures.	NSO within 300 feet of residential structures.	NSO within and 500 feet of incorporated city limits or residential structures.
<b>Sagebrush Focal Areas</b>	None				NSO with no WEMs
<b>Soils</b>	CSU - On slopes over 30%, or 20% on extremely erodible or slumping soils.	NSO on sensitive soils, badlands, rock outcrop, or slopes susceptible to mass failure.	CSU – Prior to any surface disturbance on sensitive soils a reclamation plan must be approved by the authorized officer. The plan must demonstrate that no other practicable alternatives exist for relocating the activity.  NSO on badlands, rock outcrop, and slopes susceptible to mass failure.	Standard lease terms only (200 meters and 60 days).	CSU – Surface occupancy and use would be controlled on sensitive soils. Sensitive soils are determined using a combination of slope and soil erodibility. Prior to surface disturbance on sensitive soils, a reclamation plan must be approved by the administrative officer.  NSO on badlands and rock outcrop.
<b>Special Designations</b>					
<i>Azure Cave ACEC</i>	Closed to leasing.				
<i>Big Bend of the Milk River ACEC</i>	NSO				
<i>Bitter Creek ACEC</i>	If the Bitter Creek WSA is released by Congress, the area would remain closed to leasing until an ACEC management plan is completed that would address oil and gas leasing.				
<i>Frenchman Breaks</i>	N/A*		NSO (39,700 acres).	NSO (57,784 acres).	NSO (39,700 acres).

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<b>Stipulation</b>	<b>Alternative A (Current Management)</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Preferred Alternative)</b>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
<i>ACEC</i>					
<i>Grassland Bird/Greater Sage-Grouse Priority Areas ACEC</i>	N/A*	Closed to leasing.	N/A*		
<i>Greater Sage-Grouse Protection Priority Area ACEC</i>	N/A*	Closed to leasing.	N/A*		
<i>Kevin Rim ACEC</i>	NSO within 3 miles of identified active raptor nests and NSO for cultural resources on a case-by-case basis.	NSO			
<i>Little Rocky Mountains ACEC</i>	N/A*			NSO	N/A*
<i>Malta Geological ACEC</i>	N/A*	CSU – Prior to any surface-disturbing activity the lessee shall be required to conduct a paleontological inventory.			
<i>Mountain Plover ACEC</i>	TLS - April 1 through July 31.	NSO			Closed to leasing.
<i>Prairie Dog Towns within the 7km Complex ACEC</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	N/A*			
<i>Sweet Grass Hills ACEC</i>	NSO				Closed to leasing.
<i>Woody Island ACEC</i>	N/A*		NSO (15,804 acres).		NSO (24,083 acres).
<i>Zortman/Landusky Mine Reclamation ACEC</i>	N/A*	NSO		N/A*	Closed to leasing.
<i>Wilderness Study Areas (Bitter Creek and Burnt Lodge WSAs)</i>	Closed to leasing.				
<b>Visual Resources</b>	None				CSU – Within VRM Class II areas, oil and gas development activities would be located, designed, constructed,

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
					operated and reclaimed so that activities should not attract attention to the casual observer within 2 years from initiation of construction.  Closed – VRM Class I areas would be closed to oil and gas leasing (see Wilderness Study Areas).
<b>Water, Riparian, Wetland, and Floodplains</b>	CSU - 500 feet from lakes, reservoirs, ponds and intermittent ephemeral or small perennial streams or, when necessary, within the 25 year floodplains; or 1,000 feet from larger perennial streams, rivers, and domestic water supplies or, when necessary, within the 100-year floodplains.	NSO within and 1/4 mile from lentic or lotic riparian areas.	NSO within and 500 feet from lentic or lotic riparian areas.	CSU within and 300 feet from lentic or lotic riparian areas.	NSO within perennial or intermittent streams, lakes, ponds, reservoirs, 100-year floodplains, wetlands, and riparian areas.  NSO within State-designated Source Water Protection Areas.  CSU – Surface occupancy and use would be controlled within 300 feet of riparian and/or wetland areas. Surface-disturbing activities would require a plan with design features that demonstrate how all actions would maintain and/or improve the functionality of riparian/wetland areas.
<i>Dibbler and Whitewater</i>	NSO within the Dibbler and Whitewater waterbodies.  CSU - 500 feet from the Dibbler and Whitewater waterbodies.				
<i>Lonesome Lake</i>	NSO within riparian areas, waterbodies, and ephemeral wetlands.				
<b>Wilderness Characteristics</b>					
<i>Eastern Breaks and Badlands</i>	N/A**	Closed to leasing.	Closed to leasing.	N/A**	NSO

**Table 2.8**  
**Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
<i>Island Mountain Range</i>	N/A**	Closed to leasing.	Closed to leasing.	N/A**	N/A**
<i>Prairie Grasslands</i>	N/A**	Closed to leasing.	NSO	N/A**	N/A**
<i>Sagebrush Grasslands</i>	N/A**	Closed to leasing.	Closed to leasing.	N/A**	N/A**
<i>Western Breaks and Badlands</i>	N/A**	Closed to leasing.	N/A**	N/A**	N/A**
<b>Wildlife</b>					
<i>Bald Eagle</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of bald eagle nest sites and winter roost sites active within the last 7 years.	NSO within 1/4 mile of bald eagle nest sites active within the last 7 years.	TLS – Surface occupancy and use is prohibited within 1/2 mile of bald eagle nest sites active within the last 7 years, from January 1 through August 31.	NSO within 1/2 mile of bald eagle nest sites active within the preceding 5 breeding seasons.
<i>Bighorn Sheep Lambing</i>	Standard lease terms only (200 meters and 60 days).	Closed to leasing.	NSO	TLS - Surface occupancy and use is prohibited within bighorn sheep lambing areas from May 1 through June 30.	NSO
<i>Bighorn Sheep Range</i>	Standard lease terms only (200 meters and 60 days).	Closed to leasing.	CSU - Surface-disturbing or disruptive activities within bighorn sheep range would require a plan to avoid or minimize habitat loss from direct and indirect impacts. The plan would be approved by the authorized officer.	Standard lease terms only (200 meters and 60 days).	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain bighorn sheep habitat would be prepared by the proponent and implemented upon approval by the authorized officer.
<i>Black-footed Ferret</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of black-footed ferret habitat.	NSO within 1/4 mile of black-footed ferret habitat.	NSO within black-footed ferret habitat.	NSO within 1/4 mile of black-footed ferret habitat.
<i>Black-tailed Prairie Dog</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of black-tailed prairie dog habitat.	NSO within 1/4 mile of black-tailed prairie dog habitat.	NSO within black-tailed prairie dog habitat.	NSO within 1/4 mile of black-tailed prairie dog habitat.

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
<i>Colonial Waterbirds (Surface Occupancy)</i>	NSO within 1/4 mile of a waterbird nesting colony.	Closed to leasing within 1/2 mile of a waterbird nesting colony.	NSO within 1/2 mile of a waterbird nesting colony.	NSO within 1/4 mile of a waterbird nesting colony.	NSO within 1/4 mile of a waterbird nesting colony.
<i>Colonial Waterbirds (Timing Limits)</i>	Standard lease terms only (200 meters and 60 days).	TLS - Surface occupancy and use is prohibited within 1 mile of a waterbird nesting colony from April 1 through July 15.		TLS - Surface occupancy and use is prohibited within 1/2 mile of a waterbird nesting colony from April 1 through July 15.	TLS - Surface occupancy and use is prohibited within 1/2 mile of a waterbird nesting colony from April 1 through July 15.
<i>Crucial Elk Winter Range (South Valley County)</i>	NSO	Closed to leasing.	NSO - Surface occupancy and use is prohibited in crucial winter range.	CSU - Surface-disturbing or disruptive activities within crucial winter range would require a plan to maintain functionality of habitat and avoid or minimize habitat loss. This plan would limit the number of disturbed areas (well pads) within crucial winter range to less than 2 well disturbances per 640 acres of crucial winter range. The plan would be approved by the authorized officer.	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain functionality of crucial winter range for big game and/or Greater Sage-Grouse would be prepared by the proponent and implemented upon approval by the authorized officer. Within crucial winter range surface-disturbing or disruptive activities would be restricted or prohibited within 0.6 miles from any existing surface-disturbing or disruptive activity.
<i>Crucial Winter Range (antelope, elk, mule deer)</i>	TLS - December 1 through May 15.				
<i>Elk Calving Grounds</i>	TLS - May 1 through June 30.	Closed to leasing.	Standard lease terms only (200 meters and 60 days).		
<i>Endangered Species Act Section 7 Consultation</i>	The BLM may recommend modifications to or disapprove a proposed activity that would contribute to a need to list plants, animals, or their habitats determined to be threatened, endangered, or other special status species, or that is likely to jeopardize the continued existence of a proposed or listed species or its habitat (Washington Office IM No. 2002-174).				
<i>Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas</i>	Appropriate resource stipulations.	Closed to leasing.	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain functionality of grassland bird/Greater	Appropriate resource stipulations.	NSO with limited exceptions and no waivers or modifications within Priority Habitat Management Areas.

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
			Sage-Grouse habitat would be prepared by the proponent and implemented upon approval by the authorized officer. Within the priority areas surface-disturbing or disruptive activities would be restricted or prohibited within 0.6 miles from any existing surface-disturbing or disruptive activity.		
<i>Greater Sage-Grouse Leks (General Habitat)</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 2 miles of a sage-grouse lek.	NSO within 1 mile of a sage-grouse lek.	NSO within 0.6 miles of a sage-grouse lek.	NSO within 0.6 miles of a sage-grouse lek.
<i>Greater Sage-Grouse Leks (Lonesome Lake)</i>	TLS - Surface occupancy and use prohibited within 1/4 mile of grouse leks March 15 through June 15.				
<i>Greater Sage-Grouse Nesting Habitat (General Habitat)</i>	TLS - Avoid nesting areas March 1 through June 15.	Closed to leasing.	CSU - Surface-disturbing or disruptive activities would require specific actions to prevent or minimize disturbance to sage-grouse or their habitat outside of the Greater Sage-Grouse Protection Priority Area.	TLS - Surface occupancy and use is prohibited within 1 mile of leks from March 1 through June 15.	CSU - Surface-disturbing or disruptive activities may be restricted or prohibited within 2 miles of Greater Sage-Grouse leks. Prior to such activities a plan to maintain functionality of Greater Sage-Grouse habitat would be prepared by the proponent and implemented upon approval by the authorized officer.
<i>Greater Sage-Grouse Protection Priority Habitat Management Area</i>	Appropriate resource stipulations.	Closed to leasing.	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain functionality of	Appropriate resource stipulations.	NSO with limited exceptions and no waivers or modifications within the Protection Priority Habitat

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
			Greater Sage-Grouse habitat would be prepared by the proponent and implemented upon approval by the authorized officer. Within the Protection Priority Area surface-disturbing or disruptive activities would be restricted or prohibited within 0.6 miles from any existing surface-disturbing or disruptive activity.		Management Area.
<i>Greater Sage-Grouse Winter Range</i>	TLS - December 1 through May 15.	Closed to leasing.	TLS – Surface occupancy and use is prohibited within winter range from December 1 through May 15.	TLS - Surface occupancy and use is prohibited within winter range from December 1 through March 31.	
<i>Interior Least Tern</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of interior least tern occupied habitat.	NSO within 1/2 mile of interior least tern occupied habitat.	NSO within 1/4 mile of interior least tern occupied habitat.	
<i>Mountain Plover (Surface Occupancy)</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/4 mile of mountain plover habitat.	NSO within mountain plover habitat.		
<i>Mountain Plover (Timing Limit)</i>	Standard lease terms only (200 meters and 60 days).	TLS - Surface occupancy and use is prohibited within 1/2 mile of mountain plover habitat from April 1 through July 15.	TLS - Surface occupancy and use is prohibited within 1/4 mile of mountain plover habitat from April 1 through July 15.	Standard lease terms only (200 meters and 60 days).	TLS - Surface occupancy and use is prohibited within 1/4 mile of mountain plover habitat from April 1 through July 15.
<i>Pallid Sturgeon</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.				CSU - Prior to surface-disturbing or disruptive activities occurring in or within 1/2 mile of river or stream shorelines

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
					identified as pallid sturgeon habitat, a plan to maintain pallid sturgeon habitat would be prepared by the proponent and implemented upon approval by the authorized officer. The 1/2 mile buffer is under review and could be changed. Regardless, any proposed development would require consultation with the USFWS which could result in a revised distance.
<i>Peregrine Falcon</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of peregrine falcon nests active within the past 7 years.	NSO within 1/4 mile of peregrine falcon nests active within the past 7 years.	CSU – Surface-disturbing or disruptive activities within 1/4 mile of peregrine falcon nests active within the past 7 years would require a plan to maintain the functionality of the nest, avoid or minimize habitat loss, and minimize disturbances to peregrine falcons.	NSO within 1 mile of peregrine falcon nests active within the preceding 7 breeding seasons.
<i>Piping Plover</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of piping plover habitat.	NSO within 1/4 mile of piping plover habitat.	TLS – Surface occupancy and use is prohibited within 1/4 mile of piping plover habitat from May 15 through July 31.	NSO within 1/4 mile of piping plover habitat.
<i>Raptors</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of raptor nests active within the past 7 years.	NSO within 1/4 mile of raptor nests active within the past 7 years.	CSU – Surface-disturbing or disruptive activities within 1/4 mile of raptor nests active within the past 7 years would require a	NSO within 1/4 mile of raptor nests active within the past 7 years.
<i>Raptors - Ferruginous</i>	Surface occupancy and use				

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
<i>Hawk (Lonesome Lake)</i>	is prohibited within 1/2 mile of known ferruginous hawk nest sites which have been active within the past 2 years.			plan to maintain the functionality of the nest, avoid or minimize habitat loss, and minimize disturbances to raptors.	
<i>Raptors - Peregrine Falcon</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.				
<i>Raptors - Special Status Species</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.				
<i>Raptors (Kevin Rim and Sweet Grass Hills)</i>	NSO - 3 miles from identified active raptor nests.				
<i>Raptors (Surface Occupancy)</i>	Standard lease terms only (200 meters and 60 days).				
<i>Raptors (Timing Limits)</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	TLS - Surface occupancy and use is prohibited from March 1 through September 1 within 1 mile of active raptor nest sites.	TLS - Surface occupancy and use is prohibited from March 1 through July 31 within 1/2 mile of active raptor nest sites.	TLS - Surface occupancy and use is prohibited from March 1 through July 31 within 1/4 mile of active raptor nest sites.	TLS - Surface occupancy and use is prohibited from March 1 through July 31 within 1/2 mile of active raptor nest sites.
<i>Sharp-tailed Grouse (leks)</i>	NSO - 500 feet from strutting grounds.	Closed to leasing within 1/2 mile of sharp-tailed grouse leks.	NSO within 1/4 mile of sharp-tailed grouse leks.	CSU – Surface-disturbing or disruptive activities within 1/4 mile of sharp-tailed grouse leks would require a plan to maintain the functionality of the lek, avoid or minimize habitat loss, and minimize disturbances to sharp-tailed grouse.	NSO within 1/4 mile of sharp-tailed grouse leks.
<i>Sharp-tailed Grouse (nesting habitat)</i>	TLS - March 1 through June 30 within 500 feet of a sharp-tailed grouse nest.	TLS - Surface occupancy and use is prohibited from March 15 through June 30	TLS - Surface occupancy and use is prohibited from March 15 through June 30	TLS - Surface occupancy and use is prohibited from March 15 through June 30	TLS - Surface occupancy and use is prohibited from March 15 through June 30

**Table 2.8  
Oil and Gas Lease Stipulations by Alternative**

<i>Stipulation</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Please note: This is a summary only. The complete stipulations, including the objectives, exceptions, modifications, and waivers, are located in Appendix E.4</i>					
		within 1 mile of sharp-tailed grouse leks.	within 1/2 mile of sharp-tailed grouse leks.	within 1/4 mile of sharp-tailed grouse leks.	within 1/2 mile of sharp-tailed grouse leks.
<i>Special Status Species</i>	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	NSO within 1/4 mile of essential habitat of special status species unless other species-specific stipulations apply.			CSU - BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid activities that would contribute to a need to list such a species or their habitat.
<i>Sprague's Pipit</i>	Standard lease terms only (200 meters and 60 days).	Closed to leasing within Sprague's pipit habitat.	Standard lease terms only (200 meters and 60 days).		TLS – Surface occupancy and use is prohibited from April 15 through July 15 in Sprague's pipit habitat.
<i>Swift Fox (Lonesome Lake)</i>	CSU - 1/2 mile from swift fox dens.	Standard lease terms only (200 meters and 60 days).			
<i>Winter Range (antelope, elk, mule deer)</i>	TLS - December 1 through May 15.	Closed to leasing.	TLS – Surface occupancy and use is prohibited within winter range from December 1 through May 15.	TLS - Surface occupancy and use is prohibited within winter range from December 1 through March 31.	TLS - Surface occupancy and use is prohibited within winter range from December 1 through May 15.

\* The area would not be designated an ACEC under this alternative.

\*\* The areas would not be managed for wilderness characteristics under this alternative.

## Forests and Woodlands

### Goal

*Promote healthy forests that are biologically and structurally diverse, relatively fire tolerant, and dominated by not only vigorous conifer trees but also native grasses, forbs and shrubs, and hardwoods.*

### Objectives

Emphasize healthy forest conditions through treatments and management activities that would include the role of fire as a change agent necessary for the development of healthy forests and woodlands.

Provide for local economic opportunities through offerings of forest products while being responsive to developing markets dependent upon non-traditional forest byproducts (e.g., biomass).

### Decisions Common to All Alternatives

All forest and woodland health treatments would be clearly defined through written silvicultural prescriptions based on the latest available science. At a minimum, prescriptions would require a current stand description, the desired future conditions to achieve a healthy forest ecosystem, and the recommended steps to achieve forest health. The BLM would consult with MFWP and seek concurrence regarding the anticipated benefits and/or impacts of any forest or woodland treatments that may impact wildlife habitat.

The BLM would look for opportunities to utilize all material that is treated through offerings of forest products including sawtimber and minor products such as Christmas trees, fuel wood and post and pole sales. Permits would be issued for minor products on a demand basis unless specifically prohibited. No sale of forest products would be made at less than the appraised market value. Sales of commercial wood products would be coordinated with adjacent landowners. Mitigation measures applied to all treatments would include Water Quality Best Management Practices for Montana Forests (Logan 2001). Post-treatment activities would consider the use of prescribed fire as a means to further reduce debris and provide site preparation for establishment or resprouting of native vegetation.

The BLM would continue a collaborative effort to identify high priority treatment areas and implementation schedules, and would establish baseline data utilizing the Forest Vegetation Information System (FORVIS) or the current standard. Data would be used to establish acres of forest and woodlands that are outside the historical range of variance and would help prioritize land treatments. Isolated parcels would be treated on a case-by-case basis.

### Alternative A (Current Management)

The BLM would offer forest products as opportunities arise. The annual sale of forest products would not exceed the allowable sale quantity (ASQ) of 350 MBF per year (3.5 MMBF per decade).

The BLM would utilize commercial thinning as a silvicultural practice focusing on stands less than 90 years old.

The Burnt Lodge WSA, Bitter Creek WSA, and Sweet Grass Hills ACEC would not be available for the sale of commercial wood products.

#### Forest Product Sale Quantities

**Allowable Sale Quantity (ASQ):** The total level of timber that can be sold and harvested during a decade while assuring a continuous supply of timber in perpetuity. Management practices, assumptions, land use plans, and biological capacity are considered in arriving at the ASQ. The ASQ is usually made available on an average annual basis.

**Probable Sale Quantity (PSQ):** The allowable harvest level that can be maintained without decline over the long term if the schedule of harvests and regeneration are followed. PSQ recognizes a level of uncertainty in meeting the determined level; this uncertainty is typically based on other environmental factors that preclude harvesting at a particular time. PSQ is not a commitment to offer for sale a specific level of timber volume every year.

Wildland fire managed for resource benefit would not be considered. All wildfire would be fully suppressed.

## Alternatives B, C, D, and E (Preferred Alternative)

The BLM would offer forest products as opportunities arise. The probable sale quantity (PSQ) of timber is 664 MBF per year along with 4,000 tons of biomass per year. The PSQ does not include quantities due to salvage timber activities from wildfire, insect, or weather events. Management of old growth stands would follow the Old-Growth Forest Types of the Northern Region (USFS 1992) for overall guidance and direction.

The Burnt Lodge and Bitter Creek WSAs would not be available for the sale of wood products. This includes personal use wood products (e.g., Christmas trees, firewood, post and poles).

The BLM would allow for a full range of forest health treatments in the Sweet Grass Hills ACEC that may include the sale of wood products. Landscape-level projects that focus on forest health rather than product quantity allow for an array of silvicultural treatments that mimic ecological processes. The sale of wood products resulting from forest health treatments would be a secondary benefit and would not be a reason for undertaking the treatments. The ACEC would not be open for incidental personal use wood products.

As forest health treatments and/or natural disturbances take place that reduce the risk of dangerous and high severity fire events, management may adjust suppression strategies to become more cost effective. Additionally, as forest treatments occur that result in conditions approaching historical fire regimes, natural fire may be managed for the benefit of the forested resource.

## Lands and Realty

### Land Ownership Adjustment

*Goal  
Improve resource management efficiency and provide public benefits as opportunities arise.*

#### Objectives

Retain lands with high resource values and adjust land ownership to improve land pattern and management efficiency, enhance public access and resource values, and/or meet public and community needs.

#### Decisions Common to All Alternatives

Section 102(a)(1) of FLPMA provides that "... the public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular tract would serve the national interest...." Management of land ownership adjustments would be based on three categories of BLM land as described below.

- **Category 1 (Retention):** BLM lands in Category 1 are identified for retention and include lands with high resource values. These lands tend to be fairly well blocked in terms of land pattern. Included in this category are areas such as Wilderness Study Areas, National Historic Trails, and ACECs. Acquisition of lands or interests in lands would receive priority if located within and/or adjacent to BLM land in Category 1 provided the lands meet one or more of the acquisition criteria found in Appendix F.1, Land Ownership Adjustment Criteria.
- **Category 2 (Retention-Limited Disposal):** BLM lands in Category 2 are generally identified for retention in public ownership. Category 2 includes BLM lands that are fairly well blocked as well as some smaller, isolated

parcels as long as they are larger than a quarter-section or its equivalent or half-section or its equivalent. Limited disposal actions involving BLM lands within this category could occur.

BLM lands designated as Category 2 would not be available for sale. However, BLM lands within this category could be exchanged for lands or interests in lands located anywhere in Montana. In addition, parcels of BLM land within Category 2 may be identified for transfer under the Recreation and Public Purposes (R&PP) Act. Such recreation or public purpose use could be considered on a case-by-case basis for such facilities as schools or other public administration, parks or recreation areas, or historic preservation. Also, BLM land within Category 2 could be considered for airport purposes under the Airport and Airway Improvement Act, for public agency jurisdictional transfer, or for State Indemnity Selections on a case-by-case basis.

BLM lands in Category 2 may contain significant resource values protected by law or policy, and any disposal action is contingent upon prior review and approval. If actions cannot be taken to adequately mitigate impacts from disposal of those lands, the parcels would be retained. Acquisition of lands or interests in lands located in or adjacent to Category 2 would be considered in accordance with the acquisition criteria found in Appendix F.1, Land Ownership Adjustment Criteria.

- **Category 3 (Disposal):** BLM lands in Category 3 are identified for disposal through any method, including sale. These lands generally are surrounded by private land with no legal access, or have been selected for disposal by the BLM due to management issues. BLM land parcels in this category are relatively smaller in size. These parcels typically range in size from a quarter to a half section but would vary in acreage.

BLM lands in Category 3 would be available for disposal through exchange for lands or interests in lands located anywhere within Montana. Those parcels which meet the sale criteria of section 203(a)(1) of FLPMA could be made available for sale. However, disposal of Category 3 lands by exchange would have priority over disposal by sale. In addition, parcels of BLM land within Category 3 may be identified for transfer under the R&PP Act. Such recreation or public purpose use could be considered on a case-by-case basis for such facilities as schools or other public administration, parks or recreation areas, or historic preservation. Also, BLM land within Category 3 could be considered for airport purposes under the Airport and Airway Improvement Act, for public agency jurisdictional transfer, or for State Indemnity Selections on a case-by-case basis.

Some BLM lands in Category 3 may contain significant resource values protected by law or policy and any disposal action is contingent upon prior review and approval. If actions cannot be taken to adequately mitigate impacts from disposal of those lands, the parcels would be retained as Category 1 or 2.

All land ownership adjustment proposals, whether land exchange, acquisition of land or interests in land, or disposal, would be subject to environmental review including all biological reports, cultural and paleontological inventories, and hazardous materials assessments, as well as standards for boundary evidence certificate(s), water rights documentation, and mineral potential report, if the mineral estate is included in the proposal.

Exchange would be the preferred method of land ownership adjustment. In accordance with policy, all lands to be exchanged must be within Montana (43 CFR §2200.0(d) (2008)). If the BLM disposal parcels contain public access routes, the access rights would be reserved to the United States in the conveyance.

Disposal would be considered on a case-by-case basis through sale (by competitive, modified competitive, or direct methods). Applications for R&PP, jurisdictional transfer to other federal agencies, Color-of-Title, Desert Land Entry,

#### Recreation and Public Purposes (R&PP) Act

The Act authorizes the sale or lease of BLM lands for recreational or public purposes to State and local governments and to qualified nonprofit organizations. Examples of typical uses under the Act are historic monument sites, campgrounds, schools, fire houses, law enforcement facilities, municipal facilities, landfills, hospitals, parks, and fairgrounds.

Department of the Interior regulations for the R&PP Act are found in Title 43 of the Code of Federal Regulations (43 CFR), Parts 2740 (Sales) and 2912 (Leases).

Indian Allotment, Carey Act Grant, State Grant, Railroad Grants, and Airport Grants would be considered and reviewed on a case-by-case basis.

Acquisition would primarily be accomplished through purchase of land or interests in land (conservation easements) from willing landowners using the Land and Water Conservation Fund (LWCF) or other funding sources. Acquisition of land may also be accomplished through donations to the BLM by nonfederal landowners. The BLM may acquire conservation easements to preserve open space, enhance public access, and protect important resource values.

Land acquired adjacent to special management areas such as Wilderness Areas or ACECs would be subject to the management guidance for that area.

**Alternative A (Current Management)**

Land ownership adjustments would be considered on a case-by-case basis, primarily based on identified disposal parcels and on current acquisition, disposal and retention criteria.

Approximately 90,000 acres were previously identified for disposal in the planning area (Table 2.9) (BLM 1988 and BLM 1994a). Disposals may be made through exchange or the sale of specifically identified parcels if they meet sale criteria found in section 203(a) of FLPMA. Lands on the disposal list or that meet the disposal criteria would be available for State Indemnity Selections, airport leases, and R&PP Act conveyances on a case-by-case basis.

**Land and Water Conservation Fund (LWCF)**

*LWCF:* LWCF monies come from the Outer Continental Shelf oil and gas leasing royalties, GSA surplus property sales, and federal motorboat fuel tax, and are used for the purchase of land which meets the established criteria. Congress annually appropriates the funds between competing proposals submitted from the BLM, Fish and Wildlife Service, Forest Service, and National Park Service.

**Table 2.9  
BLM Land by Land Adjustment Category (Acres)**

<i>Category</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
1 – Retention	N/A	610,678	484,805	332,283	297,559
2 – Retention/ Limited Disposal	90,114	1,813,668	1,939,218	2,074,881	2,126,465
3 – Disposal		13,541	13,541	30,310	13,541

During any purchase or exchange action, the BLM would attempt to maintain the respective county tax base and allow no overall net gain in BLM land over the life of this plan. The BLM would monitor land tenure adjustments to identify potential problems in achieving this objective. BLM land may be sold to facilitate a purchase or exchange action or maintain the respective county tax base.

**Alternatives B and C**

All lands within special management areas (WSAs, ACECs, etc.) and areas managed for wilderness characteristics would be designated as Category 1 (retention) lands. Table 2.9 shows by alternative the BLM lands designated as Category 1.

BLM land designated as Category 3 (disposal) is shown by alternative in Table 2.9 and Appendix F.2 provides the legal description of the disposal parcels. Maps F.1 through F.8 in Appendix F.2 show the disposal parcels for Alternative E, the Preferred Alternative. The remaining BLM land would be designated as Category 2.

Lands or interests in lands brought forward by willing landowners would be considered for acquisition provided they meet one or more of the acquisition criteria listed in Appendix F.1, Land Ownership Adjustment Criteria. The offered lands surrounded by or adjacent to BLM lands in Category 1 would be considered acquisition priorities over lands surrounded by or adjacent to BLM lands in Category 2. Newly acquired lands that meet retention criteria (Category 1)

would be designated as retention lands; all other acquired lands would be designated as Category 2. No lands meeting Category 3 criteria would be considered for acquisition.

The need to protect newly acquired lands would be considered as part of the environmental review prior to acquisition and, if withdrawn, the lands would be managed under the terms and conditions of the withdrawal.

Federal minerals underlying nonfederal surface would generally be retained in federal ownership. However, an exchange of this type of mineral estate may be considered on a case-by-case basis if found to be in the public interest. The sale of this type of mineral interest under section 209(b) of FLPMA could be considered only if the requirements of this same section were met. Conversely, the acquisition of patented mining claims would also be addressed on a case-by-case basis.

Land tenure adjustments would follow BLM guidance and policies for acquisitions and disposals. It is not the intention of the BLM to have a net gain in federal ownership, but rather to provide exceptional national public lands that are accessible to the public.

## Alternative D

All lands within special management areas (WSAs, ACECs, etc.) would be designated as Category 1 (retention) lands. Table 2.9 shows the BLM lands designated as Category 1 by alternative.

BLM land designated as Category 3 (disposal) is shown in Table 2.9 by alternative and Appendix F.2 provides the legal description of the disposal parcels. Maps F.1 through F.8 in Appendix F.2 show the disposal parcels for Alternative E, the Preferred Alternative. The remaining BLM land would be designated as Category 2.

Lands or interests in lands brought forward by willing landowners would be considered for acquisition provided they meet one or more of the acquisition criteria listed in Appendix F.1, Land Ownership Adjustment Criteria. The offered lands surrounded by or adjacent to BLM lands in Category 1 would be considered acquisition priorities over lands surrounded by or adjacent to BLM lands in Category 2. Newly acquired lands that meet retention criteria (Category 1) would be designated as retention lands; all other acquired lands would be designated as Category 2. No lands meeting Category 3 criteria would be considered for acquisition.

The need to protect newly acquired lands would be considered as part of the environmental review prior to acquisition and, if withdrawn, the lands would be managed under the terms and conditions of the withdrawal.

Federal minerals underlying nonfederal surface would generally be retained in federal ownership. However, an exchange of this type of mineral estate may be considered on a case-by-case basis if found to be in the public interest. The sale of this type of mineral interest under section 209(b) of FLPMA could be considered only if the requirements of this same section were met. Conversely, the acquisition of patented mining claims would also be addressed on a case-by-case basis.

Land tenure adjustments would follow BLM guidance and policies for acquisitions and disposals. It is not the intention of the BLM to have a net gain in federal ownership, but rather to provide exceptional national public lands that are accessible to the public.

## Alternative E (Preferred Alternative)

All lands within special management areas (WSAs, ACECs, etc.) would be designated as Category 1 (retention) lands. Table 2.9 shows by alternative the BLM lands designated as Category 1.

### Perpetual Exclusive Easement

A perpetual exclusive easement is a perpetual right acquired by the United States to use land of another for a particular purpose, such right being acquired exclusively by the United States and excluding others from enjoying the same privilege unless specifically authorized by the United States. An exclusive road easement grants control to the United States and may allow it to authorize third party use and set road use rules. (BLM Handbook H-2100-1)

When obtaining a road easement, the BLM's preferred option is to gain an exclusive easement in order to obtain the right for the general public to use and access the road.

Lands classified as priority habitat and general habitat (or habitat classification appropriate for the sub-region) for Greater Sage-Grouse will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.

Lands with wilderness characteristics would be identified for retention or very limited disposal (Category 2). The BLM land in these areas would not be disposed of other than by exchange and only when necessary to further protect or enhance the wilderness characteristics.

BLM land designated as Category 3 (disposal) is shown by alternative in Table 2.9 and Appendix F.2 provides the legal description of the disposal parcels. Maps F.1 through F.8 in Appendix F.2 show the disposal parcels for Alternative E, the Preferred Alternative. The remaining BLM land would be designated as Category 2.

Lands or interests in lands brought forward by willing landowners would be considered for acquisition provided they meet one or more of the acquisition criteria listed in Appendix F.1, Land Ownership Adjustment Criteria. The offered lands surrounded by or adjacent to BLM lands in Category 1 would be considered acquisition priorities over lands surrounded by or adjacent to BLM lands in Category 2. Newly acquired lands that meet retention criteria (Category 1) would be designated as retention lands; all other acquired lands would be designated as Category 2. No lands meeting Category 3 criteria would be considered for acquisition.

The need to protect newly acquired lands would be considered as part of the environmental review prior to acquisition and, if withdrawn, the lands would be managed under the terms and conditions of the withdrawal.

Federal minerals underlying nonfederal surface would generally be retained in federal ownership. However, an exchange of this type of mineral estate may be considered on a case-by-case basis if found to be in the public interest. The sale of this type of mineral interest under section 209(b) of FLPMA could be considered only if the requirements of this same section were met. Conversely, the acquisition of patented mining claims would also be addressed on a case-by-case basis.

Land tenure adjustments would follow DOI and BLM guidance and policies for acquisitions and disposals. It is not the intention of the BLM to have a net gain in federal ownership, but rather to provide exceptional national public lands that are accessible to the public.

## **Access**

### Goal

*Address public and administrative access needs across nonfederal lands.*

## **Objective**

Acquire or retain and mark access to BLM land in cooperation with private landowners; state, local and tribal governments; and other federal agencies in order to improve efficiency of multiple use management and to facilitate public enjoyment of these lands.

## **Decisions Common to All Alternatives**

All available methods would be used to acquire the legal rights for public and administrative access across nonfederal land to BLM land. Easement acquisition through donation or purchase would be the preferred method of acquiring legal access. Reciprocal rights, exchanges, fee purchases, and reserving public access in disposal actions are other appropriate methods of securing access. As a last resort, the Secretary of the Interior may exercise the power of eminent domain only if necessary to secure access to BLM lands, and then only if the lands so acquired are confined to as narrow a corridor as is necessary to serve such purpose (43 U.S.C. 1715).

The BLM would generally acquire on behalf of the United States and its assigns permanent, exclusive, unrestrictive, and assignable rights of access. This allows the BLM to maintain the road or trail and control commercial uses for road

maintenance purposes. Any proposed commercial uses would require that a right-of-way application be submitted and approved prior to use. A standard 60-foot-wide easement would be acquired unless road design or resource management necessitates a different width.

The BLM is a partner in the Respected Access Campaign and would promote the concept of Respected Access is Open Access through educational opportunities and signage (more information is available at <http://treadlightly.org/programs/respected-access-campaign/>).

As per Executive Order 13443 and BLM Manual 8342, improving access to public lands is a priority for the BLM and would be one of the objectives of subsequent transportation and travel management planning.

All access will be documented on the BLM land tenure records system with associated geospatial data to BLM corporate standards.

### **Alternative A (Current Management)**

Legal public or administrative access would be obtained from willing landowners on a case-by-case basis as the need or opportunity arises. Access acquisition efforts would be concentrated on areas with important resource values, larger blocks of BLM land, areas with high public demand for access, and in areas with substantial BLM improvements. Easement acquisition would be focused in areas with completed route analyses.

### **Alternatives B, C, D, and E (Preferred Alternative)**

Legal public or administrative access would be pursued from willing landowners on a case-by-case basis as the need or opportunity arises. Acquisition efforts would be focused on Category 1 and 2 lands where no legal public access exists or where additional access is necessary to meet management objectives.

## **Facilities**

*Goal*  
*Provide and manage adequate administrative and other facilities based on public and agency needs.*

### **Objective**

Ensure facilities are maintained to meet public health and safety requirements.

### **Decisions Common to All Alternatives**

Recreation sites, administrative sites, buildings and communication towers would be maintained within Bureau standards to reduce deferred maintenance costs and meet public health and safety requirements. Comprehensive condition assessments would be conducted for all maintained facilities and maintenance actions would be implemented if necessary. These activities would be coordinated with other federal, state, and local government agencies, private landowners and the general public as needed.

Existing and new facilities would be managed through FAMS. Directional and informative signs would be installed based on public need and available funding. All signs would conform to BLM policy.

## Rights-of-Way, Leases and Permits

### Goals

*Consider all requests for rights-of-way, land use permits, and leases.*

*Designate transportation and utility corridors, as well as avoidance and/or exclusion areas.*

### Objective

Address the needs of industry, utilities, the public, or government entities for land use authorizations while minimizing adverse impacts to other resource values.

### Decisions Common to All Alternatives

Requests for land use authorizations (rights-of-way, leases or permits) would be analyzed and mitigation measures applied on a case-by-case basis through the environmental review process. Terms and conditions for rights-of-way, corridors, and development areas (oil and gas) would incorporate applicable BMPs, current professional practice, and recent scientific findings. All rights-of-way would comply with Streamside Management Zone restrictions and guidelines where applicable. In accordance with current policy, land use authorizations would not be issued for uses which involve the disposal or storage of materials which could contaminate the land (e.g., hazardous waste disposal sites, landfills, rifle ranges, etc.).

Nonfederal landowners who are surrounded by BLM land would be allowed a degree of access that would provide for the reasonable use and enjoyment of the nonfederal land (BLM Manual 2801).

Applications for rights-of-way from holders of valid, existing mining claims in the Sweet Grass Hills would be considered on a case-by-case basis with appropriate mitigation.

### Communication Sites

New communication site users would be grouped into suitable existing sites to reduce impacts and expedite application processing. Communication site management plans would be completed prior to authorizing communication site uses in new areas. The following communication sites are designated: Mount Royal (Sweet Grass Hills), Sheep Coulee, Kevin Rim, Harlem, Antoine Butte, Saco Hills, Larb Hills, Loring, Whitewater, and Rose Hill. In the Little Rocky Mountains, communication sites would be located only on Antoine Butte. In the Sweet Grass Hills, communication sites would not be allowed on West and Middle Buttes. The use of alternative energy sources would be considered where electric power is not available.

### Revised Statute 2477

Revised Statute (R.S.) 2477, which provided that “[t]he right of way for the construction of highways over public lands, not reserved for public uses, is hereby granted,” was repealed on October 21, 1976, by the Federal Land Policy and Management Act. FLPMA did not terminate valid rights-of-way established under R.S. 2477 prior to its repeal.

Current guidance on the BLM's authority to recognize or adjudicate claims under R.S. 2477 is contained in WO IM No. 2010-016: Clarification of the Acting Director's February 20, 2009 Memorandum on R.S. 2477 Claims. Under this policy the BLM will not process or review R.S. 2477 claims under a Recordable Disclaimer of Interest ruling. This

#### Corridors, Exclusion Areas and Avoidance Areas

**Designated right-of-way corridor:** a parcel of land with specific boundaries identified by law, Secretarial order, the land-use planning process, or other management decision, as being a preferred location for existing and future rights-of-way and facilities. The corridor may be suitable to accommodate more than one type of right-of-way use or facility or one or more right-of-way uses or facilities which are similar, identical, or compatible (43 CFR 2801.5(b)(9)).

**Exclusion Areas:** Areas which are not available for location of rights-of-way under any conditions (BLM Land Use Planning Handbook, Appendix C).

**Avoidance Areas:** Areas to be avoided but may be available for location of rights-of-way with special stipulations (BLM Land Use Planning Handbook, Appendix C).

policy does not affect existing valid R.S. 2477 rights-of-way consistent to Section 315 of FLPMA. Determinations on the validity of an R.S. 2477 claim are currently only available through federal court.

### Alternative A (Current Management)

New right-of-way facilities would be located within or adjacent to existing rights-of-way, or corridors, to the extent practical, in order to minimize adverse environmental impacts and the proliferation of separate rights-of-way. New rights-of-way would include appropriate BMPs (Appendix C). The latest version of Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012) and the BMPs established by the BLM Wind Energy Development Programmatic EIS and Record of Decision (BLM 2006c) would be implemented in the construction and operation of right-of-way facilities.

### Corridors

The Northern Border Corridor, designated in 1979 (44 FR 175, pp. 52341-52342), would be retained as a transportation and utility corridor with a width of 4 1/2 miles. This corridor would include 63,371 acres of BLM land (Table 2.10 and Map W.1, which is available at <http://blm.gov/8qkd>).

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
Northern Border Corridor	4 1/2 miles 63,371 acres	1 mile 9,119 acres	2 miles 25,688 acres	N/A	N/A
State Secondary Highway 24	N/A	N/A	N/A	N/A	1 mile 761 acres
State Secondary Highway 325	N/A	1 mile 12 acres	2 miles 179 acres	N/A	1 mile 12 acres
State Secondary Highway 537	N/A	1 mile 3,048 acres	2 miles 6,686 acres	N/A	N/A
U.S. Highway 2	N/A	1 mile 5,091 acres	2 miles 12,238 acres	N/A	1 mile 5,091 acres
U.S. Highway 87	N/A	N/A	N/A	N/A	1 mile 287 acres
U.S. Highway 191	N/A	1 mile 13,808 acres	2 miles 31,339 acres	N/A	1 mile 13,733 acres

### Exclusion Areas

The Bitter Creek and Burnt Lodge WSAs would be exclusion areas (74,420 acres) (Table 2.11). If these WSAs are not designated by Congress as wilderness areas, Bitter Creek and Burnt Lodge would become avoidance areas.

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Exclusion Areas</b>					
Bitter Creek WSA	60,693	60,693	60,693	60,693	60,693
Burnt Lodge WSA	13,727	13,727	13,727	13,727	13,727
Grassland Bird/ Greater Sage-Grouse Priority Areas ACEC	N/A**	461,220	N/A**	N/A**	N/A**
Greater Sage-Grouse	N/A**	930,265	N/A**	N/A**	N/A**

<b>Table 2.11 Rights-of-Way Exclusion and Avoidance Areas by Alternative (Acres)*</b>					
	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
Protection Priority Area ACEC					
Wilderness Characteristics Areas	N/A	0	51,055	0	0
<b>Avoidance Areas</b>					
Azure Cave ACEC	0	141	141	141	141
Big Bend of the Milk River ACEC	0	1,972	1,972	1,972	1,972
Bitter Creek ACEC	0	60,693	60,693	60,693	60,693
Crucial Winter Range (antelope, elk, mule deer, Greater Sage-Grouse)	0	8,383	62,577	0	66,034
Recreation Sites	N/A	936	59,572	25,155	61,803
Frenchman Breaks ACEC	N/A**	N/A**	42,020	63,482	42,020
Grassland Bird/Greater Sage-Grouse Priority Areas	N/A**	0	298,772	N/A**	426,355
Greater Sage-Grouse Protection Priority Area	N/A**	0	930,265	N/A**	1,006,312
Kevin Rim ACEC	4,557	4,557	4,557	4,557	4,557
Little Rocky Mountains ACEC	N/A**	N/A**	N/A**	27,177	N/A**
Little Rocky Mountains TCP	0	0	0	0	30,648
Malta Geological ACEC	N/A**	6,153	6,153	6,153	6,153
Mountain Plover ACEC	0	24,762	24,762	24,762	24,762
National Historic Trails	0	20,141	9,005	4,365	8,970
Sweet Grass Hills ACEC	7,419	7,419	7,419	7,419	7,419
Sweet Grass Hills TCP	0	0	0	0	7,718
VRM Class I	N/A	90,032	74,506	74,506	74,506
VRM Class II	0	977,396	0	0	0
Wilderness Characteristics	N/A	386,462	177,340	0	16,393
Winter Range (antelope, elk, mule deer, Greater Sage-Grouse)	0	583,341	0	0	0
Woody Island ACEC	N/A**	N/A**	22,411	22,411	32,869
Zortman/Landusky Mine Reclamation ACEC	N/A**	3,609	3,609	N/A**	2,682

\* Acreage totals may overlap (e.g., Greater Sage-Grouse Protection Priority Areas and winter range).

\*\* The area would not be designated an ACEC or managed as a priority area under this alternative.

## Avoidance Areas

The BLM would designate two avoidance areas for the issuance of rights-of-way (11,976 acres) (Table 2.11). In these areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the area.

Riparian and wetland areas would be avoidance areas in the western (West HiLine RMP) portion of the planning area.

## Alternative B

New right-of-way facilities would be located within or adjacent to existing rights-of-way, or corridors, to the extent practical, in order to minimize adverse environmental impacts and the proliferation of separate rights-of-way. New rights-of-way would include appropriate BMPs and mitigation (Appendix C and Appendix M). The latest version of Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012) and the BMPs established by the BLM Wind Energy Development Programmatic EIS and Record of Decision (BLM 2006c) would be implemented in the construction and operation of right-of-way facilities.

## Corridors

Five utility and transportation corridors would be designated: Northern Border Corridor; U.S. Highway Nos. 2 and 191; and State Secondary Highway Nos. 325 and 537 (Table 2.10 and Map W.1, which is available at <http://blm.gov/8qkd>). The corridors would be available for all uses (e.g., powerlines, pipelines). The corridor width would be restricted to 1 mile, or 1/2 mile from the centerline. These corridors would include 31,078 acres of BLM land.

The Northern Border Corridor would not include the Bitter Creek WSA. Within the WSA, management would be subject to the guidance that protects the resource values for which the WSA was designated.

Applicants for new utility and transportation rights-of-way would be encouraged to locate their facilities within one of these corridors.

## Exclusion Areas

The Bitter Creek WSA, Burnt Lodge WSA, Grassland Bird/Greater Sage-Grouse Priority Areas ACEC, and Greater Sage-Grouse Protection Priority Area ACEC would be exclusion areas (1,465,906 acres) (Table 2.11), subject to the existing Northern Border Pipeline right-of-way within the Bitter Creek WSA. If the WSAs are not designated by Congress as wilderness areas, Bitter Creek and Burnt Lodge would remain exclusion areas.

## Avoidance Areas

The BLM would designate 15 avoidance areas (2,175,998 acres) for the issuance of rights-of-way (Table 2.11). In these areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the area.

During site-specific planning, riparian areas with unique values (e.g., where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that require surface disturbance and/or permanent surface occupancy).

## Alternative C

New right-of-way facilities would be located within or adjacent to existing rights-of-way, or corridors, to the extent practical, in order to minimize adverse environmental impacts and the proliferation of separate rights-of-way. New rights-of-way would include appropriate BMPs and mitigation (Appendices C and M). The latest version of Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012) and the BMPs established by the BLM

Wind Energy Development Programmatic EIS and Record of Decision (BLM 2006c) would be implemented in the construction and operation of right-of-way facilities.

### **Corridors**

Five utility and transportation corridors would be designated: Northern Border Corridor; U.S. Highway 191; U.S. Highway 2; and State Secondary Highway Nos. 325 and 537 (Table 2.10 and Map W.2, which is available at <http://blm.gov/8qkd>). The corridors would be available for all uses (e.g., powerlines, pipelines). The corridor width would be restricted to 2 miles, or 1 mile from the centerline. These corridors would include 76,130 acres of BLM land.

Within the Bitter Creek WSA, management of the Northern Border Corridor would be subject to guidance that protects the resource values for which the WSA was designated. Within the Frenchman Breaks ACEC, management of the Northern Border Corridor would be subject to guidance that protects the resource values of the area.

Applicants for new utility and transportation rights-of-way would be encouraged to locate their facilities within one of these corridors.

### **Exclusion Areas**

The Bitter Creek WSA, Burnt Lodge WSA, and three areas with wilderness characteristics would be exclusion areas (125,475 acres) (Table 2.11), subject to the existing Northern Border Pipeline right-of-way within the Bitter Creek WSA. If the WSAs are not designated by Congress as wilderness areas, Bitter Creek and Burnt Lodge would become avoidance areas.

### **Avoidance Areas**

The BLM would designate 17 avoidance areas for the issuance of rights-of-way (1,796,664 acres) (Table 2.11). In these areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the area.

During site-specific planning, riparian areas with unique values (e.g., where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that require surface disturbance and/or permanent surface occupancy).

## **Alternative D**

### **Corridors**

The BLM would not designate corridors.

### **Exclusion Areas**

The Bitter Creek and Burnt Lodge WSAs would be exclusion areas (74,420 acres) (Table 2.11). If the Bitter Creek WSA is not designated by Congress as wilderness, the area would remain an exclusion area. If the Burnt Lodge WSA is not designated by Congress as wilderness, the area would become an avoidance area.

### **Avoidance Areas**

The BLM would designate 13 avoidance areas for the issuance of rights-of-way (322,792 acres) (Table 2.11). In these areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the area.

During site-specific planning, riparian areas with unique values (e.g., where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that require surface disturbance and/or permanent surface occupancy).

### **Alternative E (Preferred Alternative)**

New right-of-way facilities would be located within or adjacent to existing rights-of-way, or corridors, to the extent practical, in order to minimize adverse environmental impacts and the proliferation of separate rights-of-way. New rights-of-way would include appropriate BMPs and mitigation (Appendices C and M). The latest version of Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012) and the BMPs established by the BLM Wind Energy Development Programmatic EIS and Record of Decision (BLM 2006c) would be implemented in the construction and operation of right-of-way facilities.

#### **Corridors**

Five utility and transportation corridors would be designated: U.S. Highway 2, U.S. Highway 87; U.S. Highway 191; and State Secondary Highway Nos. 24 and 325 (Table 2.10 and Map 2.5, which is located at the end of Chapter 2). The corridor for U.S. Highway 191 would exclude the Big Bend of the Milk River ACEC. The corridors would be available for all uses (e.g., powerlines, pipelines). The corridor width would be restricted to 1 mile, or 1/2 mile from the centerline. These corridors would include 19,884 acres of BLM land. Applicants for new utility and transportation rights-of-way would be encouraged to locate their facility within one of these corridors.

Within the Bitter Creek WSA, management of the Northern Border Pipeline right-of-way would be subject to guidance that protects the resource values for which the WSA was designated. Within the Frenchman Breaks ACEC, management of the Northern Border Pipeline right-of-way would be subject to guidance that protects the resource values of the area.

#### **Exclusion Areas**

The Bitter Creek and Burnt Lodge WSAs would be exclusion areas (74,420 acres) (Table 2.11 and Map 2.5). If the Bitter Creek WSA is not designated by Congress as wilderness, the area would remain an exclusion area. If the Burnt Lodge WSA is not designated by Congress as wilderness, the area would become an avoidance area.

#### **Avoidance Areas**

The BLM would designate 19 avoidance areas for the issuance of rights-of-way (1,672,698 acres) (Table 2.11 and Map 2.5). In these areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the area.

During site-specific planning, riparian areas with unique values (e.g., where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that requires surface disturbance and/or permanent surface occupancy).

### **Unauthorized Use**

#### **Decisions Common to All Alternatives**

The HiLine District attempts to reduce trespass through prevention, detection, and resolution. The priority for resolving trespass in an area is accorded to newly discovered ongoing uses, developments, or occupancies where resource damage is occurring and/or where there is a significant loss of revenue to the United States. In such cases, resolution is needed to halt and prevent further environmental degradation or revenue loss. Historic trespass cases where little or no resources damage is occurring are resolved as workloads permit.

### **Unauthorized Use, Occupancy, and Development**

**Unauthorized Use** – Activities that do not appreciably alter the physical character of BLM land or vegetative resources. Some examples of unauthorized use include the abandonment of property or trash, enclosures, and use of existing roads, primitive roads and trails for purposes which require a use fee or right-of-way.

**Unauthorized Occupancy** – Activities which result in full or part-time human occupancy or use. An example would be the construction, placement, occupancy, or assertion of ownership of a facility or structure (cabin, house, natural shelter, trailer, etc.) on BLM land.

**Unauthorized Development** – An activity that physically alters the character of BLM land or vegetative resources. Examples include cultivation of the land and road or trail construction/realignment.

## **Withdrawals**

### Goal

*Protect significant resources or significant government investment.*

### **Objective**

Utilize withdrawal actions with the least restrictive measures and of the minimum size necessary to accomplish the required purpose.

### **Decisions Common to All Alternatives**

New withdrawals would be pursued where other agency actions are inadequate to protect critical resource values or federal investments. Examples of such resource values include cultural or historic sites, crucial habitat for threatened and endangered species, or scenic values. Federal investments that may need the protection of a withdrawal could include administrative sites or extensively developed recreation areas. New withdrawals would include only the minimum area required to meet the purpose of the withdrawal.

New withdrawal proposals that result in a transfer of jurisdiction to another federal agency would be considered on a case-by-case basis. Other agency requests for new withdrawals, or modification, extension, or revocation of existing withdrawals would be considered.

Existing withdrawals would be reviewed prior to their expiration to determine if a need exists to extend and/or modify the withdrawal. Should the review indicate that the purpose for which the lands were withdrawn is no longer valid, the withdrawal would be allowed to expire. If the purpose remains valid for a portion of the withdrawn lands, the withdrawal would be modified and extended.

Existing and new proposed mineral withdrawals are addressed under the Solid Minerals – Locatable section in Chapter 2.

If lands are returned to BLM management through the withdrawal process, they would be managed consistent with adjacent public lands.

## Livestock Grazing

### Goal

*Provide opportunities on the public rangelands for a maintainable level of livestock grazing consistent with multiple use and sustained yield.*

### Objective

Manage livestock grazing to provide a sustained flow of local economic benefits and protect resource values.

### Decisions Common to All Alternatives

Livestock would continue to be allocated approximately 386,600 animal unit months (AUMs) of forage each year from BLM land in the planning area (Appendix G). Approximately 2,390,000 acres would be open to livestock grazing and 47,000 acres would be closed to livestock grazing except as needed for resource management.

Actions consistent with achieving or maintaining the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota (BLM 1997a and Appendix H) would continue to be incorporated into livestock grazing permits and leases and would apply to all livestock grazing activities. Under the grazing regulations if Standards are not met the authorized officer would take appropriate action as soon as practical but not later than the start of the next grazing season upon determining that grazing management needs to be modified to ensure progress toward conformance with the guidelines (43 CFR 4180.2(c)(3)). A no grazing alternative would be considered in environmental assessments prepared as part of the grazing permit renewal process as outlined in IM No. MT-2012-042.

Flexibility is authorized in grazing permits to allow for livestock management needs and fluctuating climatic conditions. Flexibility afforded to livestock management practices includes adjustment of on/off dates and livestock numbers, but management must be within the overall terms of the grazing permit, the permitted season of use and the established carrying capacity of the allotment. Any deviations from the terms and conditions of the grazing permit should be applied for beforehand and would require environmental review.

All allotments have been assigned to a management category depending on the resources and problems contained in the allotment. The three categories of Improve (**I**), Maintain (**M**) and Custodial (**C**) reflect resource conditions, resource potential and economic considerations for each allotment. The terms improve, maintain and custodial relate to resource objectives for the allotment (i.e., whether conditions need to be improved or maintained, or if custodial management is appropriate because of relatively limited resources and resource problems). The BLM's allotment categorization system would continue to determine priorities for processing grazing authorizations, implementing grazing activity plans, spending range improvement funds and monitoring. Allotments would be subject to recategorization based on changes in resource conditions as determined through monitoring and land health evaluations consistent with BLM policy. Future changes in allotment categories would be documented through plan maintenance.

Developed recreation sites would not be allocated for livestock grazing.

Existing Allotment Management Plans (AMPs) would continue to be implemented including associated range improvement projects. AMPs would be updated and revised in response to monitoring and/or permit transfers. New AMPs would be developed and implemented to direct site-specific management of livestock grazing after completion of rangeland health assessments.

Livestock grazing would be managed through monitoring of AMPs or similar grazing plans and supervision of grazing use as provided under the grazing regulations. Adjustments to livestock management practices or livestock numbers including increases or decreases would be made based on results of monitoring studies, rangeland health assessments, allotment evaluations, and through an environmental review process. Where opportunities occur, cooperative efforts to utilize permittee/lessee monitoring and integrated ranch planning would be emphasized.

If monitoring data demonstrate that livestock use on an allotment is adversely affecting Greater Sage-Grouse or their habitat, the terms and conditions of grazing permits may be modified (43 CFR 4130.3, 4130.3-1, 4130.3-2), or changes in active use (43 CFR 4110.3-3) could be considered in order to meet the standards for rangeland health as described in 43 CFR 4180 and the Lewistown Standards for Rangeland Health and Guidelines for Livestock Grazing Management or to otherwise manage, maintain, or improve sage-grouse habitat.

Appropriate indicators and measurements specific to habitat for Greater Sage-Grouse, or any other wildlife species of concern, would be evaluated as part of standards and guidelines assessment (43 CFR 4180) and any necessary and appropriate habitat objectives specific to meeting the wildlife health standard for the site would be identified and incorporated into AMPs or the terms and conditions (43 CFR 4130.3, 4130.3-1, 4130.3-2) of livestock grazing permits.

### Alternative A (Current Management)

Most unallocated parcels would remain available for livestock grazing. The Little Rocky Mountains and Whitewater Lake areas would remain closed to livestock grazing. The Cree Crossing Allotment No. 05302 adjacent to the Milk River would remain closed to livestock grazing for recreation values. The Dry Gulch Allotment No. 05602 and Montana Gulch Allotment No. 05603 would continue to be authorized under a temporary grazing permit following the procedure in 43 CFR 4130.6-2.

Grazing allocations on newly acquired land would be based on management needs and objectives for the acquisition. The allocation may range from zero to full capacity and would be monitored after completion of an activity plan to adjust grazing as needed to meet objectives.

Yearling factors would be considered through individual AMPs.

### Alternative B

Most unpermitted parcels would remain available for livestock grazing. The Little Rocky Mountains Allotment No. 05630 and the Whitewater Lake Allotment No. 05068 would remain closed to livestock grazing except as needed for resource management. The Cree Crossing Allotment No. 05302 adjacent to the Milk River would remain closed to livestock grazing for recreation values. The 15 Mile Trailing Allotment No. 06237 would be closed to livestock grazing except as needed for livestock trailing purposes.

Allotments within the Greater Sage-Grouse Protection Priority Area ACEC and the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC would be high priority for reassessment of land health standards and processing grazing permit renewals as detailed in Appendix M.

If a permittee submits a relinquishment of grazing privileges for an allotment within these ACECs, retirement of grazing privileges would be considered in a site-specific environmental analysis that addresses the potential impacts (both positive and negative) to Greater Sage-Grouse. If the analysis does not support closing the allotment to grazing for the benefit of sage-grouse, the allotment would remain available for livestock grazing and would be designated as a reserve common allotment.

In cases where the use would differ from that authorized in the previous grazing permit/lease, other factors have developed to change the management circumstances, or land health standards are not being met because of livestock grazing, a new site-specific interdisciplinary environmental analysis would be undertaken prior to transferring or renewing a grazing permit/lease.

Newly acquired lands would be evaluated to determine if they should be designated as reserve common allotments, allocated for grazing, or designated as unavailable for livestock grazing in consideration of the management needs and objectives for the acquisition, with the exception of

<p><b>Grazing Relinquishment versus Retirement of Grazing Privileges</b></p> <p><i>Grazing Relinquishment:</i> The voluntary and permanent surrender by an existing permittee or lessee, (with concurrence of any base property lienholder(s)), of their priority (preference) to use a livestock forage allocation on public land as well as their permission to use this forage. Relinquishments do not require the consent or approval of the BLM. The BLM's receipt of a relinquishment is not a decision to close areas to livestock grazing.</p> <p><i>Retirement:</i> Ending livestock grazing on a specific area of land.</p>
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lands covered under 43 CFR 4110.1-1 (e.g., where lands have been acquired through purchase or exchange, and an agreement provides that the BLM would honor existing grazing permits or leases).

Allotments where grazing preference is relinquished or cancelled that are outside of priority sage-grouse habitat would remain available for livestock grazing and would be designated as reserve common allotments.

An activity plan would be developed that identifies how the reserve common allotment would be managed to maintain rangeland health and the procedures for selecting an applicant for using the allotment.

Yearling factors would not be considered.

## **Alternative C**

Most unpermitted parcels would remain available for livestock grazing. The Little Rocky Mountains Allotment No. 05630 and Whitewater Lake Allotment No. 05068 would remain closed to livestock grazing except as needed for resource management. The Cree Crossing Allotment No. 05302 adjacent to the Milk River would remain closed to livestock grazing for recreation values. The 15 Mile Trailing Allotment No. 06237 would be closed to livestock grazing except as needed for livestock trailing purposes.

Allotments within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas would be high priority for reassessment of land health standards and processing grazing permit renewals as detailed in Appendix M.

In cases where the use would substantially differ from that authorized in the previous grazing permit/lease, other factors have developed to change the management circumstances, or land health standards are not being met because of livestock grazing, a site-specific interdisciplinary environmental review would be undertaken.

Newly acquired lands would be evaluated to determine if they should be designated as reserve common allotments, allocated for grazing, or designated as unavailable for livestock grazing in consideration of the management needs and objectives for the acquisition, with the exception of lands covered under 43 CFR 4110.1-1 (e.g., where lands have been acquired through purchase or exchange, and an agreement provides that the BLM would honor existing grazing permits or leases).

Allotments where grazing preference is relinquished or cancelled would remain available for livestock grazing and would be evaluated in a site-specific NEPA document to determine if they should be designated as reserve common allotments or reassigned.

An activity plan would be developed that identifies how the reserve common allotment would be managed to maintain rangeland health and the procedures for selecting an applicant to use the allotment.

Yearling factors would be considered according to the framework laid out in Appendix I.

## **Alternative D**

Most unpermitted parcels would remain available for livestock grazing. The Little Rocky Mountains Allotment No. 05630 and Whitewater Lake Allotment No. 05068 would remain closed to livestock grazing except as needed for resource management. The Cree Crossing Allotment No. 05302 adjacent to the Milk River would remain closed to livestock grazing for recreation values. The 15 Mile Trailing Allotment No. 06237 would be closed to livestock grazing except as needed for livestock trailing purposes.

In cases where the use would substantially differ from that authorized in the previous grazing permit/lease, other factors have developed to change the management circumstances, or land health standards are not being met because of livestock grazing, a site-specific interdisciplinary environmental review would be undertaken.

All newly acquired lands would be allocated for grazing.

Allotments where grazing preference is relinquished or cancelled during the life of the plan would be made available for qualified applicants.

Yearling factors would be considered according to the framework laid out in Appendix I.

## **Alternative E (Preferred Alternative)**

Most unpermitted parcels would remain available for livestock grazing. The Little Rocky Mountains Allotment No. 05630 and Whitewater Lake Allotment No. 05068 would remain closed to livestock grazing except as needed for resource management. The Cree Crossing Allotment No. 05302 adjacent to the Milk River would remain closed to livestock grazing for recreation values. The 15 Mile Trailing Allotment No. 06237 would be closed to livestock grazing except as needed for livestock trailing purposes.

Newly acquired lands would be evaluated to determine if they should be designated as reserve common allotments, allocated for grazing, or designated as unavailable for livestock grazing in consideration of the management needs and objectives for the acquisition, with the exception of lands covered under 43 CFR 4110.1-1 (e.g., where lands have been acquired through purchase or exchange, and an agreement provides that the BLM would honor existing grazing permits or leases).

Yearling factors would be considered according to the framework laid out in Appendix I.

## **Processing Grazing Permits/Leases**

The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in Sagebrush Focal Areas (SFAs) followed by PHMAs outside of the SFAs. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.

The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFAs and PHMAs will include specific management thresholds based on the Desired Conditions for Greater Sage-Grouse Habitat (habitat objectives) presented in Table 2.4 and Land Health Standards (43 CFR 4180.2) and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis. Adjustments to meet seasonal Sage-Grouse habitat requirements could include:

- season or timing of use;
- numbers of livestock (includes temporary non-use or livestock removal);
- distribution of livestock use;
- intensity of use; and
- type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats).

The BLM will develop criteria to prioritize the workload to process permits/leases (either fully processed or reauthorized based on the Appropriations rider, or issued under Section 402(c)(2) of FLPMA) and determine whether modification is necessary prior to renewal within PHMAs, beginning with those in SFAs. In setting priorities, those containing riparian areas and areas not meeting Land Health Standards (43 C.F.R. 4180) will take precedence. Potential criteria for prioritizing permit modifications could include:

- Are there riparian areas or wet meadows in the permit/lease area?
- Was current livestock grazing identified as a causal factor for not meeting Land Health Standards?
- Since the last allotment/watershed evaluation, is there current monitoring information to determine that the watershed/allotment is currently achieving or making significant progress towards achieving land health standards?
- Does the permit have terms and conditions adequate to ensure proper grazing practices to meet Greater Sage-Grouse habitat objectives found in the Special Status Species section of the land use plan?

- Is there data that indicates that the Greater Sage-Grouse habitat objectives, including the Habitat Objectives table found in the Special Status Species section of the land use plan are being met?
- Is there a request from the permittee to modify the terms and conditions of his/her permit?

Additionally, if an existing permit/lease within PHMAs requires modification because current grazing is a significant causal factor for not meeting the Land Health Standards, the BLM will prepare the appropriate NEPA analysis and issue the proposed/final grazing decision under 43 C.F.R. Subpart 4160, subject to administrative appeal and potential judicial challenge.

At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks.

### **Compliance Monitoring**

Allotments within SFAs, followed by those in other PHMA, and focusing on those with riparian areas, will be prioritized for monitoring to ensure compliance with the terms and conditions in the permits. The BLM will collect, at a minimum, the following monitoring data:

- Vegetation Condition
- Actual Use
- Utilization
- Use Supervision

## **Noxious Weeds and Other Invasive Non-Native Species**

### Goal

*Prevent the introduction and spread of noxious weeds and invasive species through cooperative Integrated Pest Management practices.*

### **Objectives**

Reduce the rate of spread for widely established invasive species, and prevent the establishment or spread of new invasive species.

### **Decisions Common to All Alternatives**

Montana state and county-designated noxious weeds would be managed according to the principles of integrated pest management found in Partners Against Weeds: An Action Plan for the Bureau of Land Management (BLM 1996c), Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (BLM 2007b); Montana Weed Management Plan (MWMP 2008); County Weed Control Act (MDA 2003); Noxious Weed Management Plan, Lewistown District (BLM 1992c); or the most current noxious weed management plan(s) developed within the planning area. These plans outline the principles of integrated pest management which would continue to be followed. The basic principles of integrated pest management include:

- education and awareness for staff, cooperators, and the public;
- prevention, early detection and rapid response for all noxious weed species;
- inventory of public and cooperator lands for noxious weeds;
- control of noxious weeds by various methods that include cultural, physical, biological, and chemical controls or other land practices; and
- monitoring of treatment areas.

The State of Montana currently has 34 designated noxious weeds, of which 20 are found in the planning area. An invasive plant attains a noxious status by legislation only. This designation usually places the burden to control, contain, or inhibit reproduction of a listed species on the owner of an infested parcel. It also prohibits the sale and distribution of listed species. Montana law allows for the petition and review of invasive plants for inclusion on its Noxious Weed List, making the list a dynamic document. Montana State Noxious Weeds are divided into five priorities based on the distribution and abundance of a given species across the state. This priority system helps determine the management strategy for a given species on the list.

- **Priority 1A** - These weeds are not present in Montana. Management criteria will require eradication if detected; education and prevention.
- **Priority 1B** - These weeds have limited presence in Montana. Management criteria will require eradication or containment and education.
- **Priority 2A** - These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant.
- **Priority 2B** - These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant.
- **Priority 3** – Regulated Plants. These plants have the potential to have significant negative impacts. These plants may not be intentionally spread or sold other than as a contaminant in agricultural products.

In addition, under the County Noxious Weed Control Act and Administrative Rules of Montana, each county is allowed to designate plant species as noxious within that county. The BLM also maintains a list of exotic invasive species for the land it administers (Table 3.33 in Chapter 3).

The BLM would continue cooperative agreements with county and state entities. Management efforts would be coordinated with other federal, state, and county agencies, weed management areas, and private landowners and organizations. Development of cooperative weed management areas where all the landowners are cooperatively working to contain or eradicate noxious weeds within designated areas would be encouraged.

Treatment methods include chemical, cultural, physical, and biological. Invasive species such as cheatgrass would be evaluated in site-specific projects associated with the watershed analysis. Perennial vegetation would be reestablished in a timely manner to rehabilitate disturbance areas. Native species would be used for rehabilitation and reclamation unless site-specific evaluations indicate that nonnative species are needed to ensure success or rapid vegetative reestablishment.

Weed seed free forage would be used on BLM land. Forage subject to this rule includes hay, grains, cubes, pelletized feeds, straw, and mulch (BLM 1997b). Reclamation/stabilization and maintenance materials used would be from weed seed free sources to the extent practicable.

Other resource programs would assist in invasive species management through project planning and program implementation. This would include integrating prevention measures in program activities to reduce the spread of invasive species, and supplying resources to mitigate and manage invasive species issues with on-the-ground project implementation. In general, mitigation measures are established to reduce the potential for introduction of invasive species and to minimize any adverse effect their presence may cause. These measures are found in stipulations, conditions of approval, standard operating procedures, etc. that require clean equipment, seed and forage for use in projects, and place the burden on the consumer for control of invasive species in some instances. Standard operating procedures and mitigation measures for integrated weed management treatments have also been developed to mitigate non-target effects of different procedures. These measures are outlined in the Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Impact Statement (BLM 2007c).

Grasshopper/Mormon cricket outbreaks are managed as outlined in a BLM Memorandum of Understanding (MOU WO-220-2009-06) in cooperation with the U.S. Department of Agriculture's Animal and Plant Health Inspection Service-Plant Protection and Quarantine (APHIS-PPQ 09-8011-087-MU) (BLM 2003b).

The State of Montana has developed a management plan to address invasive species (animals, plants, and pathogens) associated with waterbodies. The BLM would coordinate with MFWP to address prevention of and potential infestations of Aquatic Nuisance Species (ANS) and follow actions outlined in the Montana Aquatic Nuisance Species Management Plan (MANS 2002). Aquatic Nuisance Species are categorized into the following classes to help implement proper management and prevention for each species:

- **Priority Class 1** - These species are not known to be present in Montana, but have a high potential to invade and there are limited or no known management strategies for these species. Appropriate management for this class includes prevention of introductions and eradication of populations.
- **Priority Class 2** - These species are present and established in Montana and have the potential to spread, and there are limited or no known management strategies for these species. These species can be managed through actions that involve mitigation of impact, control of population size, and prevention of dispersal to other waterbodies.
- **Priority Class 3** - These species are not known to be established in Montana and have a high potential for invasion, and appropriate management techniques are available. Appropriate management for this class includes prevention of introductions and eradication of pioneering populations.
- **Priority Class 4** - These species are present and have the potential to spread in Montana, but there are management strategies available for these species. These species can be managed through actions that involve mitigation of impact, control of population size, and prevention of dispersal to other waterbodies.

Pest management including the use of pesticides in the interest of public health and safety and other resource management objectives would be conducted on a case-by-case basis consistent with required NEPA analysis. Examples include flea control to prevent plague transmission in support of black-footed ferret recovery, ground squirrel and prairie dog management, mosquito control to minimize West Nile virus transmission, and pheromone traps for pine bark beetle management.

## Off-Highway Vehicle Use and Travel and Transportation Management

### Goals

*In coordination with other federal agencies, state and local governments, and private landowners, plan and manage motorized and nonmotorized travel to provide recreational experiences while maintaining or protecting resource values.*

*Create travel networks that are logical and sustainable, as well as meet the increasingly diverse transportation, access and recreational needs of the public, while maintaining or protecting resource values in coordination with other federal agencies, state and local governments, and private landowners and using an interdisciplinary approach.*

### Objectives

Designate all lands managed by the BLM within the HiLine District as “open” or “limited” or “closed” to OHV use, and identify Travel Management Areas to frame transportation issues and help delineate travel networks that address specific uses and resource concerns. These travel management areas would be prioritized as high, medium, and low for completion of travel management planning after the Record of Decision for this RMP.

Identify areas for motorized and nonmotorized travel to provide opportunities for a variety of recreation experiences with minimal resource impacts and conflicts of use.

Ensure adequate implementation of road management guidelines for road planning, design and maintenance.

## Decisions Common to All Alternatives

Completion of comprehensive travel management plans would involve moving from an interim OHV Area designation of “limited,” which would allow OHV use to continue on existing routes, to a designation of “limited to designated roads, primitive roads and trails” and establishing objectives for each route. Any land acquired by the BLM over the life of the RMP will be managed under the limited classification criteria as identified in 43 CFR 8342.1. Travel would be limited to existing roads and trails until a site determination and travel management plan are completed for the acquisition (43 CFR 8342.2).

Route objectives and regulations at 43 CFR 8340 through 43 CFR 8342.3 would be applied in identifying route-specific management, such as maintenance intensities (Table 2.12), where activity-level plan decisions are made for specific travel routes.

The BLM would coordinate with MFWP in the block management program as appropriate. Motorized travel adjacent to block management areas could conform to seasonal limitations, as determined by the authorized officer on a case-by-case basis through environmental review and public involvement.

Motorized wheeled cross-country travel for lessees and permittees is limited to the administration of a federal lease or permit (BLM 2003c). Any authorized or permitted activity, such as a grazing permit or special recreation permit (SRP), that involves motorized access to public lands must describe how access would be managed, both on and off the existing or designated route system, as part of the permit or authorization. Area-specific limitations or needs would be addressed in more detail during subsequent travel management planning and incorporated into the associated permits/leases.

Roads, primitive roads and trails would be maintained in accordance with the following: BLM policy; the assigned maintenance intensity (Table 2.12); consideration of resource issues; BMPs (Appendix C); and available funding. All roads, primitive roads and trails would be maintained in accordance with standards and guidelines in BLM Manuals 9113, 9114, 9115 and associated handbooks. Roads would be inspected on an established schedule in accordance with the Bureau’s Condition Assessment guidance.

New permanent roads, primitive roads and trails would be constructed subject to environmental review and approved engineering standards, following criteria described in this section. Consideration would be given to use demands, location, safety, and resource constraints when determining the level of road necessary (BLM Manuals 9113, 9114, 9115 and associated handbooks). If an existing road, primitive road or trail is substantially contributing to resource impacts, the road would be considered for redesign, re-routing, decommissioning or closure to minimize the adverse impacts. Existing BLM roads, primitive roads, and trails would be managed through the Facility Asset Management System (FAMS) and Ground Transportation Linear Feature (GTLF) geospatial database (BLM Manual 1626).

The BLM would pursue opportunities to conduct restoration of roads, primitive roads and trails not designated during travel management planning, with priority given to areas with special management concerns. This includes primitive routes that have not been designated as “primitive routes” within WSAs and those that have been closed within areas that are being managed to protect or enhance wilderness characteristics or special status species such as the Greater Sage-Grouse. Restoration activities would be done in accordance with guidelines described in Appendix J, Reclamation. Applicable requirements such as specific seed mixes or transplanting recommendations would also be applied where special status species or issues are a concern (e.g., mitigation for Greater Sage-Grouse).

### Area Designations

**Open:** An area where all types of vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342.

**Limited:** An area restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated within the following type of categories: Numbers of vehicles; types of vehicles; time or season of vehicle use; permitted or licensed use only; use on existing roads, primitive roads and trails; use on designated roads, primitive roads and trails; and other restrictions.

**Closed:** An area where motorized vehicle use off road is prohibited. Use of off-road vehicles in closed areas may be allowed for certain reasons; however, such use shall be made only with the approval of the authorized officer.

<b>Table 2.12 BLM Road Maintenance Intensities</b>	
<b><i>Maintenance Description</i></b>	<b><i>Maintenance Objectives</i></b>
Level 0 – Existing routes that will no longer be maintained or declared as routes. Routes identified as Level 0 are identified for removal from the Transportation System entirely.	<ul style="list-style-type: none"> <li>• No planned annual maintenance.</li> <li>• Meet identified environmental needs.</li> <li>• No preventive maintenance or planned annual maintenance activities.</li> </ul>
Level 1 – Routes where minimal (low intensity) maintenance is required to protect adjacent lands and resource values. These roads may be impassable for extended periods of time or only accessible with high-clearance four-wheel-drive vehicles.	<ul style="list-style-type: none"> <li>• Low (Minimal) maintenance intensity.</li> <li>• Emphasis is given to maintaining drainage and runoff patterns as needed to protect adjacent lands. Grading, brushing, or slide removal is not performed unless route bed drainage is being adversely affected, causing erosion.</li> <li>• Meet identified resource management objectives.</li> <li>• Perform maintenance as necessary to protect adjacent lands and resource values.</li> <li>• No preventive maintenance.</li> <li>• Planned maintenance activities limited to environmental and resource protection.</li> <li>• Route surface and other physical features are not maintained for regular traffic.</li> </ul>
<b>Level 2 – Reserved for Possible Future Use</b>	
Level 3 – Routes requiring moderate maintenance because of low-volume use (e.g., seasonally or year-round for commercial, recreational, or administrative access). Maintenance intensities may not provide year-round access but are intended to generally provide resources appropriate for keeping the route in use for the majority of the year.	<ul style="list-style-type: none"> <li>• Medium (Moderate) maintenance intensity.</li> <li>• Drainage structures will be maintained as needed. Surface maintenance will be conducted to provide a reasonable level of riding comfort at prudent speeds for the route conditions and intended use. Brushing is conducted as needed to improve sight distance when appropriate for management uses. Landslides adversely affecting drainage receive high priority for removal; otherwise, they will be removed on a scheduled basis.</li> <li>• Meet identified environmental needs.</li> <li>• Generally maintained for year-round traffic.</li> <li>• Perform annual maintenance necessary to protect adjacent lands and resource values.</li> <li>• Perform preventive maintenance as required to generally keep the route in acceptable condition.</li> <li>• Planned maintenance activities should include environmental and resource protection efforts, annual route surface.</li> <li>• Route surface and other physical features are maintained for regular traffic.</li> </ul>
<b>Level 4 - Reserved for Possible Future Use</b>	
Level 5 – Route for high (Maximum) maintenance because of year-round needs, high-volume traffic, or significant use. Also may include route identified through management objectives as requiring high intensities of maintenance or to be maintained open year-round and are generally accessible with two-wheel-drive, low clearance vehicles.	<ul style="list-style-type: none"> <li>• High (Maximum) maintenance intensity.</li> <li>• The entire route will be maintained at least annually. Problems will be repaired as discovered. These routes may be closed or have limited access because of weather conditions but are generally intended for year-round use.</li> <li>• Meet identified environmental needs.</li> <li>• Generally maintained for year-round traffic.</li> <li>• Perform annual maintenance necessary to protect adjacent lands and resource values.</li> <li>• Perform preventive maintenance as required to generally keep the route in acceptable condition.</li> <li>• Planned maintenance activities should include environmental and resource protection efforts, annual route surface.</li> <li>• Route surface and other physical features are maintained for regular traffic.</li> </ul>

## Off-Highway Vehicle Use

OHV use would be managed consistent with the definitions and prescriptions identified in the Record of Decision for the Off-Highway Vehicle EIS and Proposed Plan Amendment for Montana, North Dakota and South Dakota (BLM 2003c), unless stated otherwise in the alternatives section. In the interim, until travel management planning has been completed, all motorized wheeled travel is restricted to existing roads, primitive roads and trails; however, several exceptions apply:

- any military, fire, search and rescue, or law enforcement vehicle for emergency operations;
- official BLM administrative business (prescribed fire, noxious weed control, range management, etc.);
- other government agency business (surveying, animal damage control, etc.);
- administration of a federal lease or permit (e.g., a livestock permittee maintaining a fence, an oil or gas company performing routine maintenance on a well, etc.);
- for dispersed camping within 300 feet of an existing open road. Site selection must be completed by nonmotorized means, and accessed by the most direct route causing the least damage.

Motorized travel in the Bitter Creek WSA (60,701 acres) and Burnt Lodge WSA (13,727 acres) would continue to be limited to identified primitive routes under all alternatives.

BLM regulations (43 CFR 8341.2 and 8364.1) allow for area or road closures where off-highway vehicles are causing or would cause considerable adverse impacts on soil, vegetation, wildlife, threatened or endangered species, wildlife habitat, cultural resources, other authorized uses, public safety, or other resources. The authorized officer can immediately close the area or road affected until the impacts are eliminated and measures are implemented to prevent future recurrence.

## Travel Management Areas

Travel management areas are an optional planning tool to frame transportation issues and help delineate motorized and nonmotorized travel networks that address specific uses and resource concerns. These areas are identified and prioritized as high, moderate and low in this RMP, but site-specific route designations would be made during subsequent travel management planning in accordance with BLM Handbook H-8342-1. BLM guidelines state that this planning must be done within five years of the Record of Decision.

Before any site-specific travel management planning occurs, the following baseline information and actions should be completed:

- Road condition assessments would be completed for each area prior to travel management planning;
- Legal access needs for easements to BLM lands and rights-of-way to private lands would be identified; and
- Baseline road and trail inventory maps would be printed and made available to the general public for their review utilizing open houses, the Internet, and other means of communication.

## Travel Management Planning Criteria

Through analysis and activity-level planning, the BLM would collaborate with affected and interested parties to evaluate the designated road, primitive road and trail network.

### Elements of a Comprehensive Travel and Transportation Management Plan

- Identify existing roads, primitive roads, motorized and non-motorized trails, and related structures.
- Indicate changes in the status of existing routes and areas.
- Address needed improvements, signing, trailheads, and staging areas.
- Identify maintenance intensities and legal access needs.
- Address all modes of transportation and primary use.
- Identify desired future conditions.
- Use an interdisciplinary approach to identify the resource effects.
- Seek active public involvement throughout the planning process.
- Produce a map depicting the final decisions.
- Address the strategy informing/educating the public.
- Develop a sign plan.
- Develop a monitoring plan.

The route network would be evaluated for active OHV management suitability and for envisioning potential changes in the existing transportation system or the addition of new roads, primitive roads, and trails that would help meet land use plan objectives. In conducting such evaluations, the following factors would be considered:

- measures needed to avoid on-site and off-site effects on current and future land uses and important natural resources, including issues such as noise and air pollution, erodible soils, stream sedimentation, nonpoint source water pollution, listed and sensitive species habitats, historic and archeological sites, wildlife, special management areas, grazing operations, public safety, needs of nonmotorized recreationists, and recognition of property rights for adjacent landowners;
- trails suitable for different categories of OHVs including dirt bikes, ATVs, and 4-wheel drive touring vehicles, or nonmotorized means of travel such as mountain biking and hiking as well as opportunities for joint trail use;
- need for parking, trailheads, informational and directional signs, mapping and profiling, and development of brochures or other materials for public dissemination; and
- opportunities to connect existing or planned trail networks.

### **Travel Management Criteria for Making Road and Trail Selections**

Existing and/or new individual roads, primitive roads and trails would be chosen with the transportation network goals in mind rather than just using all of the inherited roads, primitive roads and trails. Most existing roads, primitive roads and trails on BLM land were created by use over time, rather than planned and constructed for specific activities or needs. Instead of simply using this process as a way of deciding which individual roads, primitive and trails should be closed or left open, the BLM would consider a broader range of possibilities for management of individual roads, primitive roads and trails, including reroutes, reconstruction or new construction, and closures. These management considerations can be used to develop a high-quality travel system. A well-designed travel system can direct use away from sensitive areas and still provide high-quality recreational activities and access for commercial and recreational needs.

An interdisciplinary team and cooperating agencies would be used for special expertise in identifying the resources, land ownership, public demand, access needs, conflicts of use and benefits of various routes. This process would include public involvement.

The BLM would emphasize management of the transportation system to reduce impacts to natural resources from authorized roads, primitive roads and trails (Appendix C). The BLM would also consider through travel management planning closing and restoring unauthorized user created roads, primitive roads and trails to prevent resource damage.

Resource considerations would be assessed in determining designation criteria. All designations would be based on the protection of resources, safety of all users, and the minimization of conflicts among various uses (43 CFR 8342.1). The following elements to be considered during route selection fall within the designation criteria:

- administrative access for the BLM and BLM-authorized activities
- areas of critical environmental concern
- at-risk watersheds
- cultural resources
- current maintenance agreements
- desired future condition
- elimination of route redundancy
- energy development
- erodible soils
- forest resources
- low bearing strength soils (saline)
- paleontological resources
- potential for adverse or positive economic effects
- prescriptions for land use allocations including special recreation management areas
- public health and safety; emergency services

- recreation opportunities, experiences, settings, benefits
- riparian resources, assessment of proper functioning condition
- rights-of-way, easements and inholdings
- Standards for Rangeland Health and Guidelines for Livestock Grazing Management
- user preferences and conflicts of use
- vegetation
  - at-risk vegetative sites
  - relic vegetation
- visual resources
- watershed resources
- wilderness characteristics
- wilderness study areas
- wildlife resources
  - Greater Sage-Grouse habitat
  - raptor nesting locations
  - sensitive species habitats
  - winter range

The BLM would pursue opportunities to conduct restoration of roads, primitive roads and trails not designated during travel management planning, with priority given to areas with special management concerns (see Table 2.12 for more information).

**Schedule**

Travel management areas are prioritized into high, moderate and low categories. Travel management planning for all areas would be completed in order of priority and as funding and staffing allow. Prioritization of travel management areas would be an ongoing process and priorities for travel planning can change through implementation and monitoring based on resource needs, special status species including Greater Sage-Grouse, funding, and staffing.

**Alternative A (Current Management)**

**OHV Area Designations**

The Fresno OHV area north of Havre (84 acres) and the OHV area north of Glasgow (40 acres) would remain designated open to OHV use off roads, primitive roads and trails.

The Sweet Grass Hills ACEC (7,429 acres) would be closed to motorized OHV use.

The remaining BLM land (2,429,930 acres) would be designated as limited. In these areas travel would be on existing roads, primitive roads, and trails. See Table 2.13 and Map 2.6, which is located at the end of Chapter 2.

No motorized game retrieval off road would be allowed in limited or closed areas. Through subsequent site-specific planning, options for big game retrieval could be considered (BLM 2003c).

<b>Table 2.13</b>					
<b>OHV Area Designations by Alternative (Acres)</b>					
	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
Open	124	0	0	305	165
Limited	2,429,930	2,429,971	2,429,930	2,437,169	2,429,889
Closed	7,419	7,504	7,544	0	7,419

## Travel Management Areas

Fifteen travel management planning areas (see Map 2.7, which is located at the end of Chapter 2) would be prioritized as follows:

### **High:**

- An area northwest of Glasgow (80 acres) (includes the 40 acre Glasgow OHV area plus additional BLM lands in the vicinity)
- Little Rocky Mountains (27,449 acres)

### **Moderate:**

- Bears Paw to Breaks area (89,369 acres)
- Kevin Rim area (16,325 acres)
- Missouri Breaks area (402,349 acres)
- Northwest Blaine County (170,631 acres)
- Sweet Grass Hills area (7,879 acres)
- Vimy area (8,182 acres)

### **Low:**

- Lonesome Lake area (121 acres)
- Lower Marias River area (12,014 acres)
- Northeast Bears Paw Breaks area (4,351 acres)
- Upper Marias River area (8,908 acres)
- Wayne Creek area (29,792 acres)
- Woody Island area (53,436 acres)
- Remaining BLM lands (1,606,688 acres)

## Alternative B

### OHV Area Designations

No areas would be designated as open to off-road travel (Table 2.13).

The Fresno OHV area (84 acres) and Sweet Grass Hills ACEC (7,419 acres) would be closed to OHV use (Map W.3, which is available at <http://blm.gov/8qkd>).

The remaining BLM land (2,429,971 acres) would be designated as limited. In these areas travel would be on existing roads, primitive roads, and trails (Map W.3, which is available at <http://blm.gov/8qkd>).

The use of motorized vehicles, including OHVs, to retrieve game off-road would not be allowed and would not be considered during subsequent site-specific travel management planning. Individual permits authorizing off-road game retrieval for persons with disabilities would not be issued, regardless of possession of a Montana Disabled Hunting License.

Over-snow vehicle use in the planning area (including snowmobiles) would be allowed, except in the Grassland Bird/Greater Sage Grouse Priority Areas ACEC, the Greater Sage-Grouse Protection Priority Area ACEC, and crucial winter range areas.

## Travel Management Areas

Site-specific travel planning within the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC and Greater Sage-Grouse Protection Priority Area ACEC would be completed within a five (5) year period after the ROD is signed.

Seven travel management areas would be prioritized into the following categories for travel management planning (Map W.4, which is available at <http://blm.gov/8qkd>):

### **High:**

- Grassland Bird/Greater Sage Grouse Priority Areas ACEC and Frenchman Breaks (490,477 acres)
- Greater Sage-Grouse Protection Priority Area ACEC (997,338 acres)
- Little Rocky Mountains (27,688 acres)

### **Moderate:**

- Marias River area (19,032 acres)
- North Missouri Breaks (101,523 acres)
- Prairie Grasslands area (149,681 acres)

### **Low:**

- Remaining BLM lands (651,735 acres)

## Alternative C

### OHV Area Designations

No areas would be designated as open to off-road travel (Table 2.13).

The Fresno OHV area (84 acres), the Glasgow OHV area (40 acres) and the Sweet Grass Hills ACEC (7,419 acres) would be closed to OHV use (Map W.3, which is available at <http://blm.gov/8qkd>).

The remaining BLM lands (2,429,930 acres) would be designated as limited to existing roads, primitive roads and trails (Map W.3, which is available at <http://blm.gov/8qkd>).

Motorized game retrieval off road would be allowed during the big game hunting season on BLM lands east of Highway 191 and south of the Dry Fork Road in Phillips County; and south of the Willow Creek Road and south of the Stonehouse Road in South Valley County except in the Burnt Lodge WSA. Figure 2.2 shows the location of the 387,118 acre game retrieval area. Motorized game retrieval off road would be allowed between the hours of 10:00 a.m. and 2:00 p.m. to retrieve a big game animal that is in possession, in a minimum timeframe utilizing the most direct route and avoiding resource damage.

### Travel Management Areas

Seven travel management areas would be prioritized into the following categories for travel management planning (Map W.4, which is available at <http://blm.gov/8qkd>):

**High:**

- Frenchman Breaks/Rock Creek area (190,174 acres)
- Little Rocky Mountains (27,688 acres)
- Marias River area (19,032 acres)

**Moderate:**

- North Missouri Breaks (101,523 acres)
- South Phillips County (575,917 acres)
- South Valley County (584,820 acres)

**Low:**

- Remaining BLM lands (938,321 acres)

## Alternative D

### OHV Area Designations

The Fresno OHV area (84 acres) and Glasgow OHV area (40 acres) would remain designated open, and the Thirty Mile area (181 acres) would be designated open to OHV use off roads, primitive roads and trails (Table 2.13 and Map W.3, which is available at <http://blm.gov/8qkd>).

The BLM would continue to evaluate moderately sized open acres during travel management planning.

The remaining BLM land (2,437,169 acres) would be designated as limited. In these areas travel would be on existing roads, primitive roads, and trails.

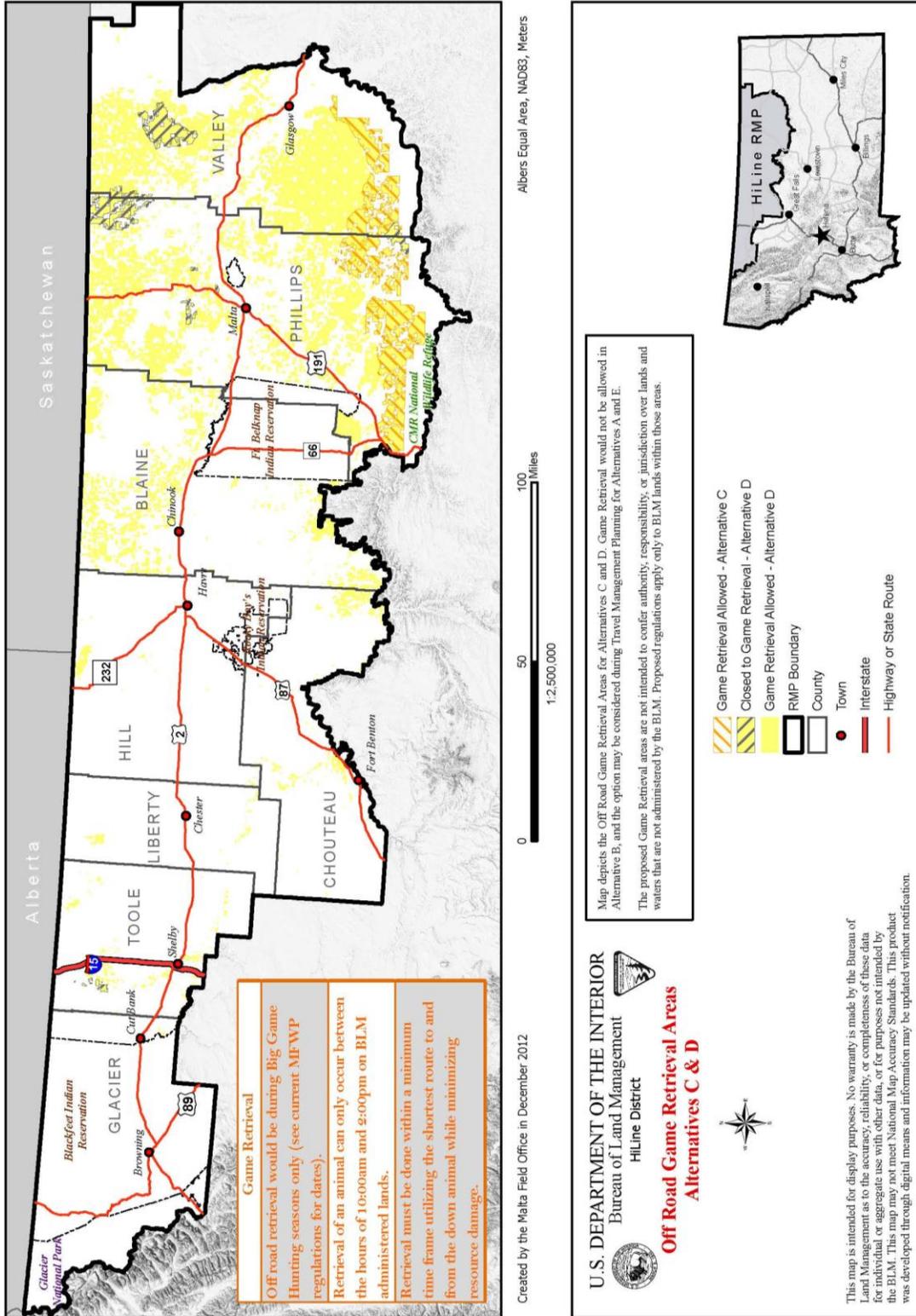
Motorized game retrieval off road would be allowed during the big game hunting season on all BLM lands in the planning area except in the following areas (Figure 2.2):

- Big Bend of the Milk River ACEC (1,972 acres)
- Bitter Creek WSA (60,701 acres) and Burnt Lodge WSA (13,727 acres)
- Frenchman Breaks ACEC (63,482 acres)
- Kevin Rim ACEC (4,557 acres)
- Malta Geological ACEC (6,153 acres)

**Thirty Mile OHV Area**

The proposed Thirty Mile OHV area (181 acres) is located 1.75 miles north of U.S. Highway 2 on the Thirty Mile Creek Road, about 3 miles from Harlem, Montana. The location is on the east side of the road. This area is shown on Map W.3 on the HiLine RMP web site at <http://treadlightly.org/programs/respected-access-campaign/>.

**Figure 2.2**  
**Off-Road Game Retrieval Areas**  
**Alternatives C and D**



Game retrieval would be allowed between the hours of 10:00 a.m. and 2:00 p.m. to retrieve a big game animal that is in possession, in a minimum timeframe utilizing the most direct route while minimizing resource damage.

## Travel Management Areas

Seven travel management areas would be prioritized into the following categories for travel management planning (Map W.4, which is available at <http://blm.gov/8qkd>):

### **High:**

- Frenchman Breaks/Rock Creek area (190,174 acres)
- Little Rocky Mountains (27,688 acres)
- Marias River area (19,032 acres)

### **Moderate:**

- North Missouri Breaks (101,523 acres)
- South Phillips County (575,917 acres)
- South Valley County (584,820 acres)

### **Low:**

- Remaining BLM lands (938,321 acres)

## Alternative E (Preferred Alternative)

### OHV Area Designations

The Glasgow OHV area (40 acres) would remain designated open to OHV use off roads, primitive roads and trails.

The Fresno OHV area (125 acres) would remain designated open to OHV use off roads, primitive roads and trails. The boundary of the OHV area would be increased from 84 acres to 125 acres to more closely follow topography of the area and incorporate the existing system of trails. Through travel management planning the BLM would address the need for seasonal restrictions, and/or the need to fence the boundary of the OHV area to address resource values and conflicts of use on surrounding lands. A paleontological inventory would be conducted to determine appropriate access points, fence placement, and need for parking areas.

The Sweet Grass Hills ACEC (7,419 acres) would be closed to motorized travel (Map 2.6).

The remaining BLM land (2,429,889 acres) would be designated as “limited.” In these areas travel can continue on existing roads, primitive roads, and trails; however, no new routes may be created without specific authorization. See Table 2.13. Upon the completion of a comprehensive travel management plan, an area would move from an interim OHV Area designation of “limited,” to a designation of “limited to designated roads, primitive roads and trails.”

Cross-country over-snow vehicle use in the planning area (including snowmobiles) would be allowed, except in crucial winter range areas (110,040 acres, see the Wildlife section of Chapter 3, Figure 3.13). Over-snow vehicles would be subject to the following management guidelines: avoid locations where wind or topographic conditions may have reduced snow depth and created situations where damage to vegetation or soils could occur, or where the majority of vegetation is taller than the protective snow cover. Sensitive areas could be closed to motorized snow vehicle travel if resource damage is found to be occurring in these areas. Additional management guidance regarding the use of over-snow vehicles, such as area closures, seasonal closures, or limiting their use to designated roads, primitive roads and trails may be considered and implemented in subsequent travel management plans.

The use of motorized vehicles, including OHVs, to retrieve game off road would not be allowed, regardless of individual possession of a Montana Disabled Hunting License, in limited or closed areas unless designated through travel management planning. Options for off-road game retrieval could include designating the types of vehicles that may be used, times of day, limited motorized off-road travel or motorized travel on closed roads and would apply to all individuals with a legally taken game animal.

## Travel Management Areas

Site-specific travel planning within the Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas and Greater Sage-Grouse Protection Priority Habitat Management Area would be completed within a five (5) year period after the ROD is signed.

In PHMAs and GHMAs, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use).

Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence (43 CFR 8341.2). A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.

Nine travel management areas (Map 2.7) would be prioritized into the following categories for travel management planning:

**High:**

- Grassland Bird/Greater Sage Grouse Priority Habitat Management Area and Frenchman Breaks (415,875 acres)
- Greater Sage-Grouse Priority Habitat Management Area and Eastern Breaks and Badlands (997,338 acres)
- Little Rocky Mountains (27,688 acres)

**Moderate:**

- Fresno area (885 acres; includes the 125 acre OHV area plus additional BLM lands in the vicinity)
- Marias River area (19,032 acres)
- North Missouri Breaks (101,523 acres)

**Low:**

- Remaining BLM lands (875,133 acres)

## Paleontological Resources

Goal

*Manage and protect paleontological resources using scientific principles and expertise for present and future generations.*

### Objectives

Ensure that proposed land uses initiated or authorized by the BLM avoid inadvertent damage to significant paleontological resources.

Develop appropriate plans for inventory, monitoring, and the scientific and educational use of paleontological resources.

Promote the stewardship, conservation, and appreciation of paleontological resources through appropriate educational and public outreach programs.

### Decisions Common to All Alternatives

The BLM would identify and prioritize high probability paleontological locations for paleontological inventories and information attained would guide management decisions in those areas. Through this process the BLM would:

- maintain a database of paleontological sites and localities;
- require permits for individuals or institutions conducting paleontological investigations;

- coordinate with other state and federal agencies’ permitting processes to eliminate confusion among permittees when working in multiple jurisdictions;
- ensure that significant fossils are placed in approved repositories in trust;
- establish a long-term monitoring program at known paleontological locales to assess potential adverse impacts and develop mitigation as appropriate; and
- coordinate with law enforcement to provide monitoring and protection against looting and vandalism of paleontological resources.

Paleontological assessments would be completed for all projects proposed on federal lands. These assessments would determine the need for further paleontological inventories. The inventories would evaluate the effects of the project on paleontological resources and would recommend appropriate mitigation measures to protect these resources. The BLM would avoid impacts to significant paleontological remains through project redesign, project abandonment, and/or mitigation of adverse impacts through scientific recovery and analysis.

The BLM would develop a resource awareness program designed to enhance the public appreciation of paleontological resource values. This includes coordination with permitted universities and museums in furthering the paleontological research potential across the HiLine and identifying and conserving areas of paleontological interest for future use. When practical, public use areas would be developed in the form of invertebrate collection areas or interpretation kiosks. Paleontological research and education opportunities would be pursued for high priority areas.

Lands within the planning area exhibiting the highest site density and/or high Potential Fossil Yield Classification (PFYC), as reported by Hanna (2007), would be used to establish priorities for paleontological inventory.

Preliminarily, the priority inventory locations are north central Phillips County, northern Hill County, and eastern Liberty County. These locations may change or be modified with the addition of new information. These inventories would provide additional information about BLM-managed paleontological resources and would assist the BLM in allocating resources (time, money, staffing, etc.) and managing/protecting significant paleontological resources. Monitoring and completion of site assessments for known paleontological sites would occur routinely and site stabilization would be completed as deemed necessary.

The collection of petrified wood and invertebrate fossils for personal use would be allowed as limited by the regulations (43 CFR 3620 and 8365) in areas not specifically closed.

**Significant Paleontological Resources**

Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be scientifically important because it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has identified educational or recreational value. Paleontological resources that may be considered to not have paleontological significance include those that lack provenience or context, lack physical integrity because of decay or natural erosion, or that are overly redundant or are otherwise not useful for research.

Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities.

**Potential Fossil Yield Classification**

Occurrences of paleontological resources are closely tied to the geologic units that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources.

Using the Potential Fossil Yield Classification (PFYC) system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. The five classes range from Class 1 – Very Low to Class 5 – Very High.

## Public Safety

### Goals

*Reclaim abandoned mine land (AML) sites on BLM land to improve water quality, plant communities, and diverse fish and wildlife habitat.*

*Provide and manage adequate hazard class dams based on public safety and agency need.*

*Mitigate threats and reduce risks to the public and environment from hazardous materials.*

## Abandoned Mine Lands

### Objective

Assess the level of risk at AML sites and prioritize for reclamation based on standardized risk assessment.

### Decisions Common to All Alternatives

The closure of dangerous inactive and abandoned mine sites would be designed to reduce the risks to human health and safety, restore the environment, and protect geological and cultural resources. Reclamation would be implemented at the highest risk sites first. Where deemed appropriate, the BLM would restore severely impacted soils and watersheds as close as possible to pre-disturbed conditions that support productive plant communities and ensure properly functioning watersheds.

Restoration and reclamation activities and repositories would be monitored to determine effectiveness of reclamation practices.

## Hazard Class Dams

### Objective

Ensure hazard class dams are maintained to meet public health and safety requirements.

### Decisions Common to All Alternatives

Construction and maintenance priorities for hazard class dams would be in conformance with applicable laws and regulations, and BLM policy. Condition assessments and Emergency Action Planning would be performed as required by the latest version of the 9177 (Dam Safety) manual section and associated handbooks. The results of the condition assessments would be reviewed to determine the need for reconstruction, maintenance or disposal.

## Hazardous Materials

### Objective

Ensure the protection of BLM lands and facilities from hazardous materials to meet public and BLM employee health and safety requirements.

## Decisions Common to All Alternatives

The BLM would comply with all federal environmental and safety laws and regulations governing storage, handling, and use of hazardous materials and governing disposal of hazardous waste. The BLM would also comply with state hazardous materials laws and regulations as required.

Disposal of hazardous materials on public lands would generally not be permitted. When the use or storage of hazardous materials is authorized (i.e., in mining operations, pesticide application or other types of commercial activities) special stipulations would be applied to comply with appropriate laws, regulations, and policies. In the event of hazardous materials incidents on public land, standard operating procedures would be used to respond. Cleanups and reclamation would be conducted in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan and the NEPA or Removal Site Evaluation (RSE) / Engineering Evaluation Cost Analysis (EECA) decision.

The BLM would promote and support the appropriate use and recycling of hazardous materials in public facilities and on public land to prevent or minimize the generation and disposal of hazardous wastes.

Environmental site assessments would be conducted for land acquisitions, land disposals, and for rights-of-way if applicable. Land uses would be authorized and managed to reduce the occurrence and severity of hazardous materials incidences on public land.

The BLM would assess level of risk at hazard sites and conduct remediation at highest priority sites that are the greatest risks to the public and environment.

## Recreation

### *Goal*

*Provide a diverse array of recreational opportunities and visitor experiences while maintaining healthy BLM land resources.*

## Recreation Opportunity Spectrum

### Objectives

Establish, manage, and maintain quality recreation sites and facilities to meet a broad range of public needs subject to resource constraints.

Manage commercial, competitive, or special events with special recreation permits that eliminate or minimize impacts on resources and conflicts with other users.

Manage recreation opportunities and visitor experiences to provide a sustained flow of local economic benefits and protect non-market economic values.

Manage recreation settings and opportunities by their specific recreation opportunity spectrum (ROS) class description for desired recreation opportunities, experience levels, facility developments, and other resource uses.

## Decisions Common to All Alternatives

The BLM recognizes that natural resource-based recreation is a significant economic contributor in most communities adjacent to BLM land. Priorities for Recreation and Visitor Services (BLM 2003d) states, “Our multiple-use mission is to serve the diverse outdoor recreation demands of visitors while helping to maintain the sustainable conditions needed to conserve their lands and their recreation choices.” The three primary goals for the HiLine District based on the *national* recreation program are:

- *Improve access to appropriate recreation opportunities on BLM-managed or partnered lands and waters;*
- *Ensure a quality experience and enjoyment of natural resources on BLM-managed or partnered lands and waters; and*
- *Provide for and receive fair value in recreation.*

A majority of BLM lands have recreational opportunities that can be appropriately provided for in conjunction with the other resource demands sanctioned by the BLM's multiple-use mission. With this in mind, along with the goals described above, the HiLine District would manage its recreation opportunities and visitor experiences under the management actions described below.

BLM lands provide multiple opportunities for all publics, including those with disabilities. The BLM seeks to make these opportunities available through the use of universal design principles in the planning, construction, and renovation of facilities and in the provision of accessible programs and services to the public. The BLM's mandate of multiple-use management and its role as provider of a wide variety of dispersed recreation opportunities in vast open spaces present unique challenges in implementing recreation programs and activities accessible to persons with disabilities. The BLM would consider the proposed Accessibility Guidelines for Outdoor Developed Areas (Access Board 2009) for camping facilities, picnic facilities, viewing areas, and outdoor recreation access routes and trails.

The recreation opportunity spectrum (ROS) is a means of classifying and managing recreational opportunities based on physical, social, and managerial settings. Recreation opportunities in the HiLine District have been broken down into the following seven ROS classes based on a combination of the activities, settings and experiences available to the public: primitive, semi-primitive nonmotorized, semi-primitive motorized, roaded natural, roaded modified, rural and urban (Table 2.14). These classifications can be broken down further or expressed in more detail as more data are gathered through development of supplemental plans such as travel management plans.

<i>ROS Class</i>	<i>Class Description</i>
Primitive	Opportunity for isolation from man-made sights, sounds, and management controls in an unmodified natural environment. Only facilities essential for resource protection are available. A high degree of challenge and risk are present. Visitors use outdoor skills and have minimal contact with other users or groups. Motorized use is prohibited.
Semi-Primitive Nonmotorized	Some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk and to use outdoor skills. Concentration of visitors is low, but evidence of users is often present. On-site managerial controls are subtle. Facilities are provided for resource protection and the safety of users. Motorized use is prohibited.
Semi-Primitive Motorized	Some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk and to use outdoor skills. Concentration of visitors is low, but evidence of users is often present. On-site managerial controls are subtle. Facilities are provided for resource protection and the safety of users. Motorized use is permitted.
Roaded Natural	Mostly equal opportunities to affiliate with other groups or be isolated from sights and sounds of man. The landscape is generally natural with modifications moderately evident. Concentration of users is low to moderate, but facilities for group activities may be present. Challenge and risk opportunities are generally not important in this class. Opportunities for both motorized and nonmotorized activities are present. Construction standards and facility design incorporate conventional motorized uses.
Roaded Modified	Similar to the Roaded Natural setting, except this area has been or could be heavily modified by roads from activities including oil and gas development and/or off-road vehicle use. This class still offers opportunity to have a high degree of interaction with the natural environment and to have moderate challenge and risk and to use outdoor skills.

Rural	Area is characterized by a substantially modified natural environment. Opportunities to affiliate with others are prevalent. The convenience of recreation sites and opportunities are more important than a natural landscape or setting. Sights and sounds of man are readily evident, and the concentration of users is often moderate to high. Developed sites, roads, and trails are designed for moderate to high uses.
Urban	Area is characterized by a substantially urbanized environment, although the background may have natural appealing elements. High levels of human activity and concentrated development including recreation opportunities are prevalent. Developed sites, roads and other recreation opportunities are designed for high use.

While the BLM would manage to support these different recreation settings and opportunities, ROS classifications would not ultimately restrict or authorize future management actions, but would (1) provide guidance on what types of actions and mitigation measures are appropriate on BLM land when comprehensively examined along with other resource allocations; and (2) disclose to the public the potential impacts to recreational conditions during the environmental review process for future proposed actions.

The BLM would manage for a variety of quality recreational opportunities and visitor experiences (i.e. hunting, fishing, sightseeing, off-highway vehicle use, horseback riding, mountain biking, hiking, rafting, rock hounding, etc.) consistent with other resource management objectives.

Comparable, cost effective and value based fee systems would be established for services and facilities provided to public users in accordance with BLM directives and the Federal Lands Recreation Enhancement Act.

Recreation users would be limited to 14-day camping stays at developed campgrounds. No variances to the 14-day camping limit would be allowed. Personal property of recreational users cannot be left unattended in developed campgrounds for more than 24 hours. Developed campgrounds are those that provide a majority of the following amenities: tent or trailer spaces, picnic tables, drinking water, access roads, refuse containers, toilet facilities, fee collection, reasonable visitor protection and campfire rings.

Recreation users would also be limited to 16-day camping stays on undeveloped lands (dispersed camping) (75 FR 30850-30852), or as determined by any supplementary rules published in the Federal Register. This does not apply to locations that contain structures or capital improvements (such as boat launch sites, picnic areas, and interpretive centers) and that are used primarily by the public for recreational purposes such as developed campgrounds, designated recreation areas, and special recreation management areas. The BLM regulates the use and occupancy at such developed locations in accordance with 43 CFR 8365.2-3.

The BLM would establish and maintain information kiosks with brochures, interpretive and educational information, site maps and regulations, and important contacts. All developed recreation sites (including trailheads, picnic areas, etc.) are closed to target shooting per 43 CFR 8365.2-5(a).

Periodic accessibility, safety, and condition assessments would be conducted in accordance with Bureau policy at developed recreation sites and prioritized available funds to resolve deferred and corrective maintenance needs.

The “Leave No Trace” and “Tread Lightly” practices would be promoted to enhance the sustainability of resource-based activities.

The BLM would work cooperatively with other agencies (e.g., Montana Fish, Wildlife and Parks) to identify and sign BLM lands to provide more recreational opportunities in areas with limited public access and/or confusing ownership boundaries. Signs must be placed according to current boundary marking standards (BLM Manual 9130).

**Alternative A (Current Management)**

A ROS inventory for the planning area was completed in 2008 and was based on professional determinations of the physical (remoteness, naturalness, and facilities), social (contacts, group size, and evidence of use) and administrative (mechanized use, management controls, and visitor services) attributes of BLM land. The ROS inventory represents the

existing recreational settings and opportunities currently available on BLM land (Table 2.15 and Map 2.8, which is located at the end of Chapter 2). The planning area does not include any lands in the primitive and urban ROS classes.

The BLM would not allocate permits or specific use areas for outfitters and guides. All BLM land is available at the discretion of the Field Manager as long as permittees maintain a special use permit and meet the BLM regulation requirements.

Recreation emphasis would be to develop and maintain opportunities for dispersed recreational activities such as hunting, scenic and wildlife viewing, and driving for pleasure.

The BLM would not construct undeveloped or developed recreation sites based strictly on local use, unless these sites can be realized through partnerships with other government entities, local service organizations, etc.

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
Semi-Primitive Nonmotorized	7,481	7,566	136,276	0	7,481
Semi-Primitive Motorized	91,872	474,217	187,503	91,872	393,451
Roaded Natural	2,336,762	1,916,104	2,060,410	2,095,626	1,820,446
Roaded Modified	125	38,353	52,051	248,742	214,861
Rural	1,234	1,234	1,234	1,234	1,234

## **Alternative B**

The BLM would modify the existing ROS classifications to accommodate the other proposed resource allocations under Alternative B. Table 2.15 and Map W.5 shows the acreages and ROS classes the BLM would manage under Alternative B. Map W.5 is available on the Internet at <http://blm.gov/8qkd>.

The BLM would issue special recreation permits (SRPs) as appropriate for commercial, competitive, and special events subject to guidelines in BLM Handbook 2930, resource capacities, social conflict concerns, professional qualifications, public safety, and public needs. New permits would not be authorized that directly conflict with permitted uses and existing permits would be given preference. Through plan implementation, changes in demand for permits and resulting impacts would be monitored and thresholds identified that could lead to limits in the number of permits to minimize impacts to the resources, public safety, and overall visitor satisfaction.

Recreation sites and facilities would be maintained and managed to promote resource value protection, public safety and health, quality facilities, visitor experiences, management efficiency, and value-based returns. Expansion of existing sites and development of new sites would take into consideration public demand, resource constraints, and management capabilities through an environmental review process. Priority would be given to new sites that have partnership funding strategies and are consistent with established management guidelines.

## **Alternatives C, D, and E (Preferred Alternative)**

The BLM would modify the existing ROS classifications to accommodate the other proposed resource allocations under the range of alternatives. Table 2.15 and Map 2.8 shows the acreages and ROS classes the BLM would manage under Alternative E (Preferred Alternative). Alternatives C and D are shown on Map W.5, which is available at <http://blm.gov/8qkd>.

The BLM would issue SRPs as appropriate for commercial, competitive, and special events subject to guidelines in BLM Handbook 2930, resource capacities, social conflict concerns, professional qualifications, public safety, and public needs. For example, applications for SRPs in Greater Sage-Grouse priority habitat areas would be denied if approval of the permit would adversely impact sage-grouse or sage-grouse habitat. New permits would not be authorized that directly conflict with other permitted uses and existing permits would be given preference. Through plan implementation, changes in demand for permits and resulting impacts would be monitored and thresholds identified that

could lead to limits in the number of permits to minimize impacts to the resources, public safety, and overall visitor satisfaction. All SRP applications and renewals would be reviewed on a case-by-case basis and site-specific analysis would be done for each proposed operating area.

Recreation sites and facilities would be maintained and managed to promote resource value protection, public safety and health, quality facilities, visitor experiences, management efficiency, and value-based returns. Expansion of existing sites and development of new sites would take into consideration public demand, resource constraints, and management capabilities through an environmental review process. Priority would be given to new sites that have partnership funding strategies and are consistent with established management guidelines.

## Recreation Management Areas

### Objectives

Establish a three-tier system of lands managed for recreation where Special Recreation Management Areas (SRMAs) that would be given management priority to provide quality recreation opportunities and visitor experiences and Extensive Recreation Management Areas (ERMAs) would also require specific management consideration but commensurate with the management of other resources and resource uses. All remaining public lands not designated as recreation management areas (LND), would generally be managed only to address basic recreation and visitor services and resource stewardship needs such as visitor safety and use, and user conflicts.

Provide for primarily undeveloped, dispersed recreational opportunities while maintaining the prescribed recreation settings (ROS classes), protecting resources, ensuring public health and safety, and working toward resolving conflicts of use.

Incorporate outcomes-focused recreation management principles per WO IM No. 2011-004 (BLM 2011). Outcomes-focused management varies from the traditional “activity-based” recreation management approach, which primarily focused on specific activities and the associated facilities needed to support such uses. Outcomes-focused recreation focuses management on primary activities within recreation management zones. These primary activities provide the public with certain types of experiences on BLM lands. Providing these experiences then produces a variety of personal, community, economic, and environmental benefits.

### Decisions Common to All Alternatives

Where the nature of the resource attracts concentrated or intensive recreational use, BLM lands may be managed as a SRMA. These are areas where the BLM focuses specific management, funding, and planning to provide for the best possible recreation experience while protecting, sustaining, and enhancing the environmental resources of these areas.

Within each SRMA, the BLM may also allocate recreation management zones (RMZs). An RMZ represents BLM lands with a distinctive recreation setting (activities, experiences, and benefits) within each SRMA. The BLM would focus management, funding, and planning within RMZs to implement and maintain proposed ROS classes, recreation management objectives, and management actions.

Where the nature of the resource attracts concentrated recreational use but is not the specific focus of management, the area would be managed as an ERMA. Other resources and resource uses are considered in the management of these areas and some recreation activities may be restricted or constrained

#### Recreation Management Areas

**Special Recreation Management Area (SRMA):** An administrative unit where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance and/or distinctiveness, especially as compared to other areas used for recreation. These areas are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation setting characteristics.

**Extensive Recreation Management Area (ERMA):** An administrative unit that requires specific management consideration in order to address recreation use, demand or recreation and visitor services program investments. These areas are managed to support and sustain the principal recreation activities and the associated qualities and conditions of the ERMA.

**Public Lands Not Designated as Recreation Management Areas (LND):** All lands not designated as a SRMA or ERMA. These lands are managed to meet basic recreation and visitor services and resource stewardship needs. Recreation is not emphasized; however, recreation activities may occur as long as they are not in conflict with the primary uses of these lands.

to achieve interdisciplinary objectives.

BLM lands outside of SRMAs and ERMAs are managed as LND. Recreation management within LND would be limited to custodial actions, which are primarily reactive in order to manage dispersed activities, visitor health and safety, and user and resource conflicts. LND are generally managed directly through RMP decisions and do not require additional activity-level planning.

The majority of lands within the planning area would be managed as LND for dispersed recreational experiences associated with hunting, fishing, wildlife viewing, pleasure driving, camping and picnicking. The BLM would manage this area in a custodial manner to ensure quality of experience and enjoyment of natural and cultural resources.

The existing recreation facilities (fishing reservoirs and watchable wildlife areas) within the LND would be maintained in a custodial manner and enhanced only as needed to meet recreational demands that are associated with resource protection, and public health and safety requirements. New recreation facilities could be considered but should be a lower priority for implementation than those proposed for SRMAs and ERMAs and should resolve specific conflicts of use.

The Bitter Creek Watchable Wildlife Area would continue to be managed under BLM Manual 6330-Management of BLM Wilderness Study Areas until such time as Congress decides whether or not to designate the area as Wilderness. If released by Congress, the Bitter Creek WSA would be managed as an ACEC and a management plan would be developed to provide semi-primitive, motorized recreation opportunities. Until the management plan is developed, management of the area would continue to be guided by BLM Manual 6330 as an ERMA.

### Alternative A (Current Management)

The BLM would retain the five SRMAs and three ERMAs (Table 2.16 and Map 2.9, which is located at the end of Chapter 2). These recreation management areas do not utilize the new three-tier recreation outcomes-focused management approach of community, destination or undeveloped market strategies.

<i>Management Area</i>	<i>SRMA</i>	<i>ERMA</i>
Havre		275,538
Little Rocky Mountains	27,688	
North Missouri Breaks	109,891	
Phillips		425,845
South Phillips	575,924	
South Valley	584,901	
Sweet Grass Hills	9,337	
Valley		428,351
Total Lands Designated	1,307,741	1,129,734

### Alternative B

The BLM would manage the entire planning area as LND (Table 2.17 and Map W.6, which is available at <http://blm.gov/8qkd>).

### Alternative C

The BLM would manage one SRMA (Little Rocky Mountains) and nine ERMAs (BR-12 Watchable Wildlife Area, Cottonwood Riparian Protection Area, Faraasen Park Recreation Area, Fresno OHV Area, Glasgow OHV Area, Marias

River, Paulo Fishing Reservoir, South Phillips Recreation Complex, and Troika Fishing Reservoir) (Table 2.17 and Map 2.9). The remainder of the planning area would be managed as LND.

The BLM would not allocate recreation management zones within the Little Rocky Mountains SRMA.

Objectives and management actions for the individual SRMAs and ERMAs are identified in Appendix S.

**Alternative D**

The BLM would manage twelve SRMAs (BR-12 Watchable Wildlife Area, Cottonwood Riparian Protection Area, Faraasen Park Recreation Area, Fresno OHV Area, Glasgow OHV Area, Little Rocky Mountains, Marias River, Paulo Fishing Reservoir, South Phillips Recreation Complex, Sweet Grass Hills ACEC, Thirty Mile OHV Area, and Troika Fishing Reservoir) and two ERMAs (Timber Creek Ridge and Wards Dam Watchable Wildlife Area) (Table 2.17 and Map W.6, which is available at <http://blm.gov/8qkd>). The remainder of the planning area would be managed as LND. Objectives and management actions for the individual SRMAs and ERMAs are identified in Appendix S.

The BLM would allocate three recreation management zones (RMZs) within the Little Rocky Mountains SRMA, as described below.

The primary recreation management strategy for the Little Rocky Mountains SRMA (Map 2.9) would be to target the demonstrated community tourism market. Residents of local communities are the primary visitors of the area who come to hike, camp, fish, hunt, and ride horses and OHVs. These recreation opportunities would be sustained and enhanced through the implementation of identified recreation management objectives and the maintenance of prescribed ROS classes.

<i><b>RMA</b></i>	<i><b>Alternative B</b></i>		<i><b>Alternative C</b></i>		<i><b>Alternative D</b></i>		<i><b>Alternative E (Preferred Alternative)</b></i>	
	<i><b>SRMA</b></i>	<i><b>ERMA</b></i>	<i><b>SRMA</b></i>	<i><b>ERMA</b></i>	<i><b>SRMA</b></i>	<i><b>ERMA</b></i>	<i><b>SRMA</b></i>	<i><b>ERMA</b></i>
BR-12 Watchable Wildlife Area				246	246			363
Cottonwood Riparian Protection Area				42	42			42
Faraasen Park Recreation Area				10	10			10
Fresno OHV				84	84			125
Glasgow OHV				40	40		40	
Little Rocky Mountains			27,688		27,688		27,688	
Marias River				19,032	19,032			19,032
Paulo Fishing Reservoir				74	74			74
South Phillips Recreation Complex				42,217	42,217			42,217
Sweet Grass Hills ACEC					7,419			7,419
Thirty Mile OHV Area					181			
Timber Creek Ridge							67	67
Troika Fishing Reservoir				56	56			56
Wards Dam Watchable Wildlife Area							177	
Total Lands Designated	0	0	27,688	61,800	97,088	244	27,728	69,405
Lands Not Designated (LND)		2,437,474		2,347,986		2,340,142		2,340,341

**Zortman Recreation Management Zone (1,108 acres)**

- *Recreation Setting:* Provides full service facility-based camping in a ponderosa pine rural setting near the small rural community of Zortman.
- *Primary Activities:* Overnight developed camping, day use picnicking, wildlife viewing, recreational gold panning, hiking, horseback riding, and OHV and ATV use.
- *Recreation Management Objective:* Maintain and enhance the facilities at the Camp Creek Campground (Figure 2.3), Horse Corral Campground, and Buffington Day Use Picnic Area as needed to meet recreational demands and comply with public health and safety requirements. Identify and develop new opportunities for facility-based recreation. For example, the Zortman Ranger Station could be fixed up and converted into a rental cabin. Specific areas within this zone could be set aside for recreational gold panning through coordination and/or partnership with the local community.

**Gold Panning**

Gold panning is considered a casual use under the mining regulations (43 CFR 3809), which is described in detail in the Solid Minerals – Locatable section.

The BLM does have unpatented mining claims in the planning area. The mining claim provides the right of the claimant to search for and develop minerals. The recreational panner should not go onto another person's claim for panning without the claimant's permission.

**Landusky Recreation Management Zone (107 acres)**

- *Recreation Setting:* Provides small facility-based camping in a ponderosa pine rural setting near the very small rural community of Landusky.
- *Primary Activities:* Overnight developed camping, wildlife viewing, hiking, and OHV and ATV use.
- *Recreation Management Objective:* Maintain and enhance the facilities at the Montana Gulch Campground (Figure 2.3) as needed to meet recreational demands and comply with public health and safety requirements.

**Little Rockies Recreation Management Zone (26,473 acres)**

- *Recreation Setting:* Provides an excellent back country experience for dispersed camping, wildlife viewing, hiking, horseback riding, and OHV and ATV use opportunities in a ponderosa pine roaded natural setting.
- *Primary Activities:* Dispersed camping, hiking, horseback riding, hunting, fishing, OHV and ATV use.
- *Recreation Management Objective:* Provide for dispersed back country experiences for both nonmotorized and motorized recreational activities. Emphasize the "Leave No Trace" and "Tread Lightly" programs to aid in minimizing the conflicts of use between motorized and nonmotorized BLM land users.

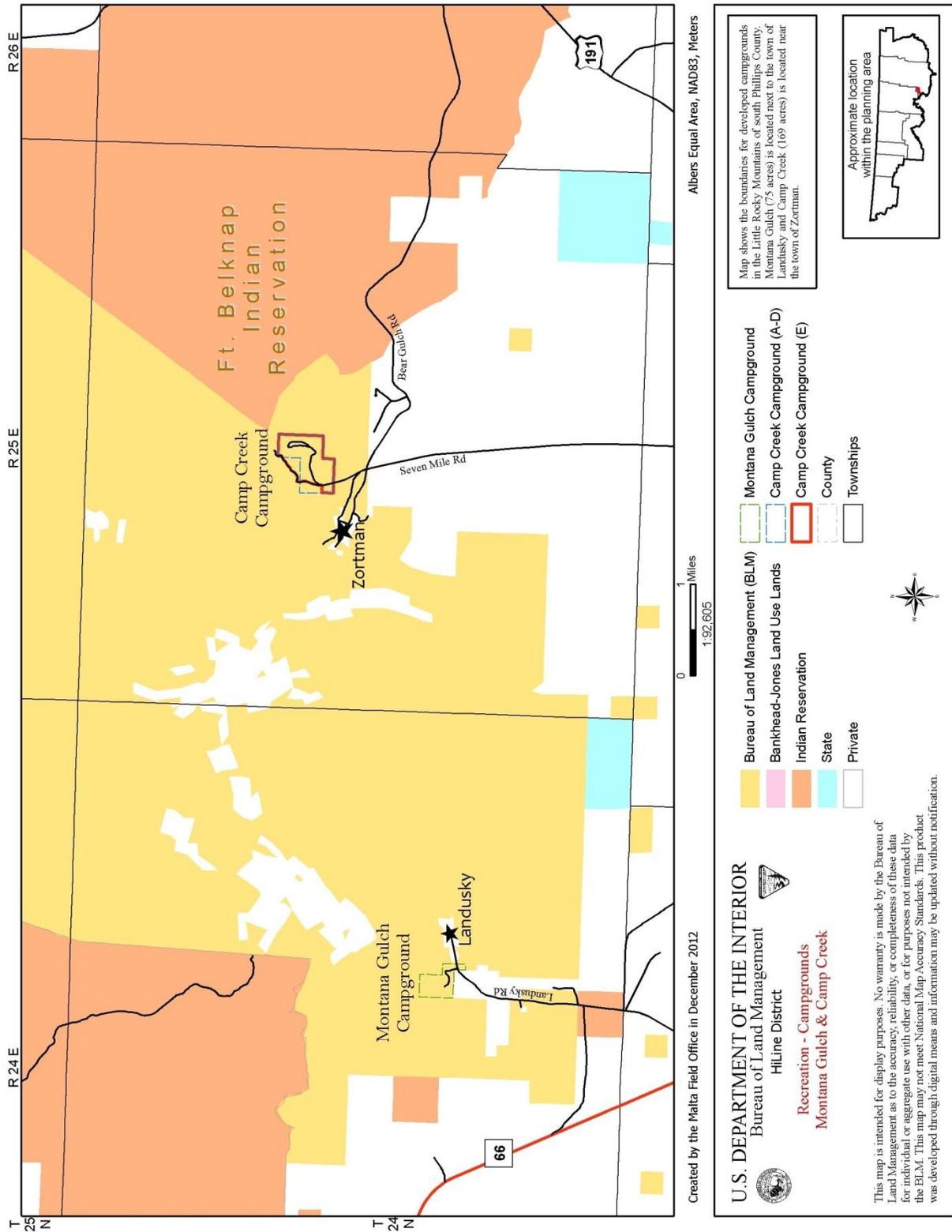
In addition to the three RMZs for the Little Rocky Mountains SRMA, the BLM would allocate three RMZs within the Marias River SRMA.

The primary recreation management strategy for the Marias River SRMA would be to target the demonstrated community tourism market. Residents of local communities are the primary visitors of the area who come to float, fish, camp and picnic on or along the Marias River. These recreation opportunities would be sustained and enhanced through the implementation of identified recreation management objectives and the maintenance of prescribed ROS classes.

**Upper Marias River Recreation Management Zone (6,573 acres)**

- *Recreation Setting:* Provides for floating, fishing and camping opportunities in an undeveloped semi-primitive motorized setting on and along the Marias River.
- *Primary Activities:* Raft, canoe and kayak floating, fishing, dispersed camping and day use picnicking.

**Figure 2.3**  
**Montana Gulch and Camp Creek Campgrounds**



- *Recreation Management Objective:* Ensure that the area continues to provide undeveloped water-based recreation opportunities.

#### **Middle Marias River Recreation Management Zone (1,850 acres)**

- *Recreation Setting:* Provides for floating, fishing, camping and picnicking opportunities with some developed recreational facilities in a roaded natural setting on and along the Marias River.
- *Primary Activities:* Raft, canoe, and kayak floating, fishing, swimming, camping and day use picnicking.
- *Recreation Management Objective:* Maintain and enhance the recreation facilities at the Pugsley Bridge and Moffat Bridge boat launch and take out areas as needed to meet recreational demands and comply with public health and safety requirements.

#### **Lower Marias River Recreation Management Zone (10,608 acres)**

- *Recreation Setting:* Provides for floating, fishing, and dispersed camping opportunities in an undeveloped isolated rugged canyon and semi-primitive setting with very little motorized access along the Marias River.
- *Primary Activities:* Raft, canoe, and kayak floating, fishing and dispersed camping.
- *Recreation Management Objective:* Ensure that the area continues to provide undeveloped water-based recreation opportunities.

### **Alternative E (Preferred Alternative)**

The BLM would manage two SRMAs (Glasgow OHV and Little Rocky Mountains) and ten ERMAs (BR-12, Cottonwood Riparian Area, Faraasen Park, Fresno OHV, Marias River, Paulo Fishing Reservoir, South Phillips Recreation Complex, Sweet Grass Hills ACEC, Timber Creek Ridge, and Troika Fishing Reservoir) (Table 2.17 and Map 2.9). The remainder of the planning area would be managed as LND.

The BLM would allocate three RMZs within the Little Rocky Mountains SRMA, as described in Alternative D.

Due to its limited size (40 acres) and uniformity in recreational opportunities throughout, the Glasgow OHV SRMA would not be divided into management zones.

Objectives and management actions for the individual SRMAs and ERMAs are identified in Appendix S.

## **Recreation Sites**

The alternatives contain both land use planning-level and implementation-level decisions for recreation and visitor services. Implementation-level decisions for recreation management areas and recreation sites (Map 2.10) can be found in Appendix S.



Greens Bench, Chouteau County

Photo by Brian Hockett

# Renewable Energy Resources

### Goal

*Provide opportunities for the development of renewable energy from resources such as biomass, geothermal, solar and wind, while minimizing adverse impacts to other resource values.*

## Objective

Work with local communities, state and local government, and other federal agencies in building a clean energy future by providing sites for environmentally sound development of renewable energy on BLM land.

## Decisions Common to All Alternatives

Renewable energy projects on BLM land may include biomass, geothermal, solar, and wind projects, and the siting of transmission facilities needed to deliver the produced power to the consumer. Opportunities for development would be provided to the extent consistent with other goals, objectives, and requirements of this plan.

Solar and wind energy exploration and development authorization would be subject to the same laws, regulations, and guidelines as other commercial rights-of-way. Terms and conditions for authorizations including site testing, monitoring and development would incorporate applicable BMPs, current professional practice, and recent scientific findings.

### Biomass

The BLM would explore opportunities to provide a reliable and sustainable supply of woody biomass that may be made available from BLM land in the planning area. Biomass can be used to produce bio-energy and/or bio-based products such as plastics, ethanol, and diesel. Biomass can also be used to produce the full range of wood products including lumber, composites, paper and pulp, furniture, housing components, and round wood.

**Biomass**

Woody biomass is defined as the trees and woody plants, including limbs, tops, needles, leaves, and other woody parts grown in a forest, woodland, or rangeland environment, that are the byproducts of forest management.

### Geothermal

BLM lands in the planning area would be available for geothermal leasing, unless located within the Burnt Lodge or Bitter Creek WSAs, in priority sage-grouse habitat, or in instances where it is determined that issuing the lease would cause unnecessary or undue degradation to BLM lands or resources. No Known Geothermal Resource Areas (KGRAs) are located in the planning area. (A region identified by the U.S. Geological Survey as containing geothermal resources. New leasing regulations no longer use KGRAs as a basis for the leasing process.)

Geothermal projects would be designed and developed in accordance with the Geothermal Leasing in the Western United States Programmatic EIS (BLM and USFS 2008). A site-specific environmental analysis would be prepared for any proposed exploration or development of geothermal resources. The analysis would address the application of stipulations and develop any additional mitigation measures over and above the lease stipulations required.

### Solar

BLM land that is designated as an exclusion area (e.g., WSAs) would not be available for solar energy rights-of-way. As a result, these areas would be closed to commercial solar energy development. Opportunities for solar development would be provided consistent with the other goals, objectives, and requirements of this plan. Applications for solar energy projects would be processed and authorized as rights-of-way under Title V of FLPMA. Utility-scale concentrating solar power or photovoltaic electric generating facilities must comply with the BLM’s planning, environmental, and right-of-way application requirements as established by BLM guidance (WO IM No. 2011-003) or additional Bureau guidance and/or policy.

## Wind

BLM land that is designated as an exclusion area (e.g., WSAs) would not be available for wind energy rights-of-way. As a result, these areas would be closed to commercial wind energy development. This includes wind energy site monitoring and testing.

The use of wind turbines at the Zortman/Landusky mine reclamation area to lower the cost of electricity needed to operate the pumps and water treatment plants was approved under the Final Engineering Evaluation/Cost Analysis (EE/CA) for Water Management at the Zortman and Landusky Mines (BLM 2006d), and is not discussed or analyzed further in this document.

Wind energy projects would be designed and developed in accordance with the Wind Energy Development on BLM-Administered Lands in the Western United States Final Programmatic EIS (BLM 2005); BLM wind energy development policy (WO IM No. 2009-043) and subsequent policy and guidance issued by the BLM; and U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines (USFWS 2012b). Implementation of any proposed management action would ensure that potential adverse impacts to natural and cultural resources would be minimal to negligible through the use of BMPs (Appendix C). Areas available for wind energy development would include mitigation for surface-disturbing and disruptive activities. Areas with fluid minerals NSO, CSU, and Timing Limitation Stipulations will be treated as avoidance areas for wind energy (Appendix E). This mitigation may restrict wind energy development in some areas.

Prior to authorizing any wind energy projects, a site-specific environmental review would be conducted to determine project feasibility, and to address and mitigate impacts. This environmental review would include the appropriate level of public involvement.

### Alternative A (Current Management)

About 92% of the planning area (2,248,336 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs) (Table 2.18). Mitigation measures would be applied on a case-by-case basis during project level planning if an evaluation of the project area indicates the presence of important resources.

Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.

About 8% of the planning area would be exclusion areas for wind energy rights-of-way (189,138 acres) (Table 2.18). This includes the Bitter Creek and Burnt Lodge WSAs, large reservoirs and waterfowl complexes, recreation sites, and National Historic Trails. The exclusion areas are shown in Table 2.19.

### Alternative B

Less than 1% of the planning area (6,637 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs), and about 10% of the planning area (239,014 acres) would be avoidance areas (Table 2.18). Avoidance areas include mitigation for cultural and paleontological resources, visual resources, soils, riparian areas, and wildlife consistent with the stipulations outlined in the Fluid Minerals section of Chapter 2 for surface-disturbing and disruptive activities. Mitigation measures would be applied on a case-by-case basis during project level planning if an evaluation of the project area indicates the presence of important resources. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.

About 90% of the planning area (2,191,823 acres) would be exclusion areas for wind energy rights-of-way (Table 2.18). This includes the Bitter Creek and Burnt Lodge WSAs, Little Rocky Mountains and Sweet Grass Hills TCPs, VRM Class I and II areas, ACECs, large reservoirs and waterfowl complexes, most wildlife habitat, recreation sites, National Historic Trails, and lands with wilderness characteristics. The exclusion areas are shown in Table 2.19 and Map W.7, which is available at <http://blm.gov/8qkd>.

## Alternative C

About 4% of the planning area (106,182 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs) and 34% of the planning area (821,335 acres) would be avoidance areas (Table 2.18). Avoidance areas include mitigation for cultural and paleontological resources, visual resources, soils, riparian areas, and wildlife consistent with the stipulations outlined in the Fluid Minerals section of Chapter 2 for surface-disturbing and disruptive activities. Mitigation measures would be applied on a case-by-case basis during project level planning if an evaluation of the project area indicates the presence of important resources. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.

About 62% of the planning area would be exclusion areas for wind energy rights-of-way (1,509,958 acres) (Table 2.18). This includes the Bitter Creek and Burnt Lodge WSAs, Little Rocky Mountains and Sweet Grass Hills TCPs, VRM Class I areas, ACECs, large reservoirs and waterfowl complexes, some wildlife habitat, recreation sites, and National Historic Trails. The exclusion areas are shown in Table 2.19 and Map W.7, which is available at <http://blm.gov/8qkd>.

## Alternative D

About 10% of the planning area (231,961 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs) and 78% of the planning area (1,912,095 acres) would be avoidance areas (Table 2.18). Avoidance areas include mitigation for cultural and paleontological resources, visual resources, soils, riparian areas, and wildlife consistent with the stipulations outlined in the Fluid Minerals section of Chapter 2 for surface-disturbing and disruptive activities. Mitigation measures would be applied on a case-by-case basis during project level planning if an evaluation of the project area indicates the presence of important resources. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.

About 12% of the planning area (293,418 acres) would be exclusion areas for wind energy rights-of-way (Table 2.18). This includes the Bitter Creek and Burnt Lodge WSAs, Little Rocky Mountains and Sweet Grass Hills TCPs, VRM Class I areas, ACECs, large reservoirs and waterfowl complexes, recreation sites, and National Historic Trails. The exclusion areas are shown in Table 2.19 and Map W.7, which is available at <http://blm.gov/8qkd>.

## Alternative E (Preferred Alternative)

The Greater Sage-Grouse Priority Habitat Management Areas would be exclusion areas for solar and wind energy rights-of-way. General Habitat Management Areas would be an avoidance area for solar and wind energy rights-of-way.

About 1% of the planning area (33,119 acres) would be open to wind energy rights-of-way with minor constraints (standard terms/conditions and BMPs). Approximately 1,600 acres of open areas near Shelby, Montana would be designated Potential Wind Development Areas as shown on Map 2.11. The lands designated for potential wind development could be offered for competitive leasing at the discretion of the authorized officer. About 36% of the planning area (885,661 acres) would be avoidance areas (Table 2.18). Avoidance areas may include mitigation for cultural resources, paleontological resources, visual resources, soils, riparian areas, and wildlife. Mitigation measures would be applied on a case-by-case basis during project level planning.

Exceptions to avoidance areas may be granted if an environmental review demonstrates that effects could be mitigated to an acceptable level.

About 62% of the planning area would be exclusion areas for wind energy rights-of-way (1,518,695 acres) (Table 2.18). In addition to the Greater Sage-Grouse Priority Habitat Management Areas, this includes the Bitter Creek and Burnt Lodge WSAs, Little Rocky Mountains and Sweet Grass Hills TCPs, ACECs, large reservoirs and waterfowl complexes, some wildlife habitat, recreation sites, lands managed for their wilderness characteristics, and National Historic Trails. The exclusion areas are shown in Table 2.19 and Map 2.11.

	<i>Alternative A (Current Management)</i>		<i>Alternative B</i>		<i>Alternative C</i>		<i>Alternative D</i>		<i>Alternative E (Preferred Alternative)</i>	
	<i>Acres</i>	<i>% of Planning Area</i>	<i>Acres</i>	<i>% of Planning Area</i>	<i>Acres</i>	<i>% of Planning Area</i>	<i>Acres</i>	<i>% of Planning Area</i>	<i>Acres</i>	<i>% of Planning Area</i>
Open Areas	2,248,336	92%	6,637	<1%	106,182	4%	231,961	10%	33,119	1%
Avoidance Areas	0	0%	239,014	10%	821,335	34%	1,912,095	78%	885,661	36%
Exclusion Areas	189,138	8%	2,191,823	90%	1,509,958	62%	293,418	12%	1,518,695	62%

<i>Specific Area</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Cultural Resources</b>					
<i>Little Rocky Mountains TCP</i>	Open	Exclusion Area (30,648 acres).			
<i>Sweet Grass Hills TCP</i>	Open	Exclusion Area (7,718 acres).			
<b>Recreation and Visual Resource Management</b>					
<i>Recreation Sites</i>	Exclusion Area within 1 mile (70,345 acres).	Exclusion Area within 2 mile (147,375 acres).	Exclusion Area within 1 mile (47,876 acres).	Exclusion Area within 1/2 mile (15,299 acres).	Exclusion Area within 1 mile (47,576 acres).
<i>VRM Class I Areas</i>	No VRM Class I Areas	Exclusion Area (90,032 acres).	Exclusion Area (74,506 acres).		
<i>VRM Class II Areas</i>	Open	Exclusion Area (977,396 acres).	Open		
<b>Special Designations</b>					
<i>Azure Cave ACEC</i>	Open	Exclusion Area (141 acres).			
<i>Big Bend of the Milk River ACEC</i>	Open	Exclusion Area (1,972 acres).			
<i>Bitter Creek ACEC and WSA</i>	Exclusion Area (60,693 acres).				
<i>Frenchman Breaks ACEC</i>	N/A**		Exclusion Area (42,020 acres).	Exclusion Area (63,482 acres).	Exclusion Area (42,020 acres).
<i>Grassland Bird/Greater Sage-Grouse Priority Areas ACEC</i>	N/A**	Exclusion Area (461,220 acres).	N/A**	N/A**	N/A**
<i>Greater Sage-Grouse Protection Priority Area ACEC</i>	N/A**	Exclusion Area (930,265 acres).	N/A**	N/A**	N/A**
<i>Kevin Rim ACEC</i>	Avoidance	Exclusion Area (4,557 acres).			
<i>Little Rocky Mountains ACEC</i>	N/A**			Exclusion Area (27,177 acres).	N/A**

Table 2.19

## Specific Exclusion Areas for Commercial Wind Energy Development by Alternative\*

<i>Specific Area</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>Malta Geological ACEC</i>	N/A**	Exclusion Area (6,153 acres).			
<i>Mountain Plover ACEC</i>	Open	Exclusion Area (24,762 acres).			
<i>Sweet Grass Hills ACEC</i>	Open	Exclusion Area (7,419 acres).			
<i>Woody Island ACEC</i>	N/A**	Exclusion Area (22,411 acres).			Exclusion Area (32,869 acres).
<i>Zortman/Landusky Mine Reclamation ACEC</i>	N/A**	Exclusion Area (3,609 acres).		N/A**	Exclusion Area (2,682 acres).
<i>National Historic Trails</i>	Exclusion Area within 1 mile (9,004 acres).	Exclusion Area within 2 miles (20,141 acres).	Exclusion Area within 1 mile (9,005 acres).	Exclusion Area within 1/2 mile (4,365 acres).	Exclusion Area within 1 mile (8,970 acres).
<i>Burnt Lodge WSA</i>	Exclusion Area (13,727 acres)				
<b>Wilderness Characteristics</b>					
<i>Eastern Breaks and Badlands</i>	N/A***	Exclusion Area (10,714 acres)		N/A***	Exclusion Area (16,393 acres)
<i>Prairie Grasslands</i>	N/A***	Exclusion Area (139,654 acres)	Exclusion Area (92,599 acres)	N/A***	N/A***
<i>Sagebrush Grasslands</i>	N/A***	Exclusion Area (203,715 acres)	Exclusion Area (131,854 acres)	N/A***	N/A***
<i>Island Mountain Range</i>	N/A***	Exclusion Area (4,118 acres)		N/A***	N/A***
<i>Western Breaks and Badlands</i>	N/A***	Exclusion Area (28,262 acres)	N/A***	N/A***	N/A***
<b>Wildlife</b>					
<i>Crucial Winter Range (mule deer)</i>	Open	Exclusion Area (8,383 acres).	Exclusion Area (62,577 acres)	Open	Exclusion Area (66,034 acres).
<i>Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas</i>	N/A**	Exclusion Area (Same acres as ACEC).	Exclusion Area (298,772 acres).	N/A**	Exclusion Area (426,355 acres).
<i>Greater Sage-Grouse Protection Priority Habitat Management Area</i>	N/A**	Exclusion Area (Same acres as ACEC).	Exclusion Area (930,265 acres).	N/A**	Exclusion Area (1,006,312 acres).
<i>Large Reservoirs and Waterfowl Complexes</i>	Exclusion Area within 2 miles of large reservoirs and waterfowl complexes; Fort Peck Lake, Nelson, Tiber, Fresno, Whitewater, Dibbler, and Bowdoin (42,900 acres).				
<i>Winter Range (antelope, elk, mule deer, Greater Sage-Grouse)</i>	Open	Exclusion Area (583,341 acres).	Avoidance Area (583,341 acres)		

\* Acreage totals may overlap (e.g., Greater Sage-Grouse Protection Priority Areas and winter range).

\*\* The area would not be designated an ACEC or managed as a priority area under this alternative.

\*\*\* The BLM would manage other multiple uses as a priority over protecting wilderness characteristics.

## Soil Resources

### Goal

*Maintain, improve or restore soil quality, and prevent or minimize erosion and compaction while supporting multiple use management.*

## Objectives

Incorporate soil protection consistent with soil resource capabilities in management actions and objectives for other resources/uses.

Achieve and maintain Standards for Rangeland Health and Guidelines for Livestock Grazing Management.

## Decisions Common to All Alternatives

The BLM would evaluate the effects of a proposed surface-disturbing activity to the soil resource using USDA Natural Resources Conservation Service (NRCS) Soil Survey data/interpretations and/or through an onsite investigation; and would apply mitigation measures/BMPs if necessary, relocate the activity to a more suitable soil type, or deny the authorization.

Authorized surface-disturbing activities would include plans for reclamation. Site-specific reclamation actions should reflect the complexity of the project, environmental concerns, and the reclamation potential of the site (Appendix J).

Authorization could be denied in areas where erosion cannot be effectively controlled/mitigated and reclamation to BLM program-specific standards would likely be unsuccessful.

If a surface-disturbing activity is proposed on a prime farmland, special attention would be required during construction and reclamation to ensure there would be no unnecessary and irreversible conversion of prime farmland to nonagricultural uses (30 U.S.C. 1260, P.L. 95-87, Section 510(d)(1)).

The BLM would use soil survey data/interpretations to predict soil behavior, limitation, or suitability for a given activity or action. Soil interpretations are developed by the cooperators in the National Cooperative Soil Survey (NCSS) and maintained by the NRCS. Soil data and interpretations are ever evolving; therefore, as new or updated soil data and interpretations become available they would supersede prior data and interpretations. Soil interpretations do not preclude activities or actions, but rather provide a reasonable guide to the risk, limitations, and probable outcome of a particular use or practice. The information is not site-specific and does not eliminate the need for onsite investigation of the soil. An example of a criteria-based interpretation that may be used is the Potential Erosion Hazard (Road/Trail).

## Solid Minerals

### Leasable

#### Goal

*Provide opportunities for exploration and development of solid leasable minerals consistent with other resource goals.*

### Objective

Provide for solid minerals leasing in accordance with existing laws and regulations (43 CFR 3400 and 3500).

## Decisions Common to All Alternatives

The BLM would consider proposals for developing leasable minerals (coal, sulfur, and solid and semi-solid bituminous rock) on a case-by-case basis. Site-specific environmental review would be required to lease these minerals. No areas have been identified with economic reserves to support future leasing analysis.

Area wide terms, conditions or other special considerations needed to protect other resources or values would be implemented through coal screen criteria during the leasing stage (43 CFR 3461). At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is “unsuitable” for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

For solid mineral leasing other than coal and oil shale, prospecting permits would be available for all land not closed to mineral leasing in conformance with 43 CFR 3500. Permits would be issued after appropriate environmental review to assess effects and develop mitigation measures. Terms and conditions would be applied to non-energy leasable projects to meet land health standards for uplands, riparian areas and wetlands, water quality, air quality, and native plant and animal species (Appendix C). Discovery of a valuable mineral deposit, within the terms of the prospecting permit, entitles the prospecting permit holder to a preference right lease for mineral development and mining operations as defined in 43 CFR 3809.5.

### Alternative A (Current Management)

The BLM would protect sensitive areas by closing them to mineral leasing (76,477 acres) (Table 2.20 and Map 2.12, which is located at the end of Chapter 2). Sensitive areas include WSAs, and rare and intact important archaeological sites.

### Alternative B

The BLM would protect sensitive areas by closing them to mineral leasing (1,667,506 acres) (Table 2.20). Sensitive areas include WSAs, rare and intact important archaeological sites, essential breeding and nesting areas for raptors, a critical bat hibernaculum, significant paleontological areas, priority habitat for grassland birds, and protection priority areas for Greater Sage-Grouse.

### Alternative C

The BLM would protect sensitive areas by closing them to mineral leasing (1,534,100 acres) (Table 2.20). Sensitive areas include WSAs, rare and intact important archaeological sites, essential breeding and nesting areas for raptors, a critical bat hibernaculum, significant paleontological areas, priority habitat for grassland birds, and protection priority habitat for Greater Sage-Grouse.

### Alternative D

The BLM would protect sensitive areas by closing them to mineral leasing (243,635 acres) (Table 2.20). Sensitive areas include WSAs, rare and intact important archaeological sites, essential breeding and nesting areas for raptors, a critical bat hibernaculum, significant paleontological areas, and priority habitat for grassland birds.

The BLM would apply mitigation measures (Appendix M) to solid mineral leases and prospecting permits to prevent impacts to Greater Sage-Grouse habitat.

### Alternative E (Preferred Alternative)

The BLM would protect sensitive areas by closing them to mineral leasing (1,571,333 acres) (Table 2.20 and Map 2.12). Sensitive areas include WSAs, rare and intact important archaeological sites, essential breeding and nesting areas for raptors, a critical bat hibernaculum, significant paleontological areas, and PHMAs for Greater Sage-Grouse.

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Cultural Resources</b>					
<i>Little Rocky Mountains TCP</i>	Open.	Closed (37,403 acres).			Higher elevations of the Little Rocky Mountains (above 3,600 feet) would be closed to leasing (32,058 acres). The remaining area would be open.
<i>Sweet Grass Hills TCP</i>	Open.	Closed (19,665 acres).			
<b>Special Designations</b>					
<i>Azure Cave ACEC</i>	Open.	Closed (included within the Little Rocky Mountains TCP) (143 acres).			
<i>Big Bend of the Milk River ACEC</i>	Closed (1,972 acres).				
<i>Frenchman Breaks ACEC</i>	N/A*		Closed (39,692 acres).	Closed (57,589 acres).	Closed (39,692 acres).
<i>Grassland Bird/Greater Sage-Grouse Priority Areas ACEC</i>	N/A*	Closed (471,945 acres).	N/A*	N/A*	N/A*
<i>Greater Sage-Grouse Protection Priority Area ACEC</i>	N/A*	Closed (1,023,068 acres).	N/A*	N/A*	N/A*
<i>Kevin Rim ACEC</i>	Open.	Closed (4,567 acres).			
<i>Little Rocky Mountains ACEC</i>	N/A*			Closed (26,958 acres).	N/A*
<i>Malta Geological ACEC</i>	N/A*	Closed (6,153 acres).			
<i>Mountain Plover ACEC</i>	Open.	Closed (24,723 acres).			
<i>Sweet Grass Hills ACEC</i>	Open.	Closed (included within the Sweet Grass Hills TCP) (6,226 acres).			
<i>Woody Island ACEC</i>	N/A*		Closed (16,049 acres)		Closed (24,345 acres).
<i>Zortman/Landusky Mine Reclamation ACEC</i>	N/A*	Closed (3,492 acres).		N/A*	Closed (2,568 acres).
<i>Bitter Creek WSA</i>	Closed (60,733 acres).				
<i>Burnt Lodge WSA</i>	Closed (13,773 acres).				
<b>Wildlife</b>					
<i>Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas</i>	Open.	Closed (Same acres as ACEC).	Closed (317,197 acres).	Open.	Closed (426,355 acres).
<i>Greater Sage-Grouse Protection Priority Habitat Management Area</i>	Open.	Closed (Same acres as ACEC).	Closed (1,023,068 acres).	Open.	Closed (1,006,312 acres).
<b>Zortman Cemetery</b>	Open.	Closed (3 acres).			

\* The area would not be designated an ACEC under this alternative.

## Locatable

Goal

*Provide land use opportunities contributing to economic benefits while protecting or minimizing adverse impacts to other resources.*

### Objective

Provide for locatable mineral entry in accordance with existing laws and regulations (43 CFR 3700 and 3800).

### Decisions Common to All Alternatives

Administration of locatable minerals (gold, copper, lead, zinc, silver, bentonite and diamond/kimberlite) on BLM lands would continue as required by law and regulation by taking the following steps:

- Review and process notices to ensure the proposed actions do not create unnecessary or undue degradation of the environment.
- Review and process Plans of Operations to ensure the proposed actions do not create unnecessary or undue degradation of the environment (43 CFR 3809).
- Conduct at a minimum, annual compliance inspections on each active notice and Plan of Operations.
- Allow casual use where work is done by hand and no explosives are used. Refer inquiries to appropriate agencies for further guidance on other permit requirements. Casual use does not require a permit or prior authorization. However, if necessary, the BLM could monitor casual use to prevent unnecessary and undue degradation.

The BLM would coordinate with the Montana DEQ during the review, approval, inspection and reclamation of mining operations. Requirements of all state and federal laws would be met in the management of mining operations.

Terms and conditions (Appendix P) would be applied to mining activities (within the constraints of the Mining Laws) to meet land health standards for uplands, riparian areas and wetlands, water quality, air resources, and native plant and animal species.

In areas withdrawn from mineral entry, Plans of Operations would not be approved unless the Department of the Interior has determined that the mining claims covered by the Plan of Operations are valid under the Surface Management Regulations at 43 CFR 3809.100.

### Alternative A (Current Management)

The BLM would protect sensitive areas by continuing four mineral withdrawals (19,914 acres) and recommending two new withdrawals (1,991 acres) (Table 2.21 and Map 2.13, which is located at the end of Chapter 2). Sensitive areas include a critical bat hibernaculum, developed recreation sites, and rare and intact important archaeological sites.

The BLM would continue the withdrawal for Azure Cave to protect a critical bat hibernaculum and the withdrawal for the Sweet Grass Hills TCP. Management of the Sweet Grass Hills withdrawal area would primarily focus on preserving

<b>Casual Use</b>
<p>Casual use means activities ordinarily resulting in no or negligible disturbance of the public lands or resources. For example –</p> <p>(1) Casual use generally includes the collection of geochemical, rock, soil, or mineral specimens using hand tools, hand panning; or non-motorized sluicing. It may also include use of small portable suction dredges. It also generally includes use of battery-operated devices for sensing the presence of minerals, and hand and battery-operated drywashers. Operators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use, off-road vehicle use designations contained in BLM land use plans, and the terms of temporary closures ordered by the BLM.</p> <p>(2) Casual use does not include use of mechanized earth-moving equipment, truck-mounted drilling equipment, motorized vehicles in areas when designated as closed to off-road vehicles, chemicals, or explosives. It also does not include occupancy or operations in areas where the cumulative effects of the activities result in more than negligible disturbance. (43 CFR 3809.5)</p>

areas of traditional importance to Native Americans and aquifers in the area that provide potable water to local residents. The BLM would review the withdrawal prior to expiration (2017).

The BLM would continue the withdrawals for the Camp Creek Campground and Montana Gulch Campground.

The BLM would recommend revoking the withdrawals for the Landusky Town Site, Landusky Recreation Site, and Zortman Town Site. The withdrawal for the Zortman/Landusky mine reclamation project would be allowed to expire.

The following new withdrawals would be proposed to segregate the areas from locatable mineral entry:

- A withdrawal of 20 acres to protect the Zortman Cemetery.
- A withdrawal of 1,972 acres in Phillips County (Big Bend of the Milk River ACEC) to protect rare and intact archaeological sites.

## **Alternative B**

The BLM would protect sensitive areas by continuing four mineral withdrawals (20,058 acres) and recommending nine new withdrawals (1,674,298 acres) (Table 2.21). Sensitive areas include a critical bat hibernaculum, rare and intact important archaeological sites, developed recreation sites, essential breeding habitat for mountain plovers and nesting areas for raptors, significant paleontological areas, priority habitat for grassland birds, and protection priority habitat for Greater Sage-Grouse.

The BLM would continue the withdrawal for Azure Cave to protect a critical bat hibernaculum and recommend a 20-year extension for the Sweet Grass Hills withdrawal. Management of the Sweet Grass Hills withdrawal area would primarily focus on preserving areas of traditional importance to Native Americans and aquifers in the area that provide potable water to local residents.

The BLM would recommend that the withdrawals for the Camp Creek and Montana Gulch campgrounds be modified to include the entire recreation sites.

The BLM would recommend revoking the withdrawals for the Landusky Town Site, Landusky Recreation Site, and Zortman Town Site.

The following new withdrawals would be proposed to segregate the areas from locatable mineral entry:

- A withdrawal of 20 acres to protect the Zortman Cemetery.
- A withdrawal of 3,505 acres at the Zortman/Landusky mine reclamation area (upon expiration of the existing withdrawal in 2015) to promote successful reclamation, protect associated infrastructure, and ensure public safety on BLM lands affected by prior mining activities.
- A withdrawal of 37,387 acres in Phillips County (Little Rocky Mountains TCP) to preserve areas of traditional importance to Native Americans.
- A withdrawal of 24,672 acres in south Valley County (Mountain Plover ACEC) to protect essential breeding habitat for mountain plovers.
- A withdrawal of 60,717 acres in north Valley County (Bitter Creek ACEC) to protect significant scenic, wildlife, and cultural values.
- A withdrawal of 469,916 acres in north Valley County to protect priority habitat for grassland birds/Greater Sage-Grouse (Grassland Bird/Greater Sage-Grouse Priority Areas ACEC).

<b>Table 2.21</b>					
<b>Existing and Proposed Mineral Withdrawals by Alternative</b>					
	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Existing Mineral Withdrawals</b>					
<i>Azure Cave</i>	Recommend continuing the withdrawal (143 acres).				
<i>Camp Creek Campground</i>	Recommend continuing the withdrawal (40 acres).	Recommend modifying the withdrawal (169 acres).			
<i>Landusky Recreation Site</i>	Recommend revoking the withdrawal (15 acres).			Recommend revoking the withdrawal on a case-by-case basis for the potential sale or exchange of the BLM parcels (15 acres).	
<i>Landusky Town Site</i>	Recommend revoking the withdrawal (82 acres).			Recommend revoking the withdrawal on a case-by-case basis for the potential sale or exchange of the BLM parcels (82 acres).	
<i>Montana Gulch Campground</i>	Recommend continuing the withdrawal (60 acres).	Recommend modifying the withdrawal (75 acres).			
<i>Sweet Grass Hills TCP</i>	Continue the withdrawal (19,671 acres). BLM would review the withdrawal prior to expiration.	Recommend continuing the withdrawal with a 20-year extension (19,671 acres).	Allow the withdrawal to expire in 2017 (19,671 acres).	Recommend continuing the withdrawal with a 20-year extension (19,671 acres).	
<i>Zortman Town Site</i>	Recommend revoking the withdrawal (108 acres).			Recommend revoking the withdrawal on a case-by-case basis for the potential sale or exchange of the BLM parcels (108 acres).	
<i>Zortman/Landusky Mine Reclamation</i>	Allow the withdrawal to expire (3,530 acres).	Propose a new 20-year withdrawal (3,505 acres) upon expiration of the existing withdrawal in 2015.	Allow the withdrawal to expire (3,530 acres).	Through the withdrawal review process, determine the need for a smaller area (maximum 2,605 acres).	
<b>Proposed Mineral Withdrawals</b>					
<i>Big Bend of the Milk</i>	Recommend a withdrawal	Open.			

**Table 2.21  
Existing and Proposed Mineral Withdrawals by Alternative**

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<i>River ACEC</i>	(1,972 acres).				
<i>Bitter Creek ACEC</i>	Open.	Recommend a withdrawal (60,717 acres).			Open.
<i>Frenchman Breaks ACEC</i>	N/A*		Recommend a withdrawal (39,661 acres).	Recommend a withdrawal (57,540 acres).	Open.
<i>Grassland Bird/Greater Sage-Grouse Priority Areas ACEC</i>	N/A*	Recommend a withdrawal (469,916 acres).	N/A*	N/A*	N/A*
<i>Greater Sage-Grouse Protection Priority Area ACEC</i>	N/A*	Recommend a withdrawal (1,067,376 acres).	N/A*	N/A*	N/A*
<i>Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas</i>	N/A	Recommend a withdrawal (Same acres as ACEC).	Recommend a withdrawal (316,830 acres).	N/A	Open.
<i>Greater Sage-Grouse Protection Priority Habitat Management Area</i>	N/A	Recommend a withdrawal (Same acres as ACEC).	Recommend a withdrawal (1,067,376 acres).	N/A	Open.
<i>Kevin Rim ACEC</i>	Open.	Recommend a withdrawal (4,553 acres).			Open.
<i>Little Rocky Mountains ACEC</i>	N/A*			Recommend a withdrawal for a portion of the area (15,000 acres).	N/A*
<i>Little Rocky Mountains TCP</i>	Open.	Recommend a withdrawal (37,387 acres).	Open.		
<i>Malta Geological ACEC</i>	N/A*	Recommend a withdrawal (6,152 acres).			Open.
<i>Mountain Plover ACEC</i>	Open.	Recommend a withdrawal (24,672 acres).			
<i>Sagebrush Focal Area</i>	N/A				Recommend a withdrawal (927,074 acres).
<i>Woody Island ACEC</i>	N/A*		Recommend a withdrawal (15,804 acres).		Open.
<i>Zortman Cemetery</i>	Recommend a withdrawal (20 acres).				

\* The area would not be designated an ACEC under this alternative.

- A withdrawal of 1,067,376 acres in southern Phillips and Valley Counties to protect Greater Sage-Grouse protection priority habitat (Greater Sage-Grouse Protection Priority Area ACEC).
- A withdrawal of 4,553 acres in Toole County (Kevin Rim ACEC) to protect rare and intact important archaeological sites and essential breeding and nesting habitat for raptors.
- A withdrawal of 6,152 acres in north Phillips County (Malta Geological ACEC) to protect a nationally significant paleontological area.

## Alternative C

The BLM would protect sensitive areas by continuing four mineral withdrawals (20,058 acres) and recommending ten new withdrawals (1,539,290 acres) (Table 2.21). Sensitive areas include a critical bat hibernaculum, rare and intact important archaeological sites, developed recreation sites, essential breeding habitat for mountain plovers and nesting areas for raptors, significant paleontological areas, priority habitat for grassland birds, and protection priority habitat for Greater Sage-Grouse.

The BLM would continue the withdrawal for Azure Cave to protect a critical bat hibernaculum and recommend a 20-year extension for the Sweet Grass Hills withdrawal. Management of the Sweet Grass Hills withdrawal area would primarily focus on preserving areas of traditional importance to Native Americans and aquifers in the area that provide potable water to local residents.

The withdrawals for the Camp Creek and Montana Gulch campgrounds would be modified to include the entire recreation sites.

The BLM would recommend revoking the withdrawals for the Landusky Town Site, Landusky Recreation Site, and Zortman Town Site.

The following new withdrawals would be proposed to segregate the areas from locatable mineral entry:

- A withdrawal of 20 acres to protect the Zortman Cemetery.
- A withdrawal of 3,505 acres at the Zortman/Landusky mine reclamation area (upon expiration of the existing withdrawal in 2015) to promote successful reclamation, protect associated infrastructure, and ensure public safety on BLM lands affected by prior mining activities.
- A withdrawal of 24,672 acres in south Valley County (Mountain Plover ACEC) to protect essential breeding habitat for mountain plovers.
- A withdrawal of 60,717 acres in north Valley County (Bitter Creek ACEC) to protect significant scenic, wildlife, and cultural values.
- A withdrawal of 4,553 acres in Toole County (Kevin Rim ACEC) to protect rare and intact important archaeological sites and essential breeding and nesting habitat for raptors.
- A withdrawal of 6,152 acres in north Phillips County (Malta Geological ACEC) to protect a nationally significant paleontological area.
- A withdrawal of 15,804 acres in north Blaine County (Woody Island ACEC) to protect essential habitat for grassland birds.
- A withdrawal of 39,661 acres in northeastern Phillips County (Frenchman Breaks ACEC) to protect essential habitat for grassland birds.

- A withdrawal of 1,067,376 acres in southern Phillips and Valley Counties to protect Greater Sage-Grouse protection priority habitat.
- A withdrawal of 316,830 acres in north Valley County to protect priority habitat for grassland birds and Greater Sage-Grouse.

### **Alternative D**

The BLM would protect sensitive areas by continuing three mineral withdrawals (387 acres) and recommending eight new withdrawals (184,458 acres) (Table 2.21). Sensitive areas include a critical bat hibernaculum, developed recreation sites, rare and intact important archaeological sites, essential breeding habitat for mountain plovers and nesting areas for raptors, significant paleontological areas, and priority habitat for grassland birds.

The BLM would continue the withdrawal for Azure Cave and modify the withdrawals for the Camp Creek and Montana Gulch campgrounds to include the entire recreation sites. The withdrawals for the Sweet Grass Hills TCP and Zortman/Landusky mine reclamation would be allowed to expire.

The BLM would recommend revoking the withdrawals for the Landusky Town Site, Landusky Recreation Site, and Zortman Town Site.

The following new withdrawals would be proposed to segregate the areas from locatable mineral entry:

- A withdrawal of 20 acres to protect the Zortman Cemetery.
- A withdrawal of 60,717 acres in north Valley County (Bitter Creek ACEC) to protect significant scenic, wildlife, and cultural values.
- A withdrawal of 57,540 acres in northeastern Phillips County (Frenchman Breaks ACEC) to protect essential habitat for grassland birds.
- A withdrawal of 4,553 acres in Toole County (Kevin Rim ACEC) to protect rare and intact important archaeological sites and essential breeding and nesting habitat for raptors.
- A withdrawal of 15,000 acres in south Phillips County (a portion of the Little Rocky Mountains ACEC) to protect Native American cultural and historic values.
- A withdrawal of 6,152 acres in north Phillips County (Malta Geological ACEC) to protect a nationally significant paleontological area.
- A withdrawal of 24,672 acres in south Valley County (Mountain Plover ACEC) to protect essential breeding habitat for mountain plovers.
- A withdrawal of 15,804 acres in north Blaine County (Woody Island ACEC) to protect essential habitat for grassland birds.

Within the limits of the Mining Laws, the BLM would apply conditions of approval (Appendix M) to Plans of Operations to prevent undue and unnecessary degradation to Greater Sage-Grouse habitat.

### **Alternative E (Preferred Alternative)**

The BLM would protect sensitive areas by continuing four mineral withdrawals (20,058 acres) and recommending three new withdrawals (951,766 acres) (Table 2.21 and Map 2.13). Sensitive areas include a critical bat hibernaculum, developed recreation sites, rare and intact important archaeological sites, and essential breeding habitat for mountain plovers.

The BLM would continue the withdrawal for Azure Cave to protect a critical bat hibernaculum and recommend a 20-year extension for the Sweet Grass Hills withdrawal. Management of the Sweet Grass Hills withdrawal area would primarily focus on preserving areas of traditional importance to Native Americans and aquifers in the area that provide potable water to local residents.

Through the withdrawal review process, the BLM would consider the need for a new withdrawal or right-of-way to promote success for the Zortman/Landusky mine reclamation. The area for the withdrawal or right-of-way would be based on the need to maintain and protect the infrastructure associated with the reclamation activities, and would likely not exceed the boundary of the Zortman/Landusky Mine Reclamation ACEC.

The withdrawals for the Camp Creek and Montana Gulch campgrounds would be modified to include the entire recreation sites.

The BLM would recommend revoking the withdrawals for the Landusky Town Site, Landusky Recreation Site, and Zortman Town Site on a case-by-case basis for the potential sale or exchange of the BLM parcels within the withdrawal boundaries.

The following new withdrawals would be proposed to segregate the areas from locatable mineral entry:

- A withdrawal of 24,672 acres in south Valley County (Mountain Plover ACEC) to protect essential breeding habitat for mountain plovers.
- A withdrawal of 20 acres to protect the Zortman Cemetery.
- A withdrawal of 927,074 acres to protect the Sagebrush Focal Area.

Within the limits of the Mining Laws, the BLM would apply conditions of approval (Appendix M) to Plans of Operations to prevent undue and unnecessary degradation to Greater Sage-Grouse habitat.

## **Salable (Mineral Material)**

### Goal

*Provide for the extraction of mineral materials to meet public demand while minimizing adverse impacts to other resource values.*

### **Objective**

Provide for mineral material sales in accordance with existing laws and regulations (43 CFR 3600).

### **Decisions Common to All Alternatives**

The BLM would issue sales contracts for mineral materials (sand, gravel, stone, limestone, and clay) where disposal is deemed to be in the public interest, while providing for reclamation of mined lands and preventing unnecessary or undue impact to other resources. All lands not withdrawn or discretionally closed are available for mineral material disposal. Mineral material permits are considered on a case-by-case basis and issued at the discretion of the authorized officer.

Free use permits may be issued to government agencies or subdivisions and to nonprofit organizations. Materials obtained by a free use permit may not be bartered or sold.

Mineral material sale contracts are valued according to the BLM statewide general appraisal schedule or through individual site-specific appraisals.

Common use areas or community pits would be designated if the level of localized activity warrants. New mineral material sites would be evaluated on a case-by-case basis.

Mineral material sales would be processed on a case-by-case basis. Salable mineral sites would have an approved mining and reclamation plan and an environmental review prior to being opened. Where resource conflicts cannot be adequately mitigated, a permit would be denied. Operating stipulations to protect other resource values would be included in mineral material permits.

The collection of petrified wood and invertebrate fossils for personal use would be allowed as limited by the regulations (43 CFR 3620 and 8365) in areas not specifically closed.

### **Alternative A (Current Management)**

The BLM would protect sensitive areas by closing them to mineral material sales (74,506 acres) (Table 2.22 and Map 2.14, which is located at the end of Chapter 2). Sensitive areas include WSAs.

### **Alternative B**

The BLM would protect sensitive areas by closing them to mineral material sales (1,424,575 acres) (Table 2.22). Sensitive areas include WSAs; Azure Cave ACEC; Malta Geological ACEC; Zortman/Landusky Mine Reclamation ACEC; Grassland Birds/Greater Sage-Grouse Priority Areas ACEC; Greater Sage-Grouse Protection Priority Area ACEC; and Zortman Cemetery.

### **Alternative C**

The BLM would protect sensitive areas by closing them to mineral material sales (1,480,316 acres) (Table 2.22). Sensitive areas include WSAs; Azure Cave ACEC; Frenchman Breaks ACEC; Malta Geological ACEC; Woody Island ACEC; Zortman/Landusky Mine Reclamation ACEC; Zortman Cemetery; Grassland Birds/Greater Sage-Grouse Priority Areas; and Greater Sage-Grouse Protection Priority Area.

### **Alternative D**

The BLM would protect sensitive areas by closing them to mineral material sales (275,814 acres) (Table 2.22). Sensitive areas include WSAs; Azure Cave ACEC; Big Bend of the Milk River ACEC; Little Rocky Mountains TCP and ACEC; Sweet Grass Hills TCP and ACEC; Kevin Rim ACEC; Malta Geological ACEC; Frenchman Breaks ACEC; Mountain Plover ACEC; Woody Island ACEC; and Zortman Cemetery.

### **Alternative E (Preferred Alternative)**

The BLM would protect sensitive areas by closing them to mineral material sales (1,666,720 acres) (Table 2.22 and Map 2.14). Sensitive areas include WSAs; Azure Cave ACEC; a portion of the Little Rocky Mountains TCP; Sweet Grass Hills TCP and ACEC; Big Bend of the Milk River ACEC; Frenchman Breaks ACEC; Kevin Rim ACEC; Malta Geological ACEC; Mountain Plover ACEC; Woody Island ACEC; and Zortman Cemetery. The PHMAs (1,432,667 acres) would be closed to commercial use permits, but open to free use permits (e.g., county gravel pits).



Bitter Creek Area, Valley County

Photo by Kathy Tribby

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Cultural Resources</b>					
<i>Little Rocky Mountains TCP</i>	Open.			Closed (37,403 acres).	Higher elevations of the Little Rocky Mountains (above 3,600 feet) would be limited to those mineral material uses necessary for reclamation activities and maintenance of the existing road system (32,058 acres).
<i>Sweet Grass Hills TCP</i>	Open.			Closed (19,665 acres).	
<b>Special Designations</b>					
<i>Azure Cave ACEC</i>	Open.	Closed (143 acres).			
<i>Big Bend of the Milk River ACEC</i>	Open.			Closed (1,972 acres).	
<i>Frenchman Breaks ACEC</i>	N/A*		Closed (39,692 acres).	Closed (57,589 acres).	Closed (39,692 acres).
<i>Kevin Rim ACEC</i>	Open.			Closed (4,567 acres).	
<i>Little Rocky Mountains ACEC</i>	N/A*			Closed (26,815 acres).	N/A*
<i>Malta Geological ACEC</i>	N/A*	Closed (6,153 acres).			
<i>Mountain Plover ACEC</i>	Open.			Closed (24,723 acres).	
<i>Sweet Grass Hills ACEC</i>	Open.			Closed (6,226 acres).	
<i>Woody Island ACEC</i>	N/A*		Closed (16,049 acres).		Closed (24,345 acres).
<i>Zortman/Landusky Mine Reclamation ACEC</i>	N/A*	Closed (3,505 acres).		N/A*	Open.
<i>Grassland Bird/Greater Sage-Grouse Priority Areas ACEC</i>	N/A*	Closed (317,197 acres).	N/A*	N/A*	N/A*
<i>Greater Sage-Grouse Protection Priority Area ACEC</i>	N/A*	Closed (1,023,068 acres).	N/A*	N/A*	N/A*
<i>Burnt Lodge WSA</i>	Closed (13,773 acres).				
<i>Bitter Creek WSA</i>	Closed (60,733 acres).				
<b>Wildlife</b>					
<i>Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas</i>	N/A	Closed (Same acres as ACEC).	Closed (317,197 acres).	N/A	Closed to commercial (426,355 acres); Open to free use.
<i>Greater Sage-Grouse Protection Priority Habitat Management Area</i>	N/A	Closed (Same acres as ACEC).	Closed (1,023,068 acres).	N/A	Closed to commercial (1,006,312 acres); Open to free use.
<b>Zortman Cemetery</b>	Open.	Closed (3 acres).			

\* The area would not be designated an ACEC under this alternative.

## Special Designations

### Areas of Critical Environmental Concern

Goal

*Protect relevant and important values through ACEC designation and apply special management where standard or routine management is not adequate to protect the values from risks or threats of damage/degradation or to provide for public safety from natural hazards.*

Areas of Critical Environmental Concern (ACECs) are BLM lands where special management attention is needed to protect important and relevant values. To be designated as an ACEC, a nominated area must meet the criteria of relevance and importance as outlined in 43 CFR 1610.7-2 and BLM Manual 1613. If the relevance and importance criteria are met, an area is identified as a potential ACEC and considered for designation and management in the resource planning process. Designation is based on whether or not a potential ACEC requires special management attention.

While an ACEC may emphasize one or more unique resources, other multiple use management can continue within an ACEC as long as the uses do not impair the values for which the area was designated. Special management attention for ACECs means that limited resources may be directed to that area over other, non-designated areas but may or may not require changes in the current management.

Seven existing ACECs were revisited and twelve new nominations were considered (Appendix K and Maps K.1 through K.19). Seven of the new nominations met the criteria of relevance and importance and are addressed as potential ACECs in the alternatives. A summary list of existing and potential ACECs is shown in the Special Designations section of Table 2.28, Summary Comparison of Alternatives, which follows Chapter 2.

### *Existing ACECs*

#### **Azure Cave ACEC**

##### **Purpose of ACEC Designation**

Protect the cave and critical bat hibernaculum while ensuring public safety.

##### **Decisions Common to All Alternatives**

The BLM would retain Azure Cave as an ACEC (141 acres) to protect cave resources and potentially the northernmost bat hibernaculum in the United States (Map 2.15, which is located at the end of Chapter 2). The cave would be managed to protect bats during crucial hibernation periods and allow specific use on a limited basis. Any cave access would need to consider appropriate time periods, white nose syndrome, and management activities to protect the bats.

The area would remain closed to oil and gas leasing and the BLM would continue the withdrawal from mineral entry and location.

##### **Alternative A (Current Management)**

The area would be an avoidance area for wind energy rights-of-way.

The area would be open to solid mineral leasing and mineral material sales.

##### **Alternatives B, C, D, and E (Preferred Alternative)**

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

To protect the cave and critical bat hibernaculum the area would be closed to solid mineral leasing and mineral material sales.

## **Big Bend of the Milk River ACEC**

### **Purpose of ACEC Designation**

Protect the diverse cultural resources and historic sites.

### **Decisions Common to All Alternatives**

The BLM would retain the Big Bend of the Milk River ACEC (1,972 acres) to protect the diverse cultural resources and historic sites representing bison hunting and prehistoric ceremonial use of the Northwestern Plains (Map 2.15, which is located at the end of Chapter 2). Two National Register eligible sites are located within the Big Bend of the Milk River ACEC: Henry Smith and Beaucoup.

The Henry Smith site (1,000 acres) has been allocated for Public Use. The site would be inventoried for cultural resources, and mapping and/or collecting data would be completed as necessary.

The Beaucoup site (1,120 acres) has been allocated for Scientific Use. The site would be inventoried for cultural resources. All resources would be mapped, collected and excavated as necessary for relevant archaeological data.

The area would include an NSO stipulation for oil and gas leasing and the area would remain closed to solid mineral leasing.

### **Alternative A (Current Management)**

The area would be an avoidance area for wind energy rights-of-way.

The BLM would recommend a withdrawal from mineral entry and location. The area would be open to solid mineral material sales.

### **Alternatives B and C**

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would not recommend a withdrawal from mineral entry and location and the area would be open to solid mineral material sales.

### **Alternatives D and E (Preferred Alternative)**

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would not recommend a withdrawal from mineral entry and location. The area would be closed to solid mineral material sales.

## **Bitter Creek ACEC**

### **Purpose of ACEC Designation**

Protect the scenic diversity found within the Bitter Creek watershed.

## **Decisions Common to All Alternatives**

The BLM would retain the Bitter Creek ACEC (60,701 acres) to protect the scenic diversity qualities found within the Bitter Creek watershed (Map 2.15, which is located at the end of Chapter 2). If the Bitter Creek WSA is released by Congress, an ACEC management plan would be completed consistent with the management direction as discussed in the alternatives below. Until an ACEC management plan is completed the area would be managed consistent with BLM Manual 6330-Management of BLM Wilderness Study Areas as appropriate.

The area would remain closed to oil and gas leasing until an ACEC management plan is completed that would address leasing (60,717 acres).

### **Alternative A (Current Management)**

The Northern Border Corridor within the ACEC would be a designated right-of-way corridor with a width of 4 1/2 miles.

The area would be an exclusion area for wind energy rights-of-way.

The area would be open to mineral entry and location.

The area would be closed to solid mineral material sales.

### **Alternative B**

The area would be an avoidance area for rights-of-way. The Northern Border Corridor within the ACEC would be a designated right-of-way corridor with a width of 1 mile.

The area would be an exclusion area for wind energy rights-of-way.

The BLM would recommend a withdrawal from solid mineral entry and location.

The area would be closed to solid mineral material sales.

### **Alternative C**

The area would be an avoidance area for rights-of-way. The Northern Border Corridor within the ACEC would be a designated right-of-way corridor with a width of 2 miles.

The area would be an exclusion area for wind energy rights-of-way.

The BLM would recommend a withdrawal from solid mineral entry and location.

The area would be closed to solid mineral material sales.

### **Alternative D**

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would recommend a withdrawal from mineral entry and location.

The area would be closed to solid mineral material sales.

### **Alternative E (Preferred Alternative)**

The area would be an avoidance area for rights-of-way.

The area would be an exclusion area for wind energy rights-of-way.

The area would be open to solid mineral entry and location.

The area would be closed to solid mineral material sales.

## **Kevin Rim ACEC**

### **Purpose of ACEC Designation**

Protect the diverse archeological resources and significant raptor values.

### **Decisions Common to All Alternatives**

The BLM would retain the ACEC (4,557 acres) to protect the diverse archeological resources and significant raptor habitat (Map 2.15, which is located at the end of Chapter 2).

The area includes an existing communication site. The ACEC would be an avoidance area for rights-of-way.

### **Alternative A (Current Management)**

The area would include an NSO stipulation for oil and gas leasing within 3 miles of identified active raptor nests. The area would also include an NSO stipulation on a case-by-case basis for cultural resources.

The BLM would not authorize projects within 1/4 mile below the base of the Kevin Rim escarpment unless impacts to the cultural resources could be mitigated.

The BLM would encourage right-of-way locations off the west, rather than the east, side of Kevin Rim. Following a raptor inventory, the BLM would determine where right-of-way facilities (both transmission and distribution) could be located off the east side of the rim.

The area would be an avoidance area for wind energy rights-of-way.

The area would be open to solid mineral leasing, mineral entry and location, and mineral material sales.

### **Alternatives B and C**

The area would include an NSO stipulation for oil and gas leasing.

The area would be an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and the BLM would recommend a withdrawal from mineral entry and location. The area would be open to mineral material sales.

### **Alternative D**

The area would include an NSO stipulation for oil and gas leasing.

The area would be an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a withdrawal from mineral entry and location.

### **Alternative E (Preferred Alternative)**

The area would include an NSO stipulation for oil and gas leasing.

New communication facilities should be located at the existing communication site, rather than a new location on Kevin Rim.

The area would be an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales.

The area would be open to mineral entry and location.

## **Mountain Plover ACEC**

### **Purpose of ACEC Designation**

Protect mountain plover habitat that is not associated with black-tailed prairie dogs.

### **Decisions Common to All Alternatives**

The BLM would retain the ACEC (24,762 acres) to protect the mountain plover habitat (Map 2.15, which is located at the end of Chapter 2). The ACEC includes two habitat areas for the mountain plover. The primary habitat is the hardpan area on the valley bottoms (12,000 acres). The secondary habitat areas are on the gentle rises on either side of the valleys.

### **Alternative A (Current Management)**

The area would be open to oil and gas leasing with a TLS stipulation from April 1 through July 31.

The area would be an avoidance area for wind energy rights-of-way.

### **Alternatives B and C**

The area would include an NSO stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would recommend a withdrawal from solid mineral entry and location. The area would be closed to solid mineral leasing.

### **Alternative D**

The area would include an NSO stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would recommend a withdrawal from mineral entry and location. The area would be closed to solid mineral leasing and mineral material sales.

### **Alternative E (Preferred Alternative)**

The area would be closed to oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The BLM would recommend a withdrawal from solid mineral entry and location. The area would be closed to solid mineral leasing and mineral material sales.

## **Prairie Dog Towns within the 7km Complex ACEC**

### **Purpose of ACEC Designation**

Provide and protect habitat for prairie dog associated sensitive species.

### **Alternative A (Current Management)**

The BLM would retain the Prairie Dog Towns within the 7km Complex ACEC (16,392 acres) to provide and protect habitat for prairie dog associated sensitive species (Map 2.15, which is located at the end of Chapter 2). In cooperation with the U.S. Fish and Wildlife Service (USFWS) and MFWP, the BLM would maintain the existing prairie dog habitat and distribution on BLM land within the 7km Complex based on a 1988 survey.

The area would include an NSO stipulation for oil and gas leasing of 1/4 mile from identified essential habitat.

### **Alternatives B, C, D, and E (Preferred Alternative)**

The BLM would not retain the Prairie Dog Towns within the 7km Complex ACEC. Management of prairie dog habitat would be consistent with the Wildlife section of this chapter.

## **Sweet Grass Hills ACEC**

### **Purpose of ACEC Designation**

Protect the diverse cultural and historic resource values.

### **Decisions Common to All Alternatives**

The BLM would retain the ACEC (7,419 acres) to protect the diverse archeological resources (Map 2.15, which is located at the end of Chapter 2). Management of the area would primarily focus on preserving areas of traditional spiritual importance to Native Americans and aquifers in the area that provide potable water to local residents.

### **Alternative A (Current Management)**

The area would include an NSO stipulation for oil and gas leasing. On existing leases, the BLM would work with operators to apply guidelines to any new activity which may threaten areas of traditional spiritual importance to Native Americans or aquifers that provide potable water.

The area would not be available for the sale of commercial wood products.

The area would be closed to OHV use. Off-road travel for administration of a federal lease or permit would be granted, unless specifically prohibited.

The area would be an avoidance area for wind energy rights-of-way.

The BLM would continue the withdrawal from solid mineral entry and location. Part of a Bureau of Reclamation withdrawal (532 acres) was recommended for termination in a withdrawal review effort (May 1993) since the withdrawal is no longer serving the purpose for which it was withdrawn. The remaining 40 acres was recommended for a 20-year term modification (May 1993) since it is serving the purpose for which it was withdrawn by providing for a

current and future riprap quarry for Tiber Reservoir. However, under this alternative the 40 acres would be recommended for withdrawal termination since the continued use of the riprap quarry would be incompatible with the resource values being protected by the ACEC.

The area would be open to solid mineral leasing and mineral material sales.

### **Alternatives B and C**

The area would include an NSO stipulation for oil and gas leasing. On existing leases, the BLM would work with operators to apply guidelines to any new activity which may threaten areas of traditional spiritual importance to Native Americans or aquifers that provide potable water.

The BLM would allow for a full range of forest health treatments in the Sweet Grass Hills ACEC that may include the sale of wood products. The ACEC would not be open for incidental personal use wood products.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to OHV use. Off-road travel for administration of a federal lease or permit would be granted, unless specifically prohibited.

The BLM would recommend a 20-year extension to the withdrawal from mineral entry and location. Part of a Bureau of Reclamation withdrawal (532 acres) was recommended for termination in a withdrawal review effort (May 1993) since the withdrawal is no longer serving the purpose for which it was withdrawn. The remaining 40 acres was recommended for a 20-year term modification (May 1993) since it is serving the purpose for which it was withdrawn by providing for a current and future riprap quarry for Tiber Reservoir. However, under this alternative the 40 acres would be recommended for withdrawal termination since the continued use of the riprap quarry would be incompatible with the resource values being protected by the ACEC.

The area would be closed to solid mineral leasing but open to mineral material sales.

### **Alternative D**

The area would include an NSO stipulation for oil and gas leasing. On existing leases, the BLM would work with operators to apply guidelines to any new activity which may threaten areas of traditional spiritual importance to Native Americans or aquifers that provide potable water.

The BLM would allow for a full range of forest health treatments in the Sweet Grass Hills ACEC that may include the sale of wood products. The ACEC would not be open for incidental personal use wood products.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be designated as limited for OHV use. Travel would be limited to existing roads, primitive roads and trails.

The BLM would not recommend an extension to the withdrawal from solid mineral entry and location. The withdrawal would be allowed to expire in 2017.

The area would be closed to solid mineral leasing and mineral material sales.

### **Alternative E (Preferred Alternative)**

The area would be closed to oil and gas leasing.

The BLM would allow for a full range of forest health treatments in the Sweet Grass Hills ACEC that may include the sale of wood products. The ACEC would not be open for incidental personal use wood products.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to motorized travel. Off-road travel for administration of a federal lease or permit would be granted, unless specifically prohibited.

The BLM would recommend a 20-year extension to the withdrawal from solid mineral entry and location to preserve areas of traditional spiritual importance to Native Americans and aquifers in the area that provide potable water to local residents.

Part of a Bureau of Reclamation withdrawal (532 acres) was recommended for termination in a withdrawal review effort (May 1993) since the withdrawal is no longer serving the purpose for which it was withdrawn. The remaining 40 acres was recommended for a 20-year term modification (May 1993) since it is serving the purpose for which it was withdrawn by providing for a current and future riprap quarry for Tiber Reservoir. However, under this alternative the 40 acres would be recommended for withdrawal termination since the continued use of the riprap quarry would be incompatible with the resource values being protected by the ACEC.

The area would be closed to solid mineral leasing and mineral material sales.

### ***Potential ACECs***

#### **Frenchman Breaks ACEC**

##### **Purpose of ACEC Designation**

Maintain the unique landscape and scenic characteristics and protect the fragile watershed and wildlife species from fragmentation due to roads and other surface-disturbing activities.

##### **Alternatives A (Current Management) and B**

The area would not be designated an ACEC.

##### **Alternative C**

The area would be designated an ACEC (42,020 acres) to maintain the unique landscape and scenic characteristics and protect the fragile watershed and wildlife species from fragmentation.

The area would include an NSO stipulation for oil and gas leasing to protect the fragile watershed and crucial winter range.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a withdrawal from mineral entry and location.

##### **Alternative D**

The area would be designated an ACEC (63,482 acres) to maintain the unique landscape and scenic characteristics and protect the fragile watershed and wildlife species from fragmentation.

The area would include an NSO stipulation for oil and gas leasing to protect the fragile watershed and crucial winter range.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a withdrawal from mineral entry and location.

### **Alternative E (Preferred Alternative)**

The area would be designated an ACEC (42,020 acres) to maintain the unique landscape and scenic characteristics and protect the fragile watershed and wildlife species from fragmentation (Map 2.15, which is located at the end of Chapter 2).

The area would include an NSO stipulation for oil and gas leasing to protect the fragile watershed and crucial winter range.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales.

## **Grassland Bird/Greater Sage-Grouse Priority Areas ACEC**

### **Purpose of ACEC Designation**

Create a public land sagebrush and native grassland reserve to provide high quality habitat for Greater Sage-Grouse, Sprague's pipit and other sagebrush and grassland-dependent species. Maintain these unique habitats and protect them from fragmentation due to anthropogenic disturbances.

### **Alternatives A, C, D, and E (Preferred Alternative)**

The areas would not be designated an ACEC.

### **Alternative B**

The areas would be designated an ACEC (461,220 acres) to maintain the unique habitats and protect them from fragmentation.

The areas would be closed to oil and gas leasing.

The areas would be exclusion areas for all rights-of-way including wind energy.

The areas would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a withdrawal from mineral entry and location.

## **Greater Sage-Grouse Protection Priority Area ACEC**

### **Purpose of ACEC Designation**

Create a public land sagebrush reserve to provide high quality habitat for Greater Sage-Grouse and other sagebrush-dependent species. Maintain this unique habitat and protect it from fragmentation due to anthropogenic disturbances.

### **Alternatives A, C, D, and E (Preferred Alternative)**

The area would not be designated an ACEC.

## **Alternative B**

The area would be designated an ACEC (930,265 acres) to maintain this unique habitat and protect it from fragmentation.

The area would be closed to oil and gas leasing.

The area would be an exclusion area for all rights-of-way including wind energy.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a withdrawal from mineral entry and location.

## **Little Rocky Mountains ACEC**

### **Purpose of ACEC Designation**

Protect prehistoric and historic archaeological resources and spiritual and traditional resources.

### **Alternatives A, B, C, and E (Preferred Alternative)**

The area would not be designated an ACEC.

## **Alternative D**

The area would be designated an ACEC (27,177 acres).

The area would include an NSO stipulation for oil and gas leasing to protect prehistoric and historic archaeological resources in the area.

Management of the area could include limitations on some forest health treatments that may affect viewsheds for significant periods of time (20 years or longer).

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be designated as limited for OHV use; through travel management planning some seasonal restrictions may be placed on roads, primitive roads and trails for certain periods to enhance or avoid cultural resource values.

The BLM would recommend a withdrawal from solid mineral entry and location for a portion of the area (15,000 acres). The withdrawal would be the area north and west of the Zortman/Landusky mine reclamation.

The area would be closed to solid mineral leasing and mineral material sales.

The area would be managed as a VRM Class II.

## **Malta Geological ACEC**

### **Purpose of ACEC Designation**

Protect significant paleontological values for scientific study.

### **Alternative A (Current Management)**

The area would not be designated an ACEC. Paleontological resources across the planning area would be protected as provided for in accordance with the BLM 8270 Guidance and Handbook.

### **Alternatives B, C, and D**

The area would be designated an ACEC (6,153 acres) to protect the significant paleontological values (Map 2.15, which is located at the end of Chapter 2) through special management of the ACEC.

The area would include a CSU stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a withdrawal from mineral entry and location.

### **Alternative E (Preferred Alternative)**

The area would be designated an ACEC (6,153 acres) to preserve the significant paleontological values for scientific inquiry. Other uses would be constrained by measures needed to protect paleontological resources for scientific study. Personal collection of common fossils would not be allowed (Public Law 111-11, Section 6304(e)).

The area would include a CSU stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way to preserve the shallow subsurface paleontological resources.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would not recommend a withdrawal from mineral entry and location.

## **Woody Island ACEC**

### **Purpose of ACEC Designation**

Maintain the unique landscape and scenic characteristics, and protect the fragile watershed and wildlife species from fragmentation due to roads and other surface-disturbing activities.

### **Alternatives A (Current Management) and B**

The area would not be designated an ACEC.

### **Alternatives C and D**

The area would be designated an ACEC (22,411 acres) to maintain the unique landscape and scenic characteristics, and protect the fragile watershed and wildlife species from fragmentation.

The area would include an NSO stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a withdrawal from mineral entry and location.

### **Alternative E (Preferred Alternative)**

The area would be designated an ACEC (32,869 acres) to maintain the unique landscape and scenic characteristics, and protect the fragile watershed and wildlife species from fragmentation (Map 2.15).

The area would include an NSO stipulation for oil and gas leasing.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would not recommend a withdrawal from mineral entry and location.

## **Zortman/Landusky Mine Reclamation ACEC**

### **Purpose of ACEC Designation**

Promote successful reclamation and ensure public safety on public lands affected by prior surface and underground mining activities.

### **Alternative A (Current Management)**

The area would not be designated an ACEC. The withdrawal in support of reclamation activities at the Zortman and Landusky mines would be allowed to expire.

### **Alternatives B and C**

The area would be designated an ACEC (3,609 acres) to promote successful reclamation and ensure public safety on BLM lands affected by prior surface and underground mining activities.

The area would include an NSO stipulation for oil and gas leasing to protect the prehistoric and historic archaeological resources in the area.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be closed to solid mineral leasing and mineral material sales. The BLM would recommend a 20-year withdrawal from mineral entry and location.

### **Alternative D**

The area would not be designated an ACEC. The withdrawal in support of reclamation activities at the Zortman and Landusky mines would be allowed to expire.

### **Alternative E (Preferred Alternative)**

The area would be designated an ACEC (2,682 acres) to promote successful reclamation, protect associated infrastructure, and ensure public safety on BLM lands affected by prior mining activities (Map 2.15).

The area, which is within the higher elevations of the Little Rocky Mountains TCP, would be closed to oil and gas leasing to protect the prehistoric and historic archaeological resources in the area.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.

The area would be designated closed to off-road vehicles to maintain the reclamation and ensure public safety until such time as the reclamation efforts are completed (this includes travel off road and on roads used for reclamation activities). Travel for administrative purposes or for the administration of a federal lease or permit would be granted, unless specifically prohibited in the lease or permit. Travel on roads would also be allowed for access to private land. When the reclamation efforts are completed the area would be limited to designated roads as determined through the travel plan for the Little Rocky Mountains.

The area is within the existing withdrawal (3,530 acres) in support of the reclamation activities at the Zortman and Landusky mines, which expires in 2015. Through the withdrawal review process, the BLM would consider the need for a new withdrawal or right-of-way to promote successful reclamation. The area for the withdrawal or right-of-way would be based on the need to maintain and protect the infrastructure associated with the reclamation activities, but would not exceed the boundary of the ACEC.

The area would be open to solid mineral material sales associated with the need for reclamation materials and maintenance of the existing roads (5 to 6 miles).

## Back Country Byways

### Goal

*Highlight and interpret scenic, historic archaeological or other interest values associated with the back country byways in partnership with communities, interest groups, and state and federal agencies.*

### Objective

Enhance visitor experiences through interpretation of any established back country byways.

### Alternative A (Current Management)

The following routes would be considered for back country byway status: Frenchman Creek; Cottonwood Creek/Black Coulee; Dry Fork/Willow Creek; a North Phillips route through potholes and wetlands complexes; a north Valley access route from Opheim to Hinsdale; and TC Access Road.

### Alternatives B, C, D, and E (Preferred Alternative)

No back country byways would be designated at this time. If a back country byway is identified in the future, the designation would be addressed through a land use plan amendment.

## National Historic Trails

### Goal

*Assist in cooperative efforts to manage current and future National Historic Trails to protect values for which they were designated. In cooperation with trail administrator and other trail managers, both private and public, safeguard the nature and purposes; and conserve, protect, and restore the National Trail resources, qualities, values, and associated settings and the primary use or uses.*

### Objectives

Reduce the potential for uses that substantially interfere with the nature and purposes of the National Trail and avoid types of activities that are incompatible with the purposes for which the National Trail was established.

Provide premier trail visitor experiences for public benefit.

Maximize opportunities for shared National Trail stewardship.

Identify and manage the historic route, historic remnants and artifacts located on BLM-managed lands within the identified Trail Management Corridor for public use, enjoyment, and vicarious trail experiences.

Identify and manage high potential historic sites or high potential route segments located on BLM-managed lands, including the recommendation of additional federal protection components.

Restore altered landscapes located on BLM-managed lands to an identified trail-era condition when applicable and feasible while considering existing multiple uses of the BLM-managed lands.

## **Decisions Common to All Alternatives**

A portion of the Marias River exploration trail of the Lewis and Clark National Historic Trail crosses BLM land (Map 2.10). The BLM would manage this segment of the Lewis and Clark National Historic Trail in a manner that is consistent with the nature and purposes and provisions of Public Law 90-543 (the National Trails System Act) as amended by Public Law 95-265. The Lewis and Clark National Historic Trail Comprehensive Management Plan (NPS 1982) and Foundation Document (NPS 2012) outline management objectives, practices and responsibilities, and emphasize partnerships in trail administration. Scenic and cultural values would be protected on BLM-managed land along this historic trail.

A portion of the Nez Perce National Historic Trail crosses BLM land north of the Upper Missouri River Breaks National Monument and in the Bears Paw Mountains. The BLM would manage this segment of the Nez Perce National Historic Trail in a manner consistent with the purposes and provisions of Public Law 90-543, as amended by Public Law 99-445 and the comprehensive plan being prepared by the U.S. Forest Service.

National Historic Trails and associated Management Corridors would be classified as Category 1 (retention) lands.

The BLM would reclaim disturbances to the trails and associated settings, such as unauthorized routes and other legacy impacts as opportunities arise.

The BLM would implement the Interagency National Historic Trail Plans for the Lewis and Clark and Nez Perce National Historic Trails for BLM-managed lands within identified Trail Management Corridors and participate in the interagency planning update efforts as needed.

The BLM would support partnerships and cooperative agreements with other agencies, local and state authorities, and non-governmental organizations to implement stewardship and educational goals for the National Historic Trails and support the Montana site stewardship program for monitoring and evaluation of significant trail resources.

The BLM would support the development and management of National Trail Auto Tours in partnership with the administrating agency and other interested parties.

The BLM would work in partnership to provide high-quality heritage education, interpretation, and tourism opportunities in reference to National Historic Trails located within the HiLine planning area.

The BLM would identify and acquire lands or easements within the trail corridors from willing sellers to protect resources or provide public access.

## **Alternative A (Current Management)**

### **National Trail Management Corridors**

The BLM would not designate National Trail Management Corridors.

### **Lewis and Clark and Nez Perce (Nee-Me-Poo) National Historic Trails**

The area would include an NSO stipulation for oil and gas leasing within 300 feet of the trail (Table 2.23).

The area would be an exclusion area for wind energy rights-of-way within 1 mile of the established trail centerline (Table 2.23).

The trail would be considered a VRM Class IV (Table 2.23).

	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
Oil and Gas Lease Stipulations	NSO 300 feet from developed and undeveloped recreation trails	NSO within 1/4 mile of National Historic Trails	NSO within and 500 feet from National Historic Trails	NSO within 300 feet of National Historic Trails	NSO within the National Trail Management Corridor of designated National Historic Trails
Avoidance Areas for Rights-of-Way (Acres)	0	20,141	9,005	4,365	8,970
Land Ownership Adjustment	Category 1 (Retention)	Category 1 (Retention)	Category 1 (Retention)	Category 1 (Retention)	Category 1 (Retention)
Exclusion Areas for Wind Energy Rights-of-Way	Exclusion Area within 1 mile (9,004 acres)	Exclusion Area within 2 miles (20,141 acres)	Exclusion Area within 1 mile (9,005 acres)	Exclusion Area within 1/2 mile (4,365 acres)	Exclusion Area within 1 mile (8,970 acres)
Visual Resource Management Classification	VRM Class IV	VRM Class II	VRM Class II	VRM Class IV	VRM Class II

## Alternative B

### National Trail Management Corridors

The BLM would designate a National Trail Management Corridor for both the Lewis and Clark National Historic Trail and the Nez Perce (Nee-Me-Poo) National Historic Trail based on the maps and/or GIS layer supplied to and as identified by the administrating agencies.

The Lewis and Clark National Historic Trail identified corridor would reflect a 1/2 mile wide management zone (1/4 mile either side of the centerline) based on the line as generally depicted in the Vicinity Map, Proposed Lewis and Clark Trail (USDI 1976). This corridor may be modified at a later date following the publication of the Lewis and Clark National Historic Trail Comprehensive Plan by the National Park Service or when further research and/or inventory in relation to the trail indicate a change is needed. Additional NEPA analysis would be conducted at that time.

The Nez Perce (Nee-Me-Poo) National Historic Trail identified corridor would reflect a 1/2 mile wide management zone (1/4 mile either side of the centerline) based on the line as generally depicted in the Nez Perce (Nee-Me-Poo) Trail Study Report (USFS and NPS 1982). This corridor may be modified at a later date following the publication of the Nez Perce National Historic Trail Comprehensive Plan by the U.S. Forest Service or when further research in relation and/or inventory to the trail indicates a change is needed. Additional NEPA analysis would be conducted at that time.

### Lewis and Clark and Nez Perce (Nee-Me-Poo) National Historic Trails

The area would include an NSO stipulation for oil and gas leasing within the established National Trail Management Corridor (1/4 mile either side of the centerline) as shown in Table 2.23.

The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way within 2 miles of the established trail centerline (Table 2.23).

The trail would be considered a VRM Class II (Table 2.23).

## **Alternative C**

### **National Trail Management Corridors**

Proposed management would be the same as Alternative B.

### **Lewis and Clark and Nez Perce (Nee-Me-Poo) National Historic Trails**

The area would include an NSO stipulation for oil and gas leasing within 500 feet of the established trail centerline (Table 2.23).

The area would be an avoidance area for rights-of-way, and an exclusion area for wind energy rights-of-way within 1 mile of the established trail centerline (Table 2.23).

The trail would be considered a VRM Class II (Table 2.23).

## **Alternative D**

### **National Trail Management Corridors**

Proposed management would be the same as Alternative B.

### **Lewis and Clark and Nez Perce (Nee-Me-Poo) National Historic Trails**

The area would include an NSO stipulation for oil and gas leasing within 300 feet of the established trail centerline (Table 2.23).

The area would be an avoidance area for rights-of-way, and an exclusion area for wind energy rights-of-way within 1/2 mile of the established trail centerline (Table 2.23).

The trail would be considered a VRM Class IV (Table 2.23).

## **Alternative E (Preferred Alternative)**

### **National Trail Management Corridors**

The BLM would designate a National Trail Management Corridor for both the Lewis and Clark National Historic Trail and the Nez Perce (Nee-Me-Poo) National Historic Trail based on the maps and/or GIS layer supplied to and as identified by the administrating agencies.

The Lewis and Clark National Historic Trail identified corridor would reflect a 1/2 mile wide management zone (1/4 mile either side of the centerline) based on the line as generally depicted in the Vicinity Map, Proposed Lewis and Clark Trail (USDI 1976). This corridor may be modified at a later date following the publication of the Lewis and Clark National Historic Trail Comprehensive Plan by the National Park Service or when further research and/or inventory in relation to the trail indicate a change is needed. Additional NEPA analysis would be conducted at that time.

The Nez Perce (Nee-Me-Poo) National Historic Trail identified corridor would reflect a 1/2 mile wide management zone (1/4 mile either side of the centerline) based on the line as generally depicted in the Nez Perce (Nee-Me-Poo) Trail Study Report (USFS and NPS 1982). This corridor may be modified at a later date following the publication of the Nez Perce National Historic Trail Comprehensive Plan by the U.S. Forest Service or when further research in relation and/or inventory to the trail indicates a change is needed. Additional NEPA analysis would be conducted at that time.

### **Lewis and Clark and Nez Perce (Nee-Me-Poo) National Historic Trails**

The area would include an NSO stipulation for oil and gas leasing within the established National Trail Management Corridor as shown in Table 2.23.

The area would be an avoidance area for rights-of-way, and an exclusion area for wind energy rights-of-way within 1 mile of the established trail centerline (Table 2.23).

The trail would be considered a VRM Class II (Table 2.23).

## **Wild and Scenic Rivers**

### Goal

*Identify river segments eligible for inclusion in the National Wild and Scenic Rivers System.*

### **Objectives**

Fulfill BLM's obligations under Section 5(d) (1) of the Wild and Scenic Rivers Act and complete eligibility and suitability determinations of planning area river segments.

### **Decisions Common to All Alternatives**

The BLM identified and evaluated various river segments to determine their potential inclusion in the National Wild and Scenic Rivers System per Section 5 (d) of the Wild and Scenic Rivers Act (Appendix L). The river study process is a three-step assessment of eligibility, tentative classification of rivers found to be eligible, and a determination of suitability. The BLM reviewed rivers/streams within the planning area and found a 1/2 mile segment of the Marias River at the confluence of the Missouri River to be eligible.

### **Alternative A (Current Management)**

No segments would be recommended for inclusion in the National Wild and Scenic Rivers System.

### **Alternative B**

The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as suitable. This segment includes about 5 acres of BLM land located within the Upper Missouri River Breaks National Monument. This segment would be classified as recreational and managed consistent with the Upper Missouri River Breaks National Monument Record of Decision and Approved Resource Management Plan (BLM 2008b).

### **Alternatives C, D, and E (Preferred Alternative)**

The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as nonsuitable due to lack of BLM land ownership, the BLM land that is adjacent to the Marias River is included in the Upper Missouri River Breaks National Monument, and management of the area already provides protection for the values along this segment of the Marias River.

## **Wilderness Study Areas**

### Goal

*Manage Wilderness Study Areas (WSAs) so as not to impair their suitability for preservation as wilderness until such time as Congress either designates them as wilderness or releases them from further study.*

## Objectives

Protect and preserve the wilderness characteristics of the existing WSAs (naturalness, solitude, and outstanding opportunities for primitive and unconfined recreation).

## Decisions Common to All Alternatives

The Bitter Creek WSA (Figure 2.4) and Burnt Lodge WSA (Figure 2.5) would be managed according to the BLM Manual 6330-Management of BLM Wilderness Study Areas until such time as Congress acts upon the recommendations. Only Congress can designate or release these lands.

The BLM would prepare a wilderness management plan for any areas designated as wilderness by Congress. The WSAs not designated as wilderness by Congress would subsequently be managed in accordance with guidance for adjacent BLM land unless otherwise specified in this RMP. If released by Congress, the Burnt Lodge WSA would be managed consistent with surrounding BLM land. If released by Congress, the Bitter Creek WSA would be managed as an ACEC and a management plan would be developed to provide semi-primitive, motorized recreation opportunities.

BLM Manual 6330-Management of BLM Wilderness Study Areas describes the policies under which the BLM would manage the WSAs under wilderness review until Congress either designates these lands as wilderness or releases them for other purposes. Section 603(c) of FLPMA tells the BLM how to manage lands under wilderness review, in these words: “During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness...”

This language is referred to as the “nonimpairment” mandate. The BLM would review all proposals for uses and/or facilities within the WSAs to determine whether the proposal meets the nonimpairment standard. Uses and/or facilities found to be nonimpairing may be permitted on lands under wilderness review. Uses and/or facilities found to be impairing would be denied. The following criteria are referred to as the nonimpairment criteria.

### Nonimpairment Criteria

The use, facility, or activity must be temporary. This means a temporary use that does not create surface disturbance or involve permanent placement of facilities may be allowed if such use can easily and immediately be terminated upon wilderness designation. “Temporary” means the use or facility may continue until the date of wilderness designation, at which time the use must cease and/or the facility must be removed. In the WSAs, “surface disturbance” is any new disruption of the soil or vegetation that would necessitate reclamation.

Decisions to allow or deny proposed actions based on the nonimpairment criteria would be included in appropriate decision documents.

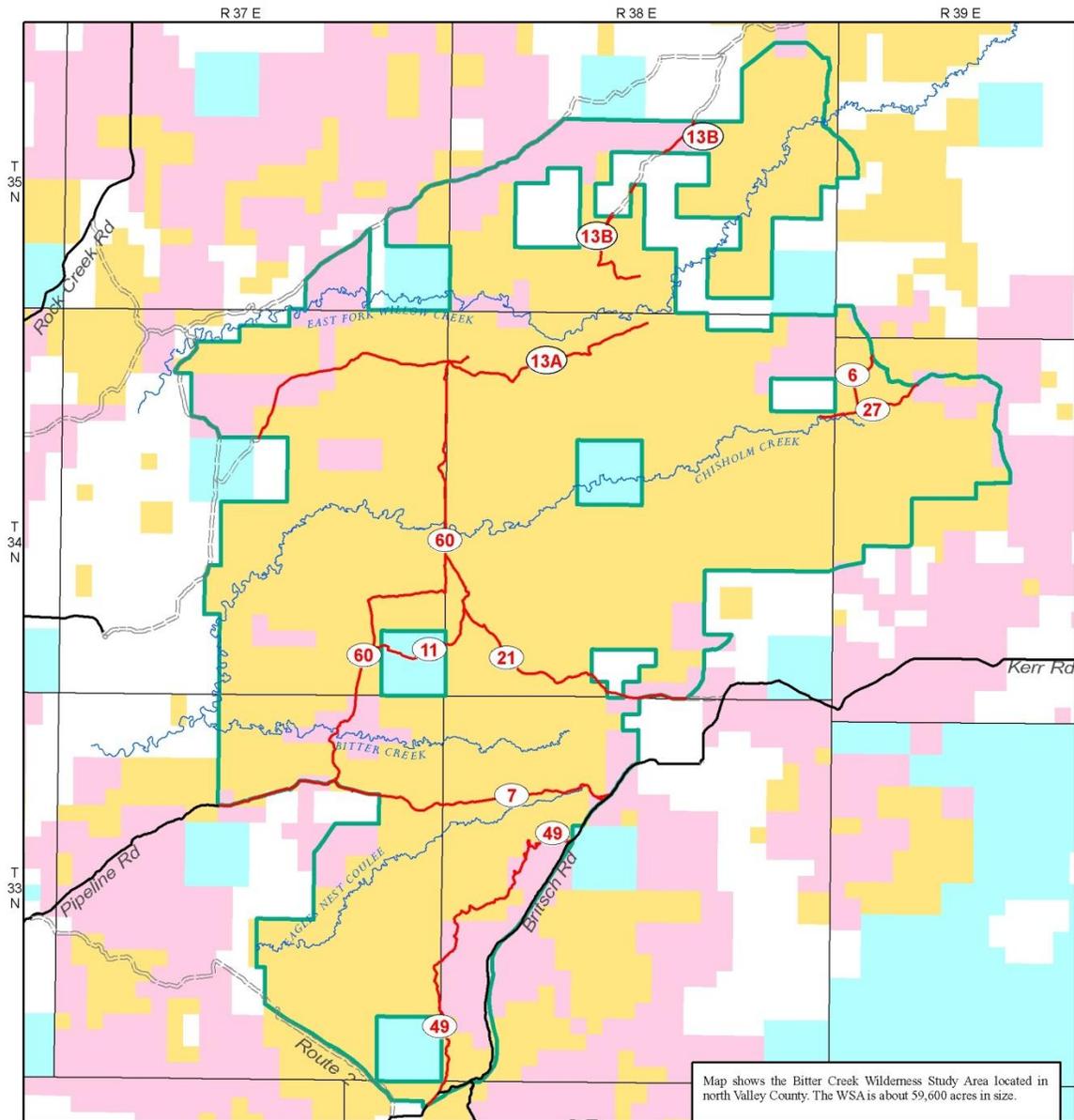
When the use, activity, or facility is terminated, the wilderness values must not have been degraded so far as to significantly constrain the Congress’s prerogative regarding suitability of the area for preservation as wilderness.

The only permitted exceptions to the above rules are:

- emergencies such as suppression activities associated with wildfire or search and rescue operations;
- reclamation activities designed to minimize impacts to wilderness values created by violations and emergencies;
- uses and facilities that are considered grandfathered or valid existing rights under FLPMA;
- ensure public safety as remediation for human-caused hazards in the WSA;
- protect or enhance wilderness characteristics or values; and
- other legal requirements.

Any of these activities should be carried out in the least impairing manner practicable.

**Figure 2.4**  
**Bitter Creek Wilderness Study Area**



Created by the Malta Field Office in December 2012

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1:153,648

Albers Equal Area, NAD83, Meters

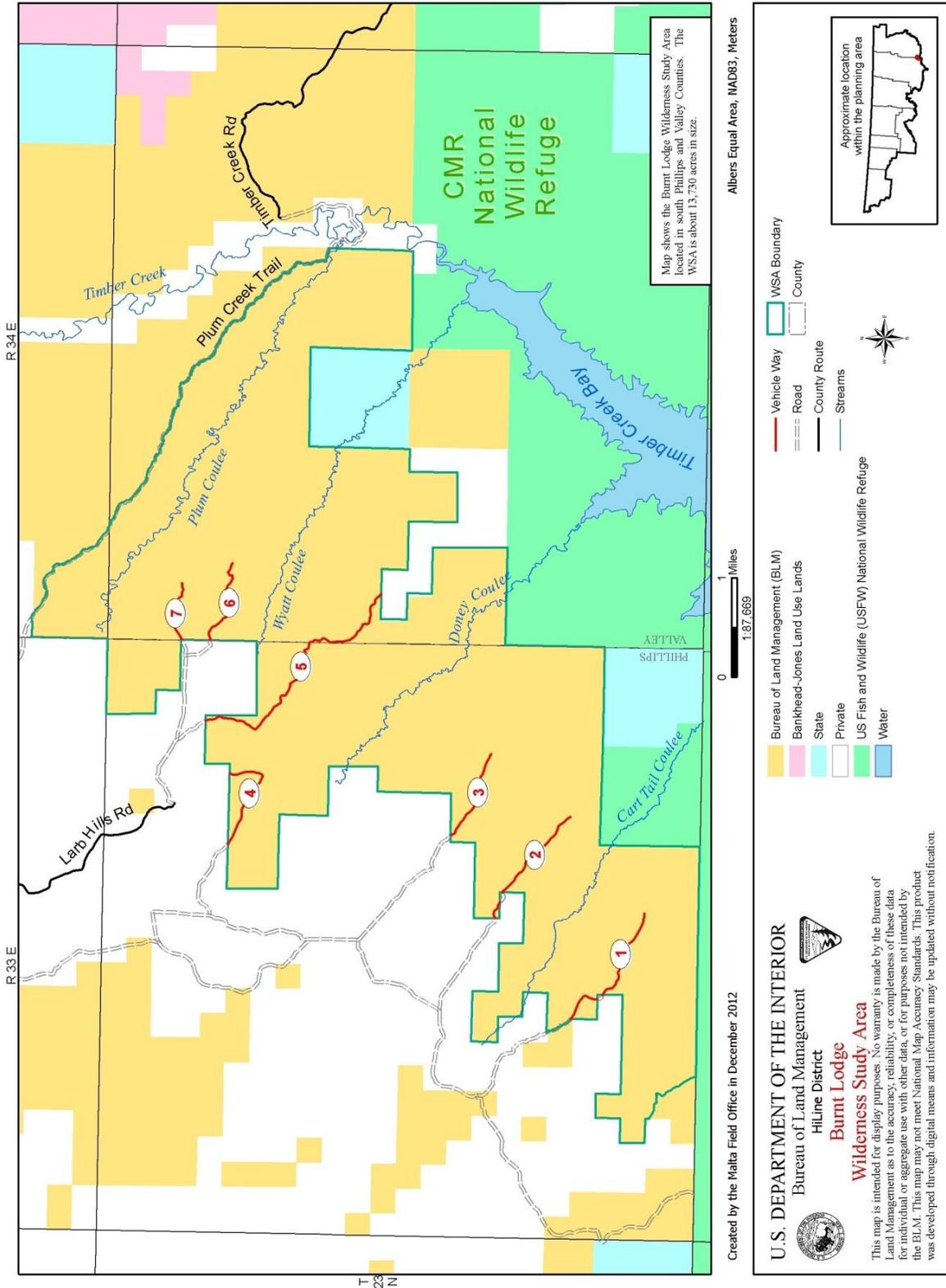
**U.S. DEPARTMENT OF THE INTERIOR**  
Bureau of Land Management  
HiLine District  
**Bitter Creek Wilderness Study Area**

- WSA Boundary
- Bureau of Land Management (BLM)
- Bankhead-Jones Land Use Lands
- State
- Private
- Water
- Vehicle Way
- Road
- County Route
- Streams

This map is intended for display purposes. No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data, or for purposes not intended by the BLM. This map may not meet National Map Accuracy Standards. This product was developed through digital means and information may be updated without notification.

Approximate location within the planning area

**Figure 2.5**  
**Burnt Lodge Wilderness Study Area**



Some lands under wilderness review may contain minor facilities that were found in the wilderness inventory process to be substantially unnoticeable. For example, these may include primitive vehicle routes (“ways”) and livestock developments. BLM Manual 6330 does not require such facilities to be removed or discontinued. They may be used and maintained as before, as long as this does not cause new impacts that would impair the area’s wilderness suitability.

### **Alternative A (Current Management)**

The WSAs would be managed as VRM Class I.

The HiLine District would follow the guidance provided in BLM Manual 6330 for management actions within the WSAs including the following:

- Fire activities and projects in WSAs would adhere to standard agency fire management policies and techniques found in other BLM documents, such as the Guidance for Implementation of Federal Wildland Fire Management Policy. Minimum Impact Suppression Tactics would be used for all suppression efforts. A resource advisor would be assigned to all fires that occur within a WSA.
- Active restoration activities would be conducted to remove unnatural features and rehabilitate unauthorized human disturbances. Unauthorized range facilities would be removed, consistent with range regulations.
- Closed routes would be rehabilitated or converted into non-mechanized trails.
- Public access to WSAs would be provided through public access easements across private lands/roads.
- Lands within WSA boundaries would be acquired from willing sellers. Existing impacts on acquired lands would be rehabilitated.
- Competitive or commercial SRPs would not be authorized within WSAs, with the exception of outfitter and guide uses.

### **Alternatives B, C, D, and E (Preferred Alternative)**

The HiLine District would follow the guidance provided in BLM Manual 6330 for management actions within the WSAs including the following:

- WSAs would be managed as VRM Class I.
- Fire activities and projects in WSAs would adhere to standard agency fire management policies and techniques found in other BLM documents, such as the Guidance for Implementation of Federal Wildland Fire Management Policy. Minimum Impact Suppression Tactics would be used for all suppression efforts. A resource advisor would be assigned to all fires that occur within a WSA.
- Active restoration activities would be conducted to remove unnatural features and rehabilitate unauthorized human disturbances. Unauthorized range facilities would be removed, consistent with range regulations.
- Closed routes would be rehabilitated or converted into non-mechanized trails.
- Public access to WSAs would be provided through public access easements across private lands/roads.
- Lands within WSA boundaries would be acquired from willing sellers. Existing impacts on acquired lands would be rehabilitated.
- Competitive or commercial SRPs would not be authorized within WSAs, with the exception of outfitter and guide uses.

## Vegetation – Rangeland

### Goals

*Manage the vegetative resource to maintain a diversity of ecological conditions on upland vegetation while providing for a variety of multiple uses that are economically and biologically feasible.*

*Maintain, restore, and enhance woody draw communities to achieve multi-aged stands that are healthy, structurally diverse, and reproductively successful.*

## Objectives

Manage uplands to meet health standards and meet or exceed proper functioning condition within site or ecological capability (Appendices H and M). Where appropriate, fire would be used as a management agent to achieve/maintain disturbance regimes supporting healthy functioning vegetation conditions.

Manage existing stands of woody draw species to achieve diversity in age, class, and structure, provide habitat for wildlife.

Manage surface-disturbing activities in a manner to minimize degradation to rangelands, woody draws and soil quality.

In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain a minimum of 70% of lands capable of producing sagebrush with 10 to 30% sagebrush canopy cover. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).

## Decisions Common to All Alternatives

The BLM would ensure consistency with achieving or maintaining Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota (BLM 1997a).

Any increase in vegetation allocation would be applied to watershed protection until soils are stabilized to a satisfactory condition as determined by an interdisciplinary team prior to increasing livestock or wildlife allocations.

The BLM would consult with MFWP and seek concurrence regarding the anticipated benefits and/or impacts of any vegetation treatments that may impact wildlife habitat including priority sage-grouse habitat.

## Alternative A (Current Management)

A minimum rest period of two growing seasons would be required after any major disturbance to vegetation communities. More rest may be required depending on the situation. Major disturbances are defined as mechanical manipulation of rangeland (i.e.; seeding, chiseling, and wildfire or prescribed fire). Requirements for rest following fire (wild or prescribed) would depend on a variety of factors including the type of fuel, time of burn, accessibility of the burned area to livestock, and climatic factors post-burn. Specific timing and the type of rest is determined at the site-specific environmental assessment phase for small disturbances.

Grass seed or hay may be sold from BLM land if an interdisciplinary environmental analysis finds it to be in the best interest of the public. Hay or seed cutting may be used as a land treatment to improve production of crested wheatgrass.

Range improvements (primarily reservoirs, fences and land treatments) would be built to support AMPs. Fences would be designed to allow easy passage of wildlife.

In the Prairie Potholes area, one water source per section would be the guideline for water development.

Alternate water developments, springs, wells, pipelines, etc. would be considered before constructing reservoirs greater than 5 acre feet in volume in soil subgroups 3 and 4 due to erosive soils and high siltation rates which shorten reservoir life. An interdisciplinary team would review the placement of water sources on soil subgroups 3 and 4 in areas that historically have not been grazed. Changes in grazing season or AUM reductions would be considered as alternatives to implementing grazing methods that would require water developments on these soils.

The BLM would use land treatments to meet watershed, grazing management and wildlife objectives. Land treatments would only be applied where grazing management alone would not accomplish the desired result. Clubmoss blue grama vegetation, dense clay and claypan ecological sites, dense big sagebrush stands, and dense pine-juniper stands are the soil/vegetation types considered for treatments. These would increase infiltration of water into the soil, improve ecological condition, improve wildlife habitat, and increase vegetation production.

Monitoring would be conducted on a priority watershed basis.

Increased production resulting from land treatments would be allocated toward accomplishing multiple use objectives. When all objectives of the AMP are accomplished, additional forage resulting from land treatments would normally be allocated 75% to watershed and wildlife and 25% to livestock. If private wildlife funding is used to do the treatment, the additional allocation would be to wildlife. Conversely, where there is substantial contribution by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be allocated to livestock.

Existing crested wheatgrass seedings would be managed where feasible as spring use pastures to defer native rangeland grazing, except where sagebrush invasion has resulted in important wildlife habitat. Crested wheatgrass seedings may be maintained for maximum livestock forage production with up to 70% of the production allocated to livestock when soils are stabilized to a satisfactory condition. Mechanical treatments and fertilization are management practices which renovate old crested wheatgrass stands to benefit associated native rangeland.

Crested wheatgrass seedings may be used to consolidate existing scattered stands of crested wheatgrass into a manageable unit. New seedings of crested wheatgrass or other species may be used where no other option is available to meet the resource objectives. Reseeding old crested wheatgrass stands to native species is not normally feasible due to the difficulty of eliminating the crested wheatgrass and the cost of native seeds.

The initiating party would be required to rehabilitate surface disturbances greater than one-quarter acre.

Native species in the site's natural plant community would normally be seeded to revegetate all surface disturbances. Some reclamation may involve introduced species if these species are necessary to stabilize the site.

## **Alternative B**

### **Objective**

Manage priority sage-grouse habitats so that discrete anthropogenic disturbances cover less than 3% of the total sage-grouse habitat regardless of ownership to protect priority sage-grouse habitats from anthropogenic disturbances that would reduce distribution or abundance of sage-grouse.

### **Management Actions**

Site-specific sage-grouse habitat and management objectives would be developed for BLM land within the Greater Sage-Grouse Protection Priority Area ACEC and the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC. These objectives would be incorporated into the respective allotment management plans (AMPs) or livestock grazing permits as appropriate.

Rest periods from livestock grazing of less than two growing seasons in vegetation treatment areas may be desirable in some circumstances, and would be determined through site-specific interdisciplinary planning, monitoring, and environmental review. For example, it may be desirable in some cases to use grazing to control weedy or invasive species immediately following a vegetation treatment.

Selling of grass seed or hay from BLM land would not be authorized.

Range improvements would be constructed to manage use of vegetation to support multiple use resource management.

Water developments would be installed and/or maintained to facilitate control of livestock use of vegetation, support other uses, and protect resource values. In order to minimize surface disturbance, have reliable water of better quality and not alter normal surface flow of water, alternative water developments would be emphasized before constructing new pits and reservoirs.

The BLM would use land treatments to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives. Within the Greater Sage-Grouse Protection Priority Area ACEC and the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC, only treatments that conserve, enhance or restore Greater Sage-Grouse and/or grassland bird habitat would be allowed.

Rangeland health monitoring and assessments would be conducted within current staffing capabilities. The allotments within the Greater Sage-Grouse Protection Priority Area ACEC and the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC would be high priority for reassessment of land health standards and processing grazing permits as detailed in Appendix M. Rangeland health monitoring plans would be developed and implemented at the field office level.

Increased production resulting from land treatments would be allocated toward accomplishing multiple use objectives. Additional forage resulting from land treatments could be temporarily allocated 75% to watershed and wildlife, and 25% to livestock. Conversely, where there is substantial contribution by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be temporarily allocated to livestock.

The BLM would evaluate crested wheatgrass seedings emphasizing conversion to native species on a case-by-case basis. Where native restoration of old crested wheatgrass seedings is considered, farming and herbicide use would be authorized for up to three years in order to help destroy the old crested wheatgrass seed bank and improve the success of the native seeding.

The initiating party would be required to reclaim surface disturbances greater than one-tenth acre. Range improvement pits and reservoirs would be excluded until abandonment.

All surface disturbances would be reseeded/revegetated with native plant species common to the site's natural plant community. Site-specific environmental analysis may warrant the use, on a case-by-case basis, of introduced species where difficult site stabilization or wildlife concerns prevail.

The best available vegetation treatment would be considered for managing cheatgrass and annual bromes, including but not limited to early spring grazing, mid-summer prescribed fire, and herbicide use.

## **Alternative C**

Site-specific sage-grouse habitat and management objectives would be developed for BLM land within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas. These objectives would be incorporated into the respective AMPs or livestock grazing permits as appropriate.

Rest periods from livestock grazing of less than two growing seasons in vegetation treatment areas may be desirable in some circumstances, and would be determined through site-specific interdisciplinary planning, monitoring, and environmental review. For example, it may be desirable in some cases to use grazing to control weedy or invasive species immediately following a vegetation treatment.

Selling of grass seed, hay, or other vegetative products may be authorized. Hay or seed cutting may be used as a land treatment to improve production of crested wheatgrass provided it is not in conflict with wildlife or wildlife habitat values.

Range improvements would be constructed to manage use of vegetation to support multiple use resource management.

Water developments would be installed and/or maintained to facilitate control of livestock use of vegetation, support other uses, and protect resource values. In order to minimize surface disturbance, have reliable water of better quality and not alter normal surface flow of water, alternative water developments would be emphasized before constructing new pits and reservoirs.

The BLM would use land treatments to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives. Within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas, only treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed.

Rangeland health monitoring and assessments would be conducted within current staffing capabilities. The allotments within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas would be high priority for reassessment of land health standards and processing grazing permits as detailed in Appendix M. Rangeland health monitoring plans would be developed and implemented at the field office level.

Increased production resulting from land treatments would be allocated toward accomplishing multiple use objectives. Additional forage resulting from land treatments could be temporarily allocated 75% to watershed and wildlife, and 25% to livestock. Conversely, where there is substantial contribution by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be temporarily allocated to livestock.

Existing crested wheatgrass seedings would be managed where feasible as spring use pastures to defer native rangeland grazing. Crested wheatgrass seedings would be maintained for maximum livestock forage production with up to 70% of the production allocated to livestock when soils are stabilized to a satisfactory condition. Mechanical treatments and fertilization are management practices which renovate old crested wheatgrass stands to benefit associated native rangeland. Additional crested wheatgrass seedings may be used to consolidate existing scattered stands of crested wheatgrass into manageable units. Where native restoration of old crested wheatgrass seedings is considered, farming and herbicide use could be authorized for up to three years in order to help destroy the old crested wheatgrass seed bank and improve the success of the native seeding.

The initiating party would be required to reclaim surface disturbances greater than one-tenth acre. Range improvement pits and reservoirs would be excluded until abandonment.

All surface disturbances would be reseeded/revegetated with native plant species common to the site's natural plant community. Site-specific environmental analysis may warrant the use, on a case-by-case basis, of introduced species where difficult site stabilization or wildlife concerns prevail.

The best available vegetation treatment would be considered for managing cheatgrass and annual bromes, including but not limited to early spring grazing, mid-summer prescribed fire, and herbicide use.

## **Alternative D**

Rest periods from livestock grazing of less than two growing seasons in vegetation treatment areas may be desirable in some circumstances, and would be determined through site-specific interdisciplinary planning, monitoring, and environmental review. For example, it may be desirable in some cases to use grazing to control weedy or invasive species immediately following a vegetation treatment.

Selling of grass seed, hay, or other vegetative products may be authorized. Hay or seed cutting may be used as a land treatment to improve production of crested wheatgrass provided it is not in conflict with wildlife or wildlife habitat values.

Range improvements would be constructed to manage use of vegetation to support multiple use resource management.

In the Prairie Potholes area, one water source per section would be the guideline for water development.

Alternate water developments, springs, wells, pipelines, etc. would be considered before constructing reservoirs greater than 5 acre feet in highly erodible soils with high siltation rates which shorten reservoir life. An interdisciplinary team would review the placement if water sources are on soils that historically have not been grazed. Changes in grazing season or AUM reductions would be considered as alternatives to implementing grazing methods that would require water developments on these soils.

The BLM would use land treatments to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives.

Rangeland health monitoring and assessments would be conducted within current staffing capabilities, utilizing a priority allotment basis. Rangeland health monitoring plans would be developed and implemented at the field office level.

Increased production resulting from land treatments would be allocated toward accomplishing multiple use objectives. Additional forage resulting from land treatments could be temporarily allocated 75% to watershed and wildlife, and 25% to livestock. Conversely, where there is substantial contribution (at least 50% of total cost as direct or in-kind contribution) by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be temporarily allocated to livestock.

Existing crested wheatgrass seedings would be managed where feasible as spring use pastures to defer native rangeland grazing. Crested wheatgrass seedings would be maintained for maximum livestock forage production with up to 70% of the production allocated to livestock when soils are stabilized to a satisfactory condition. Mechanical treatments and fertilization are management practices which renovate old crested wheatgrass stands to benefit associated native rangeland. Additional crested wheatgrass seedings may be used to consolidate existing scattered stands of crested wheatgrass into manageable units. Where native restoration of old crested wheatgrass seedings is considered, farming and herbicide use could be authorized for up to three years in order to help destroy the old crested wheatgrass seed bank and improve the success of the native seeding.

The initiating party would be required to reclaim surface disturbances greater than one-tenth acre. Range improvement pits and reservoirs would be excluded until abandonment.

All surface disturbances would be reseeded/revegetated with native plant species common to the site's natural plant community. Site-specific environmental analysis may warrant the use, on a case-by-case basis, of introduced species where difficult site stabilization or wildlife concerns prevail.

The best available vegetation treatment would be considered for managing cheatgrass and annual bromes, including but not limited to early spring grazing, mid-summer prescribed fire, and herbicide use.

## **Alternative E (Preferred Alternative)**

Site-specific sage-grouse habitat and management objectives have been developed for BLM land within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA (Appendix M). These objectives would be incorporated into the respective allotment management plans (AMPs) or livestock grazing permits as appropriate.

Conifers encroaching into sagebrush habitats would be removed. Treatments would be prioritized closest to occupied sage-grouse habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2. Use of site-specific analysis and principles like those included in the FIAT report (Chambers, et al. 2014) and other ongoing modeling efforts to address conifer encroachment would help refine the location for specific priority areas to be treated.

Rest periods from livestock grazing of less than two growing seasons in vegetation treatment areas may be desirable in some circumstances, and would be determined through site-specific interdisciplinary planning, monitoring, and environmental review. For example, it may be desirable to use grazing to control weedy or invasive species immediately following a vegetation treatment.

Selling of grass seed, hay, or other vegetative products may be authorized. Hay or seed cutting may be used as a land treatment to improve production of crested wheatgrass provided it is not in conflict with wildlife or wildlife habitat values.

Range improvements would be constructed to manage use of vegetation to support multiple use resource management.

Water developments would be installed and/or maintained to facilitate control of livestock use of vegetation, support other uses, and protect resource values. In order to minimize surface disturbance, have reliable water of better quality and not alter normal surface flow of water, alternative water developments would be emphasized before constructing new pits and reservoirs. The BLM would manage water developments within Greater Sage-Grouse habitat to reduce the spread of West Nile virus (Appendix M).

The BLM would use land treatments to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives. Within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA, treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed as well as treatments that benefit other resources and do not adversely affect sage-grouse or their habitat.

Rangeland health monitoring and assessments would be conducted within current staffing capabilities. The allotments within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA would be high priority for reassessment of land health standards and processing grazing permits as detailed in Appendix M. Rangeland health monitoring plans would be developed and implemented at the field office level.

Increased production resulting from land treatments would be allocated toward accomplishing multiple use objectives. Additional forage resulting from land treatments could be temporarily allocated 75% to watershed and wildlife, and 25% to livestock. Conversely, where there is substantial contribution (at least 50% of the total cost as direct or in-kind contribution) by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be temporarily allocated to livestock.

Existing crested wheatgrass seedings would be managed where feasible as spring use pastures to defer native rangeland grazing. Crested wheatgrass seedings would be maintained for maximum livestock forage production with up to 70% of the production allocated to livestock when soils are stabilized to a satisfactory condition. Mechanical treatments and fertilization are management practices which renovate old crested wheatgrass stands to benefit associated native rangeland. Additional crested wheatgrass seedings may be used to consolidate existing scattered stands of crested wheatgrass into manageable units. Where native restoration of old crested wheatgrass seedings is considered, farming and herbicide use could be authorized for up to three years in order to help destroy the old crested wheatgrass seed bank and improve the success of the native seeding.

The initiating party would be required to reclaim surface disturbances greater than one-tenth acre if necessary to protect other resources. Range improvement pits and reservoirs would be excluded until abandonment.

All surface disturbances would be reseeded/revegetated with native plant species common to the site's natural plant community. Site-specific environmental analysis may warrant the use, on a case-by-case basis, of introduced species where difficult site stabilization or wildlife concerns prevail.

Native species needed for reclamation and restoration activities, including the restoration of sage-grouse habitats in the planning area, would be identified and prioritized. Seed that is not available commercially should be collected following the procedures outlined in the Seeds of Success Protocol from local sources. Locally collected seed should be used to create sources of native plant materials with willing farmers or through work with NRCS Plant Materials Programs or through both. Cleaning and storage of seed must be addressed so that viability is maintained.

The best available vegetation treatment would be considered for managing cheatgrass and annual bromes, including but not limited to early spring grazing, mid-summer prescribed fire, and herbicide use.

## Vegetation – Riparian and Wetland

### Goal

*Manage activities to ensure healthy and proper functioning condition of wetlands and riparian areas within site or ecological capability.*

### Objectives

Ensure consistency with achieving or maintaining the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota (BLM 1997a) and, as a minimum, all riparian and wetland areas with natural capability would be in proper functioning condition (PFC).

Develop site-specific objectives and management strategies for riparian and wetland areas during the development and implementation of proposed actions and activity plans.

Maintain, restore, or improve riparian and wetland areas to achieve a healthy and productive ecological condition that provides benefits and values within site capability.

### Decisions Common to All Alternatives

Wetland and riparian areas are unique and among the most productive and important ecosystems. Although comprising only a small percentage of the BLM lands, they affect most other resources and values. Given the high value of these areas for a variety of resources, all aspects of riparian and wetland area inventory, monitoring, and management would involve an interdisciplinary effort.

Extensive inventories have been conducted across the planning area to locate, quantify, and broadly classify wetland and riparian areas. The proper functioning condition (PFC) methodology is utilized by the BLM to assess the physical functioning of riparian and wetland areas. The term PFC is used to describe both the assessment process and a defined, on-the-ground condition of a riparian or wetland area. The PFC assessment provides a consistent approach for assessing how well the physical processes are functioning in wetland and riparian areas through consideration of hydrology, vegetation, and soil/landform attributes. An implementation plan would be developed that contains an assessment and monitoring plan for riparian and wetland areas. User guides to assessing proper functioning condition and the supporting science for lotic areas (TR 1737-15) and lentic areas (TR 1737-16) would be adhered to by the BLM's interdisciplinary identification and assessment teams.

The BLM would enhance or restore riparian composition and structure beyond PFC in riparian areas where and when appropriate for other resource values. This may include, but is not limited to, establishing riparian pastures, stream corridor/ shoreline fencing, specialized grazing methods, winter grazing use, a different species of livestock, and rehabilitation protective measures.

The allowance for improvements of riparian/wetland areas has the potential to either benefit or degrade the resource, and improving the functionality of one aspect (i.e., hydro-period) could convert the riparian/wetland type. The BLM would conserve riparian/wetland habitat by intensifying cooperative efforts among federal, state and private interests and would minimize the destruction, loss or degradation of wetlands.

Wetlands would be protected in accordance with the provisions of Executive Order (EO) No. 11990, Protection of Wetlands. Under the provisions of this EO, the BLM must minimize the destruction, loss or degradation of wetlands when acquiring, managing and disposing of federal lands and facilities.

Riparian protection would be provided by the Montana Streamside Management Zone Law (77-5-301 through 77-5-307 MCA). Streamside Management Zones (SMZs) provide regulation for the protection of water quality. The SMZ encompasses a strip at least 50 feet wide on each side of a stream, lake, or other body of water, measured from the ordinary high water mark, and extends beyond the high water mark to include wetlands and areas that provide additional

protection in zones with steep slopes or erodible soils. The SMZ provides the minimum regulatory standards for forest practices in riparian areas.

Ephemeral drainages and some mapped intermittent streams would not be covered by the SMZs under the definitions in the state regulations. These areas, however, would be covered by management stipulations commonly known as BMPs (Appendix C).

Prescribed fire could be used as a management agent to support healthy functioning riparian conditions.

### **Alternative A (Current Management)**

Riparian and wetland areas would be avoidance areas in the western (West HiLine RMP) portion of the planning area.

Range improvements (primarily reservoirs, fences and land treatments) would be built to support AMPs.

Saline seeps would be evaluated on an individual basis to assess the cause (i.e., natural or anthropogenic), understand the purview, and determine how the seeps should be managed. Exclosure of the seep, no action, or complete reclamation of the seep would ensue, depending on the outcome of the evaluation.

All existing and future riparian exclosures would be monitored and evaluated for future removal. At that time, AMPs would be revised to provide management prescriptions to maintain the riparian community condition.

### **Alternatives B and E (Preferred Alternative)**

Riparian areas with unique values (e.g., where water quality habitat for special status species is an issue) would be treated as avoidance areas for rights-of-way (installation of infrastructure that requires surface disturbance and/or permanent surface occupancy).

Grazing techniques and practices detailed in Appendix M would be implemented to reduce hot season (summer) grazing on riparian and meadow complexes within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas. Alternative water facilities would be installed to relieve grazing impacts on riparian areas inside of priority sage-grouse habitat.

Saline seeps that occur as a result of surface-disturbing activities would be prioritized and reclaimed. Surface-disturbing activities with the potential for producing seep areas would be designed with mitigation measures to minimize development of saline seeps.

Riparian exclosures would be maintained and monitored to compare differences between areas grazed and ungrazed by livestock.

No pits would be placed in natural wetlands and in some cases pits may be filled in to improve wildlife habitat in natural wetlands (Appendix M). Wetlands that have been drained for water consolidation may be restored by plugging drainage ditches, and alternative water developments may be developed in these areas.

### **Alternatives C and D**

Alternative water facilities would be installed to relieve grazing impacts on riparian areas.

Saline seeps that occur as a result of surface-disturbing activities would be prioritized and reclaimed. Surface-disturbing activities with the potential for producing seep areas would be designed with mitigation measures to minimize development of saline seeps.

Riparian exclosures would be maintained, monitored, evaluated and/or modified for their intended purpose. If they no longer serve a resource management purpose they would be removed.

## Vegetation – Special Status Plants

### Goal

*Ensure that in meeting the BLM's multiple use-sustained yield mandate, special status plants and plant communities are managed, conserved, and/or restored for future generations.*

### Objectives

Promote the conservation and recovery of BLM special status plant species and their habitats.

### Decisions Common to All Alternatives

The BLM would manage for the conservation of BLM special status plants and their associated habitats and to ensure that actions authorized, funded, or carried out do not contribute to the need to list any species as threatened or endangered. Site-specific prescriptions may include avoidance of special status plant habitat for ROWs, seasonal timing restrictions for grazing (e.g., limited to no grazing during flowering to seed set for a particular species), no salt or water placement within 1/4 mile of a known special status plant species population, seed collection or transplanting of special status plant species for mitigation.

The BLM would inventory lands to determine which BLM special status plant species occur on public lands, the condition of the plant populations and their habitats, and how discretionary BLM actions affect those plant species and their habitats.

The BLM would cooperatively participate in recovery plans, management plans and conservation strategies for special status species plants and would work with federal, tribal, and state agencies as well as private landowners to improve habitat for special status plants.

Through activity plans for other resources (e.g., watershed plans, fire management plans, allotment management plans, etc.) the BLM would design site-specific management prescriptions and projects to benefit individual species habitats and communities. Special status plants would be monitored to assess their condition and trend.

## Visual Resources

### Goal

*Manage scenic values in accordance with the objectives established for visual resource management classes.*

### Objectives

The visual resource management (VRM) classes are based on a process that considers scenic quality, sensitivity to changes in the landscape and distance zone. The four VRM classes are numbered I to IV; the lower the number, the more sensitive and scenic the area. Each class has a management objective which prescribes the level of acceptable change in the landscape. The objectives are guidelines to be used with the visual resource contrast rating system during new project-level planning. The management objectives would not preclude the maintenance of existing structures and range improvements.

The VRM class objectives are defined as follows:

**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. The level of change to the characteristic landscape should be very low and must not attract attention.

**Class II:** The objective of this class 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 predominant natural features of the characteristic landscape.

**Class III:** 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.

**Class IV:** The objective of this class 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 of form, line, color, and texture in the natural characteristic landscape.

The degree to which a management activity affects the visual quality depends on the visual contrast created between the project and the existing landscape. The contrast is measured by comparing elements of form, line, color, and texture to describe the visual contrast created by a project. The visual resource contrast rating system determines whether proposed activities meet VRM objectives.

## Decisions Common to All Alternatives

Visual resource design techniques and BMPs would be used to minimize short and long-term visual impacts. Contrast ratings would be completed for all proposed projects in Class I and II areas, and for proposed projects in Class III and IV areas that are high-impact projects or located in highly sensitive areas.

The visual resource contrast rating system would be used during project level planning to determine whether or not proposed activities would meet VRM objectives. The contrast rating system provides a systematic means to evaluate proposed projects and determine whether these projects conform with the approved VRM objectives. The degree to which a management activity affects the visual quality depends on the visual contrast created between the project and the existing landscape. The contrast is measured by comparing elements of form, line, color, and texture to describe the visual contrast created by a project. Mitigation measures would then be identified to reduce visual contrasts, and rehabilitation plans to address landscape modifications would be prepared on a case-by-case basis. The analysis can then be used as a guide for resolving visual impacts. Once every attempt is made to reduce visual impacts, the project would be re-evaluated for conformance to the VRM Class objectives using the Contrast Rating process. If the project remains out of conformance, the authorized officer may deny the project proposal, attach additional mitigations to bring the proposal into compliance with the existing VRM Class, or pursue a land use plan amendment in order to adjust the VRM Class and objectives for the area.

In VRM Class I, II, III and IV areas the BLM may prohibit surface-disturbing activities if such activities are not designed to meet the intent of the VRM Class objectives.

## Alternative A (Current Management)

Under current management over 80% of the planning area would continue to be managed as a VRM Class IV area (Table 2.24 and Map 2.16, which is located at the end of Chapter 2).

The Bitter Creek and Burnt Lodge WSAs would be managed as a VRM Class I areas. The following areas would be managed as VRM Class II:

- an area south of the Willow Creek Road in Valley County and north of the Charles M. Russell National Wildlife Refuge;
- areas along the Milk River;

- Bears Paw area west of the Little Rocky Mountains and south of Highway 2;
- Frenchman Breaks area in north Phillips County;
- Little Rocky Mountains including the Azure Cave ACEC; and
- portions of the Sweet Grass Hills ACEC.

In all areas, surface-disturbing activities, semi-permanent and permanent facilities may require special designs (location, painting and camouflage) to blend with the natural surroundings and meet the intent of the VRM Class objectives.

<i>VRM Class</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
I	74,506	90,032	74,506	74,506	74,506
II	342,828	977,396	914,197	127,439	841,087
III	58,213	498,298	521,322	584,113	521,868
IV	1,961,928	871,748	927,449	1,651,416	1,000,013

### Alternative B

The Burnt Lodge and Bitter Creek WSAs and adjacent lands, along with the Sweet Grass Hills and Kevin Rim ACECs and adjacent lands, would be managed as VRM Class I areas (90,032 acres) (Table 2.24 and Map W.8, which is available at <http://blm.gov/8qkd>). The following areas would be managed as VRM Class II (977,396 acres):

- an area south of the Dry Fork Road in Phillips County and the area south of the Willow Creek Road in Valley County and north of the Charles M. Russell National Wildlife Refuge;
- areas just north of the Upper Missouri River Breaks National Monument;
- Nez Perce and Lewis and Clark National Historic Trail corridors;
- Bears Paw area west of the Little Rocky Mountains and south of Highway 2;
- Frenchman Breaks area in north Phillips County;
- Little Rocky Mountains including the Azure Cave and Zortman/Landusky Mine Reclamation ACECs;
- Marias River area; Mountain Plover ACEC and surrounding area; and
- areas managed for wilderness characteristics.

The remaining BLM lands would be managed as VRM Class III (498,298 acres) and VRM Class IV (871,748 acres).

### Alternative C

The Burnt Lodge and Bitter Creek WSAs would be managed as VRM Class I areas (74,506 acres) (Table 2.24 and Map W.8, which is available at <http://blm.gov/8qkd>). The following areas would be managed as VRM Class II (914,197 acres):

- an area south of the Dry Fork Road in Phillips County and the area south of the Willow Creek Road in Valley County and north of the Charles M. Russell National Wildlife Refuge;
- areas just north of the Upper Missouri River Breaks National Monument;
- Nez Perce and Lewis and Clark National Historic Trail corridors;
- Frenchman Breaks area in north Phillips County;
- Marias River area;
- Mountain Plover ACEC and surrounding area;
- Woody Island, Sweet Grass Hills, and Kevin Rim areas; and
- areas managed for wilderness characteristics.

The remaining BLM lands would be managed as VRM Class III (521,322 acres) and VRM Class IV (927,449 acres).

In VRM Class II areas the BLM would reduce the visual contrast on BLM land in the existing landscape by utilizing proper site selection, reducing soil and vegetative disturbance, choice of color, and over time, returning the disturbed areas to a seamless, natural landscape.

## Alternative D

The Burnt Lodge and Bitter Creek WSAs would be managed as VRM Class I areas (74,506 acres) (Table 2.24 and Map W.8, which is available at <http://blm.gov/8qkd>). The following areas would be managed as VRM Class II (127,439 acres):

- Frenchman Breaks area in north Phillips County; and
- Woody Island and Little Rocky Mountains ACECs.

The remaining BLM lands would be managed as VRM Class III (584,113 acres) and VRM Class IV (1,651,416 acres).

In all areas, surface-disturbing activities, semi-permanent and permanent facilities may require special designs (location, painting and camouflage) to blend with the natural surroundings and meet the intent of the VRM Class objectives.

## Alternative E (Preferred Alternative)

The Burnt Lodge and Bitter Creek WSAs would be managed as VRM Class I areas (74,506 acres) (Table 2.24 and Map 2.16). The following areas would be managed as VRM Class II (841,087 acres):

- an area south of the Dry Fork Road in Phillips County and the area south of the Willow Creek Road in Valley County and north of the Charles M. Russell National Wildlife Refuge;
- areas just north of the Upper Missouri River Breaks National Monument;
- Nez Perce and Lewis and Clark National Historic Trail corridors;
- Bitter Creek area;
- Frenchman area including the Frenchman Breaks ACEC;
- Kevin Rim area;
- Marias River area;
- Sweet Grass Hills area;
- Woody Island area; and
- areas managed for wilderness characteristics.

The remaining BLM lands would be managed as VRM Class III (521,868 acres) and VRM Class IV (1,000,013 acres).

In VRM Class II areas the BLM would reduce the visual contrast on BLM land in the existing landscape by utilizing proper site selection, reducing soil and vegetative disturbance, choice of color, and over time, returning the disturbed areas to a seamless, natural landscape.

## Water Resources

### Goal

*Maintain, improve or restore the chemical, physical, and biological integrity of waters to protect beneficial uses.*

## Objectives

Ensure water quality and availability for authorized beneficial uses and proper watershed, wetland, riparian, and stream channel functions.

Prevent, minimize, and/or remediate contributions of non-point source pollution from BLM land to all receiving waters, including groundwater resources.

## Decisions Common to All Alternatives

Surface and ground water quality would be maintained to state and federal water quality standards, including Standard for Rangeland Health #3 which requires that water quality meets Montana state standards. BMPs (Appendix C) would be used to prevent nonpoint source water pollution, and mitigation measures would be applied on a case-by-case basis. Permits pertaining to projects affecting water quality, wetlands, or streams would be obtained, and outside applicants would be required to provide copies of permits (e.g., 310, 404) prior to BLM authorization.

Projects would be reviewed on a case-by-case basis to minimize impacts to water quality. All proposed reservoirs would be designed with a minimum 15-year life expectancy, and the BLM would evaluate other types of improvements to determine the need for alternate site water facilities (e.g., wells, springs). The BLM would continue to comply with Montana water laws, obtain water rights for all projects, and participate in the water adjudication process.

The State of Montana identifies impaired and non-impaired waters in its 303(d)/305(b) Integrated Report. This report lists all segments known to exceed state water quality standards, lists segments that do not fully support beneficial uses, and identifies the probable causes and sources of any water quality impairment. The State uses all available scientifically credible data including indicators such as dissolved oxygen concentration, pH, flow alterations, turbidity, temperature, metals, habitat alterations, fecal coliform, sulfates, nutrients, sodium, and sediment to make beneficial use determinations.

Through an existing memorandum of understanding with the Montana DEQ, the BLM would participate in the development, implementation, and monitoring of water quality restoration plans (WQRPs) and total maximum daily load (TMDL) in watershed planning areas in which the BLM is a significant land manager or water user. The BLM would continue to produce, and provide to the DEQ, biennial reports that describe the successes achieved in protecting and improving water quality in Montana.

The BLM would use reasonable land, soil, and water conservation practices to prevent harm to public health, recreation, safety, welfare, livestock, birds, fish, or other wildlife prior to the adoption of WQRPs and TMDLs. Human health would be protected by minimizing the potential contamination of public water systems. Source water is untreated water from streams, rivers, lakes, or aquifers used to supply public water systems. The BLM would ensure that stipulations are in place to protect the State-designated Source Water Protection Areas that protect public water systems from potential contamination.

The BLM would manage federal lands with reasonable land, soil, and water conservation practices in order to protect waterbodies that currently meet state water quality standards and improve water quality where beneficial uses are not fully supported. The BLM manages nonpoint source pollution by controlling the cause and source of pollutants through the use of pollution control measures such as BMPs and soil and water conservation practices. These measures are discussed in detail in the Montana Nonpoint Source Management Plan (MDEQ 2012). The BLM is responsible for monitoring progress and success once pollution control measures are implemented.

Disposal of produced water from any oil and gas fields would be in accordance with Onshore Order No. 7 and EPA guidelines. Produced water cannot be discharged to live surface water in Montana without treatment in conjunction with a Montana Pollution Discharge Elimination System (MPDES) permit. Effluent limits set by the DEQ for direct

### Total Maximum Daily Load (TMDL)

Montana's Clean Water Act provides guidance for surface water classification, water quality standards, and Total Maximum Daily Load (TMDL) development and implementation where water quality is impaired or threatened.

TMDL is the maximum pollutant load a specific water body can assimilate and still meet water quality standards. The goal of Montana's TMDL program is to produce Water Quality Restoration Plans that meet the U.S. Environmental Protection Agency's (EPA) TMDL criteria.

The State of Montana's Nonpoint Source Management Plan indicates that Water Quality Restoration Plans (WQRP) with TMDL components should be used as guidance for nonpoint source restoration.

discharge ensure no degradation would occur. Discharge to impoundments within an ephemeral drainage would also require an MPDES permit and a non-degradation waiver for groundwater.

### **Alternative A (Current Management)**

The BLM would maintain some of the Willow Creek Basin watershed control structures in south Valley County for wildlife, riparian and access values. Other structures would be abandoned. Contour furrowing and grazing methods to improve ground cover and control erosion, runoff and sedimentation would be applied in the Willow Creek Basin and in other locations with similar soils.

New reservoirs would be evaluated on a case-by-case basis through the environmental review process.

### **Alternative B**

Watershed control structures would be maintained on a case-by-case basis to meet Standards for Rangeland Health.

New reservoirs would not be built where water would inundate highly productive riparian areas and areas of important wildlife habitat, such as buffaloberry thickets.

Water supply sources (e.g., wells, springs, reservoirs, and stream and lake access) for BLM-authorized actions (e.g., grazing, wildlife, recreation, etc.) would comply with Montana water laws.

The BLM would encourage oil and gas operators to develop and implement methods that treat produced water and enable its beneficial use.

### **Alternative C**

Watershed control structures would be maintained on a case-by-case basis to meet Standards for Rangeland Health.

Water supply sources (e.g., wells, springs, reservoirs, and stream and lake access) for BLM-authorized actions (e.g., grazing, wildlife, recreation, etc.) would comply with Montana water laws.

The BLM would avoid the discharge of produced water from point sources to BLM land, including stream channels and uplands, as a means of disposal. Any allowed discharge would be in compliance with DEQ requirements.

### **Alternative D**

Watershed control structures would be maintained on a case-by-case basis to meet Standards for Rangeland Health.

Water supply sources (e.g., wells, springs, reservoirs, and stream and lake access) for BLM-authorized actions (e.g., grazing, wildlife, recreation, etc.) would comply with Montana water laws.

### **Alternative E (Preferred Alternative)**

Watershed control structures would be maintained on a case-by-case basis to meet Standards for Rangeland Health or public safety concerns.

New reservoirs would be considered on a site-specific basis through activity planning and would consider livestock grazing practices, important wildlife habitat, alternate water sources, and the opportunity to replace or repair existing reservoirs.

Water supply sources (e.g., wells, springs, reservoirs, and stream and lake access) for BLM-authorized actions (e.g., grazing, wildlife, recreation, etc.) would comply with Montana water laws.

The BLM would avoid the discharge of produced water from point sources to BLM land, including stream channels and uplands, as a means of disposal. Any allowed discharge would be in compliance with DEQ requirements.

## Wilderness Characteristics

*Goal*

*Where practical, manage lands with wilderness characteristics for naturalness, solitude, and outstanding opportunities for primitive and unconfined recreation.*

### Objective

Manage specific areas for their wilderness characteristics while providing for multiple uses throughout the planning area.

### Alternative A (Current Management)

The BLM would continue to manage other multiple uses as a priority over protecting wilderness characteristics.

### Alternative B

All areas that were determined to possess wilderness characteristics during the 2011 inventory update would be managed to protect those characteristics as a priority over other multiple uses (26 areas and 386,462 acres) (Table 2.25 and Map W.9, which is available at <http://blm.gov/8qkd>). This alternative would not include any areas with wilderness characteristics found after the 2011 inventory update.

<b>Table 2.25 Proposed Management of Wilderness Characteristics in the HiLine District – Alternative Comparison</b>				
<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Areas managed to protect wilderness characteristics as a priority over other resource values and multiple uses</b>				
N/A	26 areas	12 areas	0	3 areas
N/A	386,462 acres	228,419 acres	0	16,393 acres
<b>Acres managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics</b>				
N/A	0	75,327 acres	0	290,865 acres
<b>Acres managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics</b>				
N/A	0	82,706 acres	386,462 acres	92,190 acres

The areas would be closed to oil and gas leasing (373,445 acres). The existing oil and gas leases (47,135 acres) would continue according to the respective stipulations until they expire. As these leases expire, the areas would no longer be available for oil and gas leasing.

The areas would be identified for retention and would not be available for sale or exchange (Category 1 lands under Land Ownership Adjustment).

The areas would be avoidance areas for rights-of-way and exclusion areas for wind energy rights-of-way. In avoidance areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the areas.

Any changes to livestock grazing would be consistent with achieving or maintaining the Standards for Rangeland Health. All agreements and provisions for maintenance and upkeep of existing range improvements would continue to remain in effect including access to and maintenance of range improvements. New range improvements and land treatments could be allowed provided they meet with the objective of enhancing or restoring those wilderness characteristics being managed for and meet the intent of the visual quality objectives of the VRM class.

These areas would not be available for wind energy rights-of-way. As a result, these areas would be closed to commercial wind energy development, including wind energy site monitoring and testing.

The Island Mountain Range (4,118 acres) would be closed to OHV use and would be a low priority for travel management planning. All the other areas would be limited for OHV use. Five areas (90,997 acres) within the Prairie Grassland group would be a high priority for travel management planning. The other areas (291,348 acres) would be a moderate priority for travel management planning. In these areas travel would be limited to existing roads, primitive roads and trails until subsequent travel management plans designate a motorized and nonmotorized transportation network after completion of this RMP. High priority areas would normally have travel management planning completed within five years of the signing of the Record of Decision, as funding and staffing allow.

The Island Mountain Range (4,118 acres) would be managed as semi-primitive nonmotorized under the recreation opportunity spectrum (ROS): some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment and motorized use is prohibited. The ROS class for the other areas (382,344 acres) would be semi-primitive motorized: some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment and motorized use is permitted.

The Island Mountain Range (4,118 acres) would be managed as VRM Class I and the other areas would be managed as VRM Class II (382,344 acres). In VRM Class I and II areas, the BLM may prohibit surface-disturbing activities if such activities are not designed to meet the intent of the visual quality objectives of the VRM class. In VRM Class I areas the objective is to preserve the existing character of the landscape. In VRM Class II areas the objective is to retain the existing character of the landscape.

## Alternative C

The BLM would manage 12 areas (228,419 acres) to protect wilderness characteristics as a priority over other multiple uses (Table 2.25 and Map W.9, which is available at <http://blm.gov/8qkd>).

Eight of the areas would be closed to oil and gas leasing (143,795 acres) and the other areas (78,281 acres) would be open to leasing with a no surface occupancy (NSO) stipulation. The existing oil and gas leases (766 acres) would continue according to the respective stipulations until they expire. As these leases expire, they would no longer be available for oil and gas leasing.

The areas would be identified for retention and would not be available for sale or exchange (Category 1 lands under Land Ownership Adjustment).

Three of the areas (51,055 acres) would be exclusion areas for all rights-of-way. Exclusion areas are not available for location of rights-of-way under any condition. The other areas (177,340 acres) would be avoidance areas for rights-of-way. In avoidance areas, efforts would be made to reroute a proposal. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures may be required to protect sensitive resource values. Rights-of-way may also be allowed if they support or promote other management objectives for the areas.

Any changes to livestock grazing would be consistent with achieving or maintaining the Standards for Rangeland Health. All agreements and provisions for maintenance and upkeep of existing range improvements would continue to remain in effect including access to and maintenance of range improvements. New range improvements and land treatments could be allowed provided they meet with the objective of enhancing or restoring those wilderness characteristics being managed for and meet the intent of the visual quality objectives of the VRM class.

The Island Mountain Range (4,118 acres) would be closed to OHV use and would be a low priority for travel management planning. All the other areas would be limited for OHV use. Four areas (92,599 acres) within the Prairie

Grassland group would be a high priority for travel management planning. The other areas (142,568 acres) would be a moderate priority for travel management planning. In these areas travel would be limited to existing roads, primitive roads and trails until subsequent travel management plans designate a motorized and nonmotorized transportation network after completion of this RMP. High priority areas would normally have travel management planning completed within five years of the signing of the Record of Decision, as funding and staffing allow.

Seven of the areas (143,654 acres) would be managed as semi-primitive nonmotorized under the recreation opportunity spectrum (ROS): some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment and motorized use is prohibited. The ROS class for the other areas (95,631 acres) would be semi-primitive motorized: some opportunity for isolation from man-made sights, sounds, and management controls in a predominantly unmodified environment and motorized use is permitted.

These areas would be exclusion areas for wind energy rights-of-way. As a result, these areas would be closed to commercial wind energy development, including wind energy site monitoring and testing.

All of the areas would be managed as VRM Class II. In VRM Class II areas, the BLM may prohibit surface-disturbing activities if such activities are not designed to meet the intent of the visual quality objectives of the VRM class. The objective is to retain the existing character of the landscape.

### Alternative D

The BLM would manage other multiple uses as a priority over protecting wilderness characteristics.

### Alternative E (Preferred Alternative)

The BLM would manage 3 areas (Areas 49B, 52L and 53) in the Eastern Breaks and Badlands (16,393 acres) to protect wilderness characteristics as a priority over other multiple uses (Table 2.25, Table 2.26 and Figure 2.6).

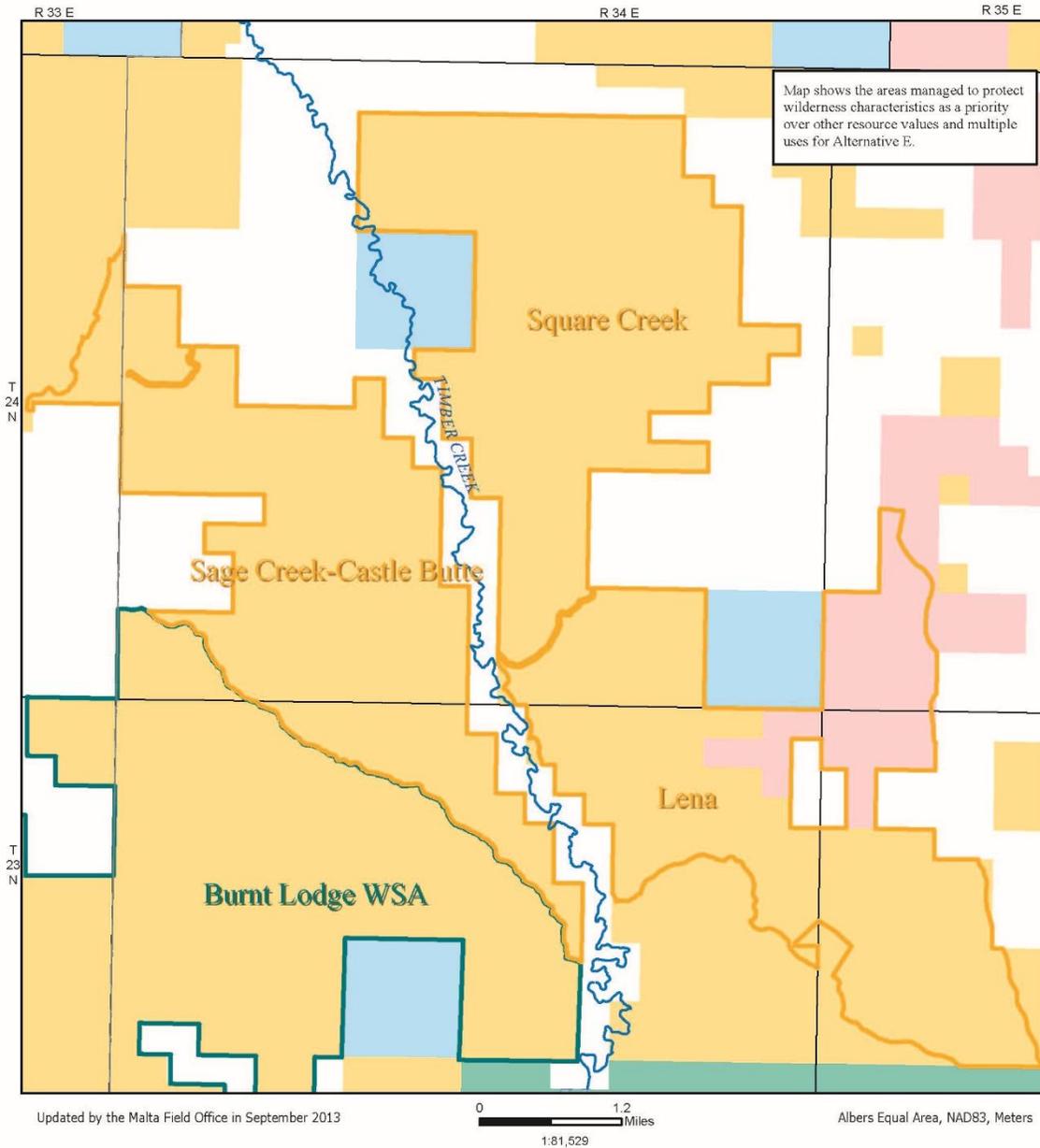
<b>Table 2.26</b> <b>Areas Managed for Wilderness Characteristics</b> <b>Alternative E (Preferred Alternative)</b>		
<i>Inventory No.</i>	<i>Area</i>	<i>Acres</i>
49B	Sage Creek - Castle Butte	5,144
52L	Lena	5,679
53	Square Creek	5,570
	Total	16,393

Management proposed under the Preferred Alternative for these three areas includes:

- *Fluid Minerals:* NSO with no Waivers, Exceptions, or Modifications (WEMs).
- *Land Ownership Adjustment:* Category 2 -Retention/Limited Disposal (exchange only – no sale).
- *Rights-of-Way:* Avoidance Areas.
- *OHV Area Designations:* Limited.
- *Renewable Energy – Wind:* Exclusion.
- *Recreation Opportunity Spectrum:* Semi-Primitive Motorized.
- *Travel and Transportation Management:* Closed to development of new roads, primitive roads, and trails.
- *Visual Resource Management:* VRM Class II.

Any changes to livestock grazing would be consistent with achieving or maintaining the Standards for Rangeland Health. All agreements and provisions for maintenance and upkeep of existing range improvements would continue to remain in effect including access to and maintenance of range improvements. New range improvements and land treatments could be allowed provided they meet with the objective of enhancing or restoring those wilderness characteristics being managed for and meet the intent of the visual quality objectives of the VRM class.

**Figure 2.6**  
**Areas Managed for Wilderness Characteristics**  
**Alternative E (Preferred Alternative)**



U.S. DEPARTMENT OF THE INTERIOR  
 Bureau of Land Management  
 HiLine District

**Areas with Wilderness Characteristics**  
**Alternative E (Preferred)**

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- Area with Wilderness Characteristics
- Wilderness Study Area
- Bureau of Land Management (BLM)
- Bankhead-Jones Land Use Lands
- State
- Private
- Water
- Vehicle Way
- Road
- County Route

Approximate location within the planning area

The areas would be limited for OHV use and a high priority for travel management planning. In these areas travel would be limited to existing roads, primitive roads and trails until subsequent travel management plans designate a motorized and nonmotorized transportation network after completion of this RMP. A right-of-way may be allowed if no reasonable alternative is found; however, special mitigation measures would be required to minimize impacts to wilderness characteristics.

Of the remaining lands with wilderness characteristics, 290,865 acres would be managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics. Most of these areas fall within PHMAs, SFAs, Frenchman Breaks ACEC, and Sweet Grass Hills ACEC. Management proposed for these areas is complementary to maintaining wilderness characteristics in these areas. Management proposed under this alternative for these areas includes:

- *Fluid Minerals*: Closed within the Sweet Grass Hills TCP; NSO with no WEMs within the Frenchman Breaks ACEC and SFAs; and NSO with limited exceptions and no waivers or modifications within the Greater Sage-Grouse PHMAs.
- *Land Ownership Adjustment*: Category 1 – Retention within the Sweet Grass Hills ACEC; Category 2 – Retention/Limited Disposal within all other areas.
- *Rights-of-Way*: Avoidance Areas.
- *OHV Area Designations*: Closed within the Sweet Grass Hills ACEC; Limited within all other geographic areas.
- *Renewable Energy – Wind*: Exclusion.
- *Recreation Opportunity Spectrum*: Semi-Primitive Nonmotorized within the Sweet Grass Hills ACEC; Semi-Primitive Motorized within the remainder of geographic area.
- *Visual Resource Management*: VRM Class I within the Sweet Grass Hills ACEC; VRM Class II within the remainder of the geographic area.

The other 92,190 acres would be managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics (Table 2.25). In coordination with the interdisciplinary team and the BLM HiLine District Manager and Field Managers, it was determined that these areas either cannot be effectively managed to protect wilderness characteristics or the management or use of other resources takes precedence over wilderness characteristics. However, BLM-authorized activities associated with all resources and all resource use programs in these areas would be subject to mitigation and minimization guidelines and BMPs in Appendix C.



Sage Creek Area, Valley County

Photo by Kathy Tribby

## Wildlife

### Goals

*Ensure habitat for native wildlife is of sufficient quantity and quality to enhance biological diversity and sustain ecological, economic and social values.*

*Identify, conserve, enhance and monitor rare, vulnerable, and representative habitats, communities, and ecosystems to ensure self-sustaining persistence of special status species.*

*Ensure that proposed land uses initiated or authorized by the BLM minimize damage to wildlife habitat and populations of special status species.*

*Promote public awareness, appreciation, and understanding of wildlife conservation, management, and ecology.*

*Maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in cooperation with other conservation partners*

## Objectives

The necessary habitat, biological processes, and disturbance regimes would be present to maintain, enhance, or restore priority wildlife habitat and populations of special status species. Land use would maintain habitat quality and large intact blocks of habitat. Habitat quality and land use would allow wildlife species movements between large blocks of habitat and between seasonal habitats on a localized and landscape scale.

The BLM would maintain and enhance habitat for wildlife species. The emphasis for habitat maintenance and restoration would be placed on present and potential habitat for priority species such as sensitive, threatened and/or endangered species. The BLM would prioritize wildlife habitat improvement projects such as restoration of sagebrush communities through invasive species removal and native shrub reestablishment. Priority would be given to projects that improve habitat conditions in areas where there is the greatest expectation of an increase in wildlife populations or population viability resulting from the restoration enhancement work.

Use individual species management strategies and/or known habitat associations to design habitat management strategies to promote management of as many species as possible.

Implement habitat improvement projects where necessary to restore wildlife habitat and/or to improve unsatisfactory or declining wildlife habitat.

Manage priority wildlife habitat, special status species habitat, and populations using multi-scale assessments to identify current conditions, risks, and opportunities.

Maintain, enhance, or restore habitat availability and condition for special status species, and minimize habitat loss.

Protect priority Greater Sage-Grouse habitats from anthropogenic disturbances that would reduce distribution or abundance of sage-grouse.

Minimize fragmentation of large intact blocks of important wildlife habitat, particularly habitat areas for Greater Sage-Grouse and grassland birds.

## Decisions Common to All Alternatives

### General Wildlife

The BLM would provide ecological conditions that support wildlife species (Appendix Q) over the long term and promote maintenance and recovery of federally listed species and BLM sensitive species (Appendix Q). The planning area provides for the range of habitat requirements for species by managing for the broad level ecosystem desired conditions. This strategy would involve a two-tiered approach:

- The structure, composition, and disturbance processes of ecosystems that maintain habitat are managed for attainable and sustainable desired conditions that meet a variety of management objectives. The historic range of variability of habitat conditions are used for comparison and guidance in order to manage for habitats that sustain a broad range of wildlife species found in the planning area. Changes in land use within the planning area as well as on adjacent lands often preclude the BLM from attaining these goals on all BLM lands.
- Species with conservation concerns are evaluated in order to determine limiting habitats, population influences, and special habitat needs not provided through ecosystem-level management. Species identified may need additional protection as specified in conservation strategies for individual species or species groups. Incorporating design components found in the desired conditions and guidelines detailed in the RMP, species conservation strategies and recovery plans, or species assessments based on the best available science would maintain or enhance key habitat and habitat effectiveness in order to provide diversity components and maintain wildlife sustainability. Species and management actions identified for this level of management are mostly addressed in the Special Status Species section.

New fences would follow BLM specifications to allow for wildlife passage, except for fences built specifically to keep wildlife out of an area. Fences would also be placed and marked, or modified, to reduce wildlife collisions or entanglements.

Powerlines and substations constructed on BLM land would comply with the most current raptor protection standards (currently Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012)). Existing powerlines that have been identified as having problems with collision or electrocution of wildlife and do not meet APLIC standards would be corrected and modified to prevent future wildlife collision threats or electrocution. Powerlines that are in good working order would be maintained and upgraded as deemed necessary.

Wildlife mortality at water tanks on BLM land would be minimized, primarily through the use of functional wildlife escape ramps. All new tanks would have effective escape ramps built in and existing tanks would have effective escape ramps installed.

Mitigation for migratory birds would be considered during activity level planning because the number of species, variety of habitats, and variation in seasonal movements limit the ability to provide effective mitigation for all species at the resource management planning level.

Management activities would consider current adopted strategies including Montana's Comprehensive Fish and Wildlife Conservation Strategy (MFWP 2005) and currently accepted science. The BLM would continue to implement, review, and update as necessary the Prairie Pothole Waterfowl and Fisheries Habitat Management Plan (HMP) of North Central Montana (BLM 1978), Whitewater Lake Waterfowl Habitat Development Project HMP (BLM 1970a), and Milk River Hills Pronghorn Winter Range HMP (BLM 1970b).

Implementation and consistent and effective monitoring of outcomes for habitat and species would provide the impetus toward the desired conditions. Monitoring would provide necessary data to evaluate RMP management decisions and would help identify needs for changes in management practices. Monitoring to track changing conditions in key areas and for specific species (Appendix M.2) is an important step in accomplishing objectives and achieving desired conditions.

**Mitigation Measures and  
Conservation Actions  
For  
Surface-Disturbing and Disruptive Activities**

Mitigation measures and conservation actions are Best Management Practices (BMPs), operating procedures, or design features that have been developed to avoid, minimize, rectify, reduce, or compensate for potentially significant adverse environmental impacts associated with surface-disturbing or disruptive activities.

For the purposes of applying mitigation measures, surface-disturbing and disruptive activities are defined below.

**Surface-Disturbing Activities:** The physical disturbance or removal of land surface and vegetation. Some examples of surface-disturbing activities include, but are not limited to, construction of roads, well pads, pipelines, powerlines, pits/reservoirs, facilities, recreation sites, and mining. Vegetation renovation treatments that involve soil penetration and/or substantial mechanical damage to plants (plowing, chiseling, chopping, etc.) are also surface-disturbing activities.

**Disruptive Activities:** Those resource uses and activities that are likely to alter the behavior of, displace, or cause excessive stress to wildlife populations occurring at a specific location and/or time. In this context, disruptive activity(ies) refers to those actions that alter behavior or cause the displacement of wildlife such that reproductive success is negatively affected, or the physiological ability to cope with environmental stress is compromised. This term does not apply to the physical disturbance of the land surface, vegetation, or features. Examples of disruptive activities may include fence construction, noise, vehicle traffic, or other human presence regardless of the activity. The term is used in conjunction with protecting wildlife during crucial life stages (e.g., breeding, nesting, birthing, etc.), although it could apply to any resource value.

These definitions are not intended to prohibit all activities or authorized uses. For example, emergency activities (e.g., fire suppression, search and rescue), rangeland monitoring, routine maintenance associated with an approved authorization, dispersed recreational activities (e.g., hunting, hiking) and livestock grazing are not considered surface-disturbing or disruptive activities.

Coordination and partnerships with state and federal agencies, tribal governments, commercial interests, interested organizations and individuals would serve as an important way to achieve desired conditions throughout the planning area, particularly for wildlife species and populations that span administrative and legal boundaries.

The BLM would work with local organizations, schools and other agencies to provide educational programs, information brochures, interpretive sites, etc. to promote public awareness, appreciation, and understanding of wildlife conservation, management, and ecology.

### **Special Status Species**

BLM Manual 6840 provides policy and guidance for the conservation of BLM special status species and the ecosystems upon which they depend on BLM-administered lands.

The BLM would initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA.

The BLM would ensure habitat is provided for special status species (Tables 3.58 and 3.59 in Chapter 3). Proposed actions would not jeopardize the continued existence of a threatened or endangered species, or cause its habitat to be adversely modified or destroyed.

The BLM would continue cooperative participation in recovery plans, management plans and conservation strategies for special status species.

Fragmentation of large intact blocks of important wildlife habitat would be minimized, particularly in Greater Sage-Grouse and grassland bird priority areas.

## Alternative A (Current Management)

### General Wildlife

New and replacement fences would follow BLM specifications to allow easy passage of wildlife such as pronghorn, deer, elk and bighorn sheep.

**Bighorn Sheep:** No changes in livestock class from cows to domestic sheep would be allowed in areas occupied by bighorn sheep in the West HiLine planning area. In the Judith-Valley-Phillips planning area domestic sheep grazing would not be allowed to overlap bighorn sheep habitat.

**Migratory Birds:** Migratory bird habitat would be managed on a case-by-case basis through the environmental review of other resource activities.

**Waterfowl:** In the West HiLine planning area all high value waterfowl and fisheries would be evaluated to determine the need for fencing to promote riparian vegetation establishment. In the Judith-Valley-Phillips planning area the BLM would implement livestock grazing formulas to improve waterfowl nesting cover on allotments with existing or potential water production.



Bighorn Sheep

Photo by Craig Miller

### Special Status Species

**Black-tailed Prairie Dog:** The BLM, in cooperation with the USFWS and MFWP, would maintain the existing prairie dog habitat and distribution on BLM land within the 7km Complex based on a 1988 survey. The BLM would also support cooperative agreements for prairie dog towns on the Charles M. Russell National Wildlife Refuge (CMR), lands administered by Montana DNRC, and private land within the 7km Complex. The 7km Complex contains approximately 26,000 acres of prairie dog towns (16,392 BLM acres, 5,800 CMR acres, 2,012 Montana DNRC acres, and 5,821 private acres). Management actions would be directed to cooperatively maintain this amount of prairie dog habitat. Prairie dogs on BLM land outside the 7km Complex are nonessential to black-footed ferret recovery and would be maintained at the existing level (1988 survey) or controlled based on values other than the ferret.

The BLM would monitor prairie dog towns for expansion, and all allotments within the 7km Complex with prairie dog towns would be categorized as “I” (Improve). The BLM would control prairie dog expansion on BLM lands within the

7km Complex when the acreage exceeds the existing level (based on a 1988 survey). The BLM would maintain the prairie dog towns on BLM lands outside the 7km Complex at the existing level. The BLM may reduce or eradicate some small, isolated prairie dog towns.

Prairie dog reduction methods may include using EPA-registered toxicants or nontoxic methods for prairie dog control (i.e., barriers, water, vegetation enhancement, prairie dog sterilization, biological control, etc.).

When poisoning is scheduled on a prairie dog town which includes state and private land, a cooperative effort would be made to control the entire town. The cost of poisoning for state and private land would be the responsibility of the private landowner or the state land permittee.

The loss of prairie dog habitat on private land may be compensated for by developing additional habitat on BLM land in the vicinity of the habitat loss. Prairie dog expansion within the 7km Complex above the level recorded in the 1988 survey would not be allowed on BLM land without AUM mitigation. Any loss of livestock forage due to prairie dog habitat increases on BLM lands above the 1988 level would be mitigated through land treatments (mechanical, fire, etc.).

The BLM would manage firearm discharge on BLM land before and after ferret reintroduction. The BLM would respond to requests for information, prepare maps, sign prairie dog towns, and manage the towns to provide for recreational shooting. Firearm discharge may temporarily be prohibited on prairie dog towns where black-footed ferret reintroduction is occurring. However, recreational shooting would be managed on these towns and towns subsequently occupied by the ferret, unless impacts from shooting are shown to be detrimental.

**Greater Sage-Grouse:** The national and Montana Greater Sage-Grouse conservation strategies would be used as the basis to address sage-grouse needs during the watershed planning process and project level analysis.

**Mountain Plover:** The following management actions would apply to protect mountain plover habitat and maintain regional mountain plover populations:

- Mountain plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within 1/4 mile of essential habitat (Appendix E.4).
- Activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2).

**Piping Plover:** The following management actions would apply to protect piping plover habitat and maintain regional piping plover populations:

- Piping plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within 1/4 mile of essential and critical habitat (Appendix E.4).
- Activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2).

**Sprague's Pipit:** The following management actions would apply to protect Sprague's pipit habitat:

- Mitigation for oil and gas activities would occur as timing limits in the conditions of approval for APDs when proposed wells are located in appropriate habitat. The timing condition would avoid well development from April 15 through July 15.

## Alternative B

### General Wildlife

Fences identified as potential barriers to wildlife movement or representing significant hazards for wildlife on BLM land would be inventoried. Fences would be prioritized for replacement or modification based on wildlife resource values.

**Bighorn Sheep:** No new sheep or goat allotments would be allowed in bighorn sheep habitat. New sheep/goat allotments or conversion from cows to sheep/goats would not be allowed within 20 miles of occupied wild bighorn sheep habitat. Exact distances between domestic sheep and bighorn sheep would be based on habitat and movement potential.

**Migratory Birds:** The BLM would follow the Prairie Pothole Joint Venture Implementation Plan (PPJV 2005) to analyze site-specific proposed actions and determine whether BLM lands are meeting rangeland health standards. The BLM would use the following management actions to integrate the goals of the PPJV into programmatic and site-specific management decisions:

- emphasize maintenance and restoration of habitats that sustain sensitive species; and
- enhance or restore habitat composition and structure beyond PFC in riparian habitats, where and when appropriate, for migratory bird habitat.

**Waterfowl:** Upland and emergent vegetation in pastures surrounding reservoirs established or rebuilt for waterfowl values would be managed to provide adequate nesting and brood rearing cover for waterfowl.

### Special Status Species

#### Objective

Manage priority sage-grouse habitats so that discrete anthropogenic disturbances cover less than 3% of the total sage-grouse habitat regardless of ownership to protect priority sage-grouse habitats from anthropogenic disturbances that would reduce distribution or abundance of sage-grouse.

#### Management Actions

Mitigation of surface-disturbing or disruptive activities would be applied where needed to minimize impacts of human activities on important seasonal special status species habitats consistent with the wildlife stipulations outlined in the Fluid Minerals section of Chapter 2 and Appendix M. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of important wildlife species. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level, habitat for the species is not present in the area, or portions of the area could be occupied without affecting a particular species. Exceptions may also be granted where the short-term effects would be mitigated by the long-term benefits (e.g., prescribed fire or forest health treatments).

**Black-tailed Prairie Dog:** The BLM would adopt the MFWP Region 6 Prairie Dog Abundance and Distribution Objectives Plan (MFWP 2006a) and would commit to achieving prairie dog objectives outlined in the plan.

**Grassland Bird/Greater Sage-Grouse Priority Areas:** To minimize habitat fragmentation, four areas with BLM surface ownership would be managed as an ACEC to retain intact blocks of native vegetation. One of these areas is also a sage-grouse core area identified by MFWP. These four areas would include 461,220 acres of BLM surface (Map 2.17, which is located at the end of Chapter 2). The following management actions would apply to the four areas:

- The areas would be closed to oil and gas leasing (471,989 acres of federal minerals). The area would not be available for geophysical exploration except to obtain exploratory information for areas outside of and adjacent to the priority areas. Existing leases would be allowed to expire and would not be renewed.
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of

#### Prairie Dog Abundance and Distribution Objectives (MFWP 2006a)

Maintain abundance and distribution of black-tailed prairie dogs. Acreages of active prairie dog towns would range between 30,500 and 41,400 acres (36,000 acres plus or minus 15%) in the planning area for the next 20 years and would consist of:

- One Category 1 complex of 5000+ acres of active prairie dog towns spaced no more than 1.5 km (1 mile) apart. This complex will not be actively managed to exceed 10,000 acres;
- Six to eight Category 2 complexes of 1,000 or more acres of active prairie dog towns. Two or three of these complexes would follow the 1.5 km rule and the remainder would follow the 7km rule; and
- Category 3 prairie dog towns would be scattered throughout the historic prairie dog range in the planning area.

development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2).

Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.

- The areas would be exclusion areas for the issuance of rights-of-way except within designated corridors. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The areas would remain available for livestock grazing. Site-specific grassland bird and/or Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective allotment management plans (AMPs) or livestock grazing permits as appropriate.
- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- The areas would be exclusion areas for wind energy rights-of-way.
- The areas would be recommended for withdrawal from locatable mineral entry (469,916 acres) and closed to leasable (471,945 acres) and salable minerals (317,197 acres). The areas would not be available for other withdrawal proposals unless the land management is consistent with Greater Sage-Grouse conservation measures.
- The areas would be limited to existing mineral material disposal permits, which could be renewed with limited expansion.

#### Grassland Bird/Greater Sage-Grouse Priority Areas

Areas containing substantial and high quality grasslands that support large populations of a suite of special status grassland bird species. This suite of species includes the following species of concern: Sprague’s pipit, chestnut-collared longspur, McCown’s longspur, Baird’s sparrow, and long-billed curlew. Management actions would emphasize the conservation and enhancement of sustainable grassland bird habitats. Areas are delineated by using survey results, predictive models of species distributions, and land ownership patterns.

These areas also include core area for Greater Sage-Grouse identified by MFWP. Sage-grouse core areas are habitats associated with 1) Montana’s highest densities of sage-grouse, based on male counts and/or 2) sage-grouse lek complexes and associated habitat important to sage-grouse distribution.

**Greater Sage-Grouse General Habitat Areas:** The BLM would use the national and Montana Greater Sage-Grouse conservation strategies as standards in the planning area except for habitat standards, which would be derived from regional standards.

Consideration would be given to incorporating site-specific Greater Sage-Grouse habitat and management objectives as appropriate to the area into AMPs or livestock grazing permits.

Greater Sage-Grouse habitat suitability determinations would be based upon existing guidelines modified with data from recent habitat inventories and assessments in the planning area. Relevant range-wide research findings would also be included in habitat suitability determinations.

The BLM would emphasize restoration and rehabilitation of sagebrush in areas that are capable of, but no longer support sagebrush to contribute to the distribution and connectivity of habitat patches.

Greater Sage-Grouse habitats associated with silver sagebrush north of the Milk River would be enhanced to improve habitat conditions for nesting and brood rearing. Specific management actions would be derived from the results of ongoing research and best available science.

All new powerlines on BLM land within 1 mile of Greater Sage-Grouse leks would be buried.

Fragmentation of large intact blocks of habitat for special status species would be minimized, particularly in habitat protection areas for Greater Sage-Grouse and grassland birds.

The BLM would coordinate with MFWP or other interested parties to highlight special status species information and BLM management of habitats for special status species. The BLM would also provide outreach materials for the general public.

**Greater Sage-Grouse Protection Priority Area:** To minimize wildlife habitat fragmentation, an area with BLM surface ownership greater than 50% would be managed as an ACEC to retain intact blocks of native vegetation where contiguous acreage of greater than 10,000 acres is present. This would include 930,265 acres of BLM surface (Map 2.17, which is located at the end of Chapter 2) on which the following management actions would apply:

- The area would be closed to oil and gas leasing (1,028,661 acres of federal minerals). The area would not be available for geophysical exploration except to obtain exploratory information for areas outside of and adjacent to the Protection Priority Area. Existing leases would be allowed to expire and would not be renewed.
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2). Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.
- The area would be an exclusion area for the issuance of rights-of-way except within designated corridors. Rights-of-way and similar facilities would be located adjacent to other facilities in a corridor where practical. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The area would remain available for livestock grazing. Site-specific Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate.

**Greater Sage-Grouse  
Protection Priority Area**

An area with limited impacts containing substantial and high quality Greater Sage-Grouse habitat that supports high density Greater Sage-Grouse populations. Management actions would emphasize the conservation and enhancement of sustainable Greater Sage-Grouse habitat. The area is delineated by using “key,” “core” and connectivity data/maps, land ownership patterns, and other resource information.

- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- The area would be an exclusion area for wind energy rights-of-way.
- The area would be recommended for withdrawal from locatable mineral entry (1,067,376 acres) and closed to leasable (1,023,068 acres) and salable minerals (1,023,068 acres). The area would not be available for other withdrawal proposals unless the land management is consistent with Greater Sage-Grouse conservation measures.
- The area would be limited to existing mineral material disposal permits which could be renewed with limited expansion.

**Mountain Plover:** The following management actions would apply to protect mountain plover habitat and maintain regional mountain plover populations:

- Mountain plover habitat would be closed to oil and gas leasing. A timing stipulation would also apply: surface occupancy and use would be prohibited within 1/2 mile of mountain plover habitat from April 1 through July 15 (Appendix E.4).
- Activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2).
- Road maintenance in mountain plover habitat would not occur between April 1 and July 15 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.

**Piping Plover:** The following management actions would apply to protect piping plover habitat and maintain regional piping plover populations:

- The area would be closed to oil and gas leasing within 1/2 mile of piping plover habitat.
- Road maintenance in piping plover habitat would not occur between April 1 and July 31 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.

**Sprague's Pipit:** The following management actions would apply to protect Sprague's pipit habitat:

- Sprague's pipits would be protected through management actions for the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC.
- Mitigation for oil and gas activities would occur as timing limits in the conditions of approval for APDs when proposed wells are located in appropriate habitat. The timing condition would avoid well development from April 15 through July 15.

## Alternative C

### General Wildlife

Fences identified as potential barriers to wildlife movement or representing significant hazards for wildlife on BLM land would be inventoried. Fences would be prioritized for replacement or modification to maintain resource values including wildlife movements.

**Bighorn Sheep:** No new sheep or goat allotments would be allowed in bighorn sheep habitat. Allotments in current bighorn sheep range would be reclassified to eliminate sheep grazing. Allotments between current bighorn sheep range and current sheep allotments would be reviewed and reclassified based on habitat, movement potential, and current science and guidelines to minimize contact between domestic sheep and bighorn sheep.

**Migratory Birds:** The BLM would follow the Prairie Pothole Joint Venture Implementation Plan (PPJV 2005) to analyze site-specific proposed actions and determine whether BLM lands are meeting rangeland health standards. The BLM would use the following management actions to integrate the goals of the PPJV into programmatic and site-specific management decisions:

- The BLM would emphasize maintenance and restoration of habitats that sustain sensitive species.
- The BLM would enhance or restore habitat composition and structure beyond PFC in riparian habitats, where and when appropriate, for migratory bird habitat.

**Waterfowl:** Upland and emergent vegetation in pastures surrounding reservoirs established or rebuilt for waterfowl values would be managed to provide adequate nesting and brood rearing cover for waterfowl.

## Special Status Species

Mitigation of surface-disturbing or disruptive activities would be applied where needed to minimize impacts of human activities on important seasonal special status species habitats consistent with the wildlife stipulations outlined in the Fluid Minerals section of Chapter 2 and Appendix M. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of important wildlife species. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level, habitat for the species is not present in the area, or portions of the area can be occupied without affecting a particular species. Exceptions may also be granted where the short-term effects are mitigated by the long-term benefits (e.g., prescribed fire or forest health treatments).

The BLM would coordinate with MFWP or other interested parties to highlight special status species information and BLM management of habitats for special status species. The BLM would also provide outreach materials for the general public.

**Black-tailed Prairie Dog:** The BLM would adopt the MFWP Region 6 Prairie Dog Abundance and Distribution Objectives Plan (MFWP 2006a) and would commit to achieving prairie dog objectives outlined in the plan.

**Grassland Bird/Greater Sage-Grouse Priority Areas:** To minimize habitat fragmentation, two areas with BLM surface ownership would be managed to retain intact blocks of native vegetation. One of these areas is also a sage-grouse core area identified by MFWP. These two areas would include 298,772 acres of BLM surface (Map 2.17). The following management actions would apply to the two areas:

- The areas would include a controlled surface use stipulation for oil and gas leasing (318,143 acres): surface-disturbing and disruptive activities may be restricted or prohibited within the priority areas (Appendix E.4). Prior to surface-disturbing or disruptive activities a plan to maintain functionality of grassland bird/Greater Sage-Grouse habitat would be prepared by the proponent and implemented upon approval by the authorized officer. Within the priority areas surface-disturbing or disruptive activities would be restricted or prohibited within 6/10 of a mile from the boundary of a lek. The plan should address how short-term and long-term direct and indirect effects to important breeding (leks), nesting, brood-rearing, and wintering areas would be mitigated based on current science and research (Appendix E.5). The plan would also include a monitoring protocol (Appendix M.2).
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2).

Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and

application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.

- The areas would be avoidance areas for the issuance of rights-of-way except within designated corridors. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The areas would remain available for livestock grazing. Site-specific grassland bird and/or Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate.
- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- The areas would be exclusion areas for wind energy rights-of-way.
- The areas would be recommended for withdrawal from locatable mineral entry (316,830 acres) and closed to leasable (317,197 acres) and salable minerals (317,197 acres).
- The areas would be limited to existing mineral material disposal permits, which could be renewed with limited expansion.

**Greater Sage-Grouse General Habitat Areas:** The BLM would use the national and Montana Greater Sage-Grouse conservation strategies as standards in the planning area except for habitat standards, which would be derived from regional standards.

Consideration would be given to incorporating site-specific Greater Sage-Grouse habitat and management objectives as appropriate to the area into AMPs or livestock grazing permits.

Greater Sage-Grouse habitat suitability determinations would be based upon existing guidelines modified with data from recent habitat inventories and assessments in the planning area. Relevant range-wide research findings would also be included in habitat suitability determinations.

The BLM would emphasize restoration and rehabilitation of sagebrush in areas that are capable of, but no longer support sagebrush to contribute to the distribution and connectivity of habitat patches.

Greater Sage-Grouse habitats associated with silver sagebrush north of the Milk River would be enhanced to improve habitat conditions for nesting and brood rearing. Specific management actions would be derived from the results of ongoing research and best available science.

All new powerlines on BLM lands within 1 mile of Greater Sage-Grouse leks would be buried.

Fragmentation of large intact blocks of important wildlife habitat would be minimized, particularly in habitat protection areas for Greater Sage-Grouse and grassland birds.

**Greater Sage-Grouse Protection Priority Area:** To minimize wildlife habitat fragmentation, an area with BLM surface ownership greater than 50% would be managed to retain intact blocks of native vegetation where contiguous acreage of greater than 10,000 acres is present. This would include 930,265 acres of BLM surface (Map 2.17). The following management actions would apply to the area:

- The area would include a controlled surface use stipulation for oil and gas leasing (1,028,661 acres): surface-disturbing and disruptive activities may be restricted or prohibited within the Protection Priority Area (Appendix E.4). Prior to surface-disturbing or disruptive activities a plan to maintain functionality of Greater Sage-Grouse habitat would be prepared by the proponent and implemented upon approval by the authorized officer. Within the Protection Priority Area surface-disturbing or disruptive activities would be restricted or prohibited within 6/10 of a mile from any existing surface-disturbing or disruptive activity. The plan should address how short-term and long-term direct and indirect effects to important breeding (leks), nesting, brood-rearing, and wintering areas would be mitigated based on current science and research (Appendix E.5). The plan would also include a monitoring protocol (Appendix M.2).
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2).

Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.

- The area would be an avoidance area for the issuance of rights-of-way except within designated corridors. Rights-of-way and similar facilities would be located adjacent to other facilities in a corridor where practical. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The area would remain available for livestock grazing. Site-specific Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate.
- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- The area would be an exclusion area for wind energy rights-of-way.
- The area would be recommended for withdrawal from locatable mineral entry (1,067,376 acres) and closed to leasable (1,023,068 acres) and salable minerals (1,023,068 acres).
- The area would be limited to existing mineral material disposal permits, which could be renewed with limited expansion.

**Mountain Plover:** The following management actions would apply to protect mountain plover habitat and maintain regional mountain plover populations:

- Mountain plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within mountain plover habitat (Appendix E.4).

- A timing stipulation would also apply: surface occupancy and use would be prohibited within 1/4 mile of mountain plover habitat from April 1 through July 15 (Appendix E.4).
- Activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2).
- For surface-disturbing or disruptive activities other than oil and gas, mitigation would be applied where needed to minimize impacts of human activities on mountain plover habitat consistent with the oil and gas surface use restrictions. The BLM would avoid permanent above-ground structures that may provide perches for avian predators or deter plover from using preferred habitat. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of mountain plovers. This would include surveys for mountain plovers in all suitable habitat, as well as avoidance of nesting areas from April 1 through July 15. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.

**Piping Plover:** The following management actions would apply to protect piping plover habitat and maintain regional piping plover populations:

- Piping plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within 1/4 mile of essential and critical habitat (Appendix E.4).
- Road maintenance in piping plover habitat would not occur between April 1 and July 31 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.

**Sprague's Pipit:** The following management actions would apply to protect Sprague's pipit habitat:

- Sprague's pipits would be protected through management actions for the Grassland Bird/Greater Sage-Grouse Priority Areas.
- Mitigation for oil and gas activities would occur as timing limits in the conditions of approval for APDs when proposed wells are located in appropriate habitat. The timing condition would avoid well development from April 15 through July 15.

## Alternative D

### General Wildlife

Fences identified as barriers to wildlife movement or representing significant hazards for wildlife on BLM land would be modified on a case-by-case basis as problems are identified.

**Bighorn Sheep:** No new sheep or goat allotments would be allowed in bighorn sheep habitat. New sheep/goat allotments or conversion from cows to sheep/goats would not be allowed within 5 miles of occupied wild bighorn sheep habitat.

**Migratory Birds:** Migratory bird habitat would be managed on a case-by-case basis through the environmental review of other resource activities.

**Waterfowl:** Upland and emergent vegetation in pastures surrounding reservoirs established or rebuilt for waterfowl values would be managed to provide adequate nesting and brood rearing cover for waterfowl.

### Special Status Species

Mitigation of surface-disturbing or disruptive activities would be applied where needed to minimize impacts of human activities on important seasonal special status species habitats consistent with the wildlife stipulations outlined in the Fluid Minerals section of Chapter 2 and Appendix M. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of important wildlife species. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level, habitat for the species is not present in the area, or portions of the area can be occupied

without affecting a particular species. Exceptions may also be granted where the short-term effects are mitigated by the long-term benefits (e.g., prescribed fire or forest health treatments).

**Black-tailed Prairie Dog:** Prairie dog colonies would be managed on a case-by-case basis at the project level.

**Greater Sage-Grouse:** The BLM would use the national and Montana Greater Sage-Grouse conservation strategies as the basis to address Greater Sage-Grouse needs during the watershed planning process and project level analysis.

Greater Sage-Grouse habitat suitability determinations would be based upon existing guidelines modified with data from recent habitat inventories and assessments in the planning area. Relevant range-wide research findings would also be included in habitat suitability determination.

All powerlines on BLM land within 1 mile of Greater Sage-Grouse leks would be fitted with anti-raptor perching devices.

Fragmentation of large intact blocks of important wildlife habitat would be minimized, particularly in habitat protection areas for Greater Sage-Grouse and grassland birds.

**Mountain Plover:** The following management actions would apply to protect mountain plover habitat and to maintain regional mountain plover populations:

- Mountain plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within mountain plover habitat (Appendix E.4).
- Activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2).
- For surface-disturbing or disruptive activities other than oil and gas, mitigation would be applied where needed to minimize impacts of human activities on mountain plover habitat. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of mountain plovers. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.
- Road maintenance in mountain plover habitat would not occur between April 1 and July 15 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.

**Piping Plover:** The following management actions would apply to protect piping plover habitat and maintain regional piping plover populations:

- A timing stipulation for oil and gas activities would apply: surface occupancy and use would be prohibited within 1/4 mile of piping plover habitat from May 15 through July 31 (Appendix E.4).
- Road maintenance in piping plover habitat would not occur between April 1 and July 31 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.

**Sprague's Pipit:** The following management actions would apply to protect Sprague's pipit habitat:

- Mitigation for oil and gas activities would occur as timing limits in the conditions of approval for APDs when proposed wells are located in appropriate habitat. The timing condition would avoid well development from April 15 through July 15.

## Alternative E (Preferred Alternative)

### General Wildlife

Fences identified as potential barriers to wildlife movement or representing significant hazards for wildlife on BLM land would be inventoried. Fences would be prioritized for replacement or modification to maintain resource values including wildlife movements.

**Bighorn Sheep:** No new grazing permits authorizing sheep or goat allotments would be allowed within the MFWP Bighorn Sheep Management Zone (Figure 3.21). Sheep and goat allotments in areas with risk of contact between bighorn sheep and domestic sheep and/or goats in the planning area would be reviewed and managed, or reclassified if necessary, to achieve effective separation (both temporal and/or spatial) between domestic sheep and/or goats and bighorn sheep. Domestic sheep/goats would not be allowed within bighorn sheep range unless mechanisms are in place to achieve effective separation from wild sheep.

**Migratory Birds:** The BLM would follow the Prairie Pothole Joint Venture Implementation Plan (2005) to analyze site-specific proposed actions and determine whether BLM lands are meeting rangeland health standards. The BLM would integrate the goals of the PPJV into programmatic and site-specific management decisions through the following management actions:

- Emphasize maintenance and restoration of habitats that sustain sensitive species.
- Strive to enhance or restore migratory bird habitat composition and structure in riparian habitats, where and when appropriate.

**Waterfowl:** Upland and emergent vegetation in pastures surrounding reservoirs established or rebuilt for waterfowl values would be managed to provide adequate nesting and brood rearing cover for waterfowl.

### Special Status Species

The BLM would coordinate with MFWP or other interested parties to highlight special status species information and BLM management of habitats for special status species. The BLM would also provide outreach materials for the general public.

### Mitigation

Mitigation measures for all resources are included in Appendices C and M. The BLM may add additional mitigation measures as deemed necessary by further environmental analysis and as developed through consultation with other federal, state, and local regulatory and resource agencies.

In all sage-grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions.

### Application of Lek Buffers

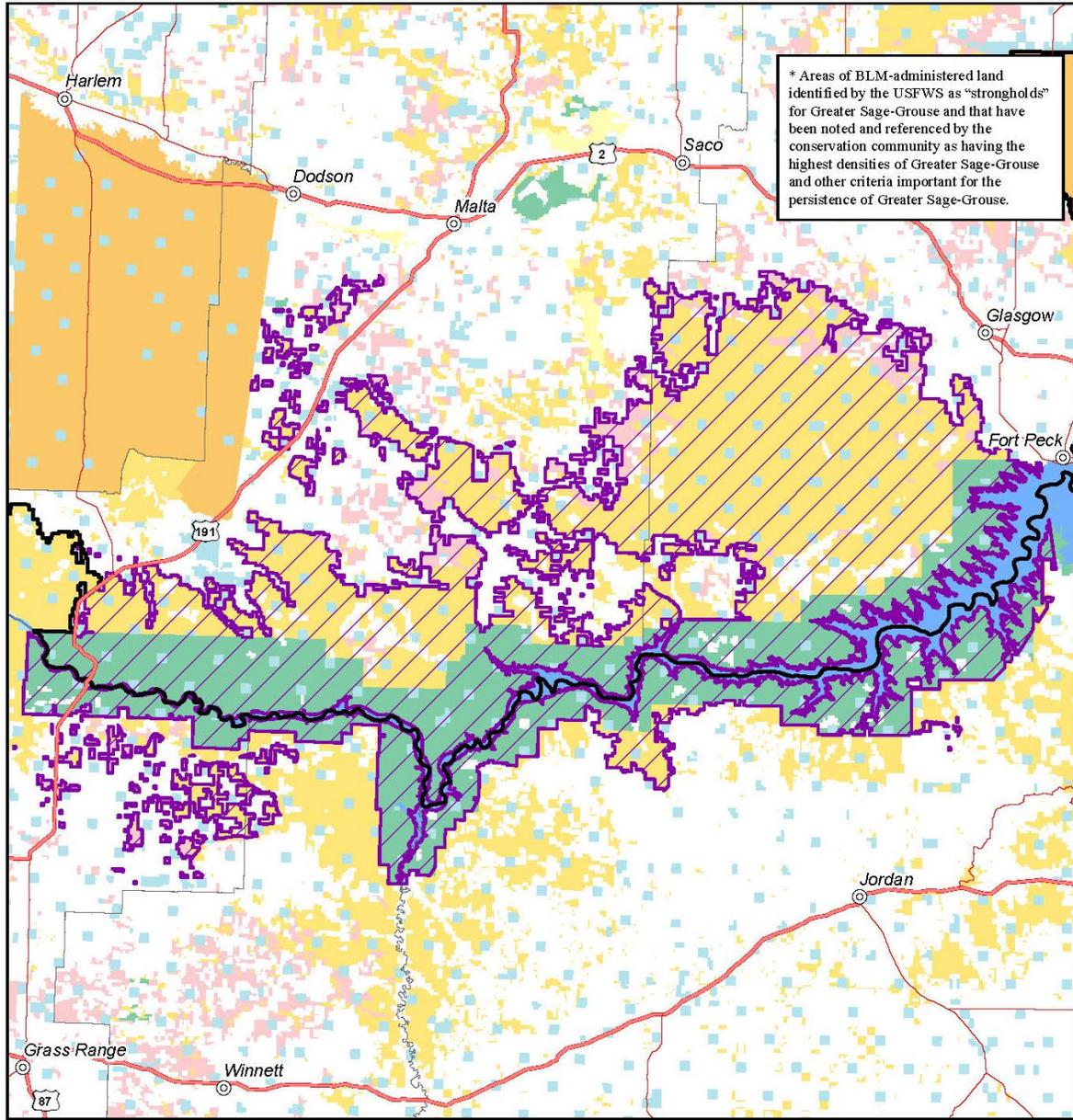
In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM would apply the lek buffer-distances identified in the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review ([Open File Report 2014-1239](#)) in accordance with Appendix M.

### Development in Highly Important Landscapes

The BLM will designate Sagebrush Focal Areas as shown in Figure 2.7 (927,074 acres). All BLM-administered lands within the SFA boundary would be:

- 1) Recommended for withdrawal from the General Mining Act of 1872, subject to valid existing rights.
- 2) Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing.
- 3) Prioritized for management and conservation actions in these areas, including, but not limited to review of livestock grazing permits/leases (see the Livestock Grazing section for additional actions).

**Figure 2.7**  
**Sagebrush Focal Areas**



Created by the Malta Field Office in February 2015



Albers Equal Area, NAD83, Meters

U.S. DEPARTMENT OF THE INTERIOR  
Bureau of Land Management  
HiLine District

**Sagebrush Focal Areas**

This map is intended for display purposes. No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data, or for purposes not intended by the BLM. This map may not meet National Map Accuracy Standards. This product was developed through digital means and information may be updated without notification.

Indian Reservation	State Lands
Bureau of Land Management (BLM)	US Fish and Wildlife Service
Bankhead-Jones Land Use Lands	Private
Bureau of Reclamation	
Sagebrush Focal Area *	
Planning Area Boundary	

Location within the planning area

## Disturbance

The Montana/Dakotas BLM will use a 3% disturbance cap at the Biologically Significant Unit (BSU) and project scale, until the State strategy, similar to Wyoming's Core Strategy of 5% for all lands and all disturbances, is fully implemented. The density calculation (an average of 1 facility per 640 acres) applies to energy and mining facilities. The disturbance cap will not be applied to foreclose development of locatable minerals on unpatented claims located under the General Mining Act of 1872; the disturbance from locatable mining will be accounted for in determining the percent disturbance and whether the cap has been exceeded.

If the 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) or if anthropogenic disturbance and habitat loss associated with conversion to agricultural tillage or fire exceed 5% within a project analysis area, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the General Mining Act of 1872, valid existing rights, etc.) will be permitted by the BLM within a project analysis area until the disturbance has been reduced to less than the cap. If the BLM determines that the State of Montana has adopted a Greater Sage-Grouse Habitat Conservation Program that contains comparable components to those found in the State of Wyoming's Core Area Strategy including an all lands approach for calculating anthropogenic disturbances, a clear methodology for measuring the density of operations, and a fully operational density disturbance calculation tool (DDCT), the 3% disturbance cap will be converted to a 5% cap for all sources of habitat alteration within a project analysis area.

Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in the Priority Habitat Management Area within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is co-located into an existing disturbed area.

**Black-tailed Prairie Dog:** The BLM would adopt the MFWP Region 6 Prairie Dog Abundance and Distribution Objectives Plan (MFWP 2006a) and would contribute to achieving prairie dog objectives on BLM land as outlined in the plan.

The BLM would manage firearm discharge on BLM land before and after any future ferret reintroduction. Firearm discharge may temporarily be prohibited on prairie dog towns where black-footed ferret reintroduction is occurring. However, recreational shooting would be managed on these towns and towns subsequently occupied by the ferret, unless impacts from shooting are shown to be detrimental.

### Prairie Dog Abundance and Distribution Objectives (MFWP 2006a)

Maintain abundance and distribution of black-tailed prairie dogs. Acreages of active prairie dog towns would range between 30,500 and 41,400 acres (36,000 acres plus or minus 15%) in the planning area for the next 20 years and would consist of:

- One Category 1 complex of 5000+ acres of active prairie dog towns spaced no more than 1.5 km (1 mile) apart. This complex will not be actively managed to exceed 10,000 acres;
- Six to eight Category 2 complexes of 1,000 or more acres of active prairie dog towns. Two or three of these complexes would follow the 1.5 km rule and the remainder would follow the 7km rule; and
- Category 3 prairie dog towns would be scattered throughout the historic prairie dog range in the planning area.

**Greater Sage-Grouse:** Quantifiable vegetation objectives have been identified for sage-grouse breeding (leks, pre-laying, nesting and early brood-rearing) habitat on public land. The desired conditions for sage-grouse habitat presented in Table 2.27 are based on recommendations in current literature (Stiver, et al. 2014, Doherty, et al. 2014, Doherty, et al. 2011, Connelly, et al. 2000, and Hagen, et al. 2007) and have been modified to more accurately reflect local conditions based on the vegetative potentials identified for ecological sites in Major Land Resource Areas 52C and 58A (USDA 2005). Table 2.27, Desired Conditions for Sage-Grouse Habitat, is to be used as a minimum to meet the applicable Land Health Standard in sage-grouse habitats.

The assessment and evaluation of these objectives will follow the steps described in the Sage-Grouse Habitat Assessment Framework (Stiver, et al. 2014).

<b>Table 2.27 Desired Conditions for Greater Sage-Grouse Habitat</b>					
<b>Habitat Indicators</b>	<b>Dominant Sagebrush, Soil Type and/or Ecological Site</b>				
	<i>Sagebrush on saline and/or sodic soils</i>	<i>Sagebrush on acid shale parent materials</i>	<i>Silver sagebrush on overflow sites</i>	<i>Silver sagebrush on all other soils/sites</i>	<i>Wyoming big sagebrush on all other soils/sites</i>
<b>Sage-Grouse Breeding Habitat</b>					
Sagebrush Canopy Cover	≥ 5%	≥ 5%	10-25%	≥ 2%	15-25%
Sagebrush Height	≥ 6 inches	≥ 6 inches	≥ 12 inches	≥ 12 inches	≥ 12 inches
Perennial Grass Heights	≥ 5 inches	≥ 7 inches	≥ 7 inches	≥ 7 inches	≥ 7 inches
Perennial Grass Canopy Cover	≥ 10%	≥ 10%	≥ 15%	≥ 15%	≥ 10%
Perennial Forb Canopy Cover	≥ 3%	≥ 3%	≥ 10%	≥ 5%	≥ 5%
Perennial Forb Availability	≥ 3 species	≥ 3 species	≥ 5 species	≥ 5 species	≥ 5 species
Riparian Areas & Wet Meadows	Proper Functioning Condition				
Lek Security	Rocky Mountain juniper and/or Ponderosa pine with less than 1% canopy cover on shrub/grassland ecological sites within 3 kilometers (1.86 miles) of occupied leks.				
<b>Sage-Grouse Winter Habitat</b>					
Sagebrush Availability	≥10% canopy and ≥10 inches visible above snow				

These habitat objectives in Table 2.27 summarize the characteristics that research has found represent the seasonal habitat needs for Greater Sage-Grouse. The specific seasonal components identified in the Table were adjusted based on local science and monitoring data to define the range of characteristics used in this subregion. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the landscape that indicate the seasonal habitats used by sage-grouse. These habitat indicators are consistent with the rangeland health indicators used by the BLM.

The habitat objectives will be part of the sage-grouse habitat assessment to be used during land health evaluations (see Monitoring Framework, Appendix M.2). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.

All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use.

**Grassland Bird/Greater Sage-Grouse Priority Habitat Management Area:** To minimize habitat fragmentation, the area with BLM surface ownership would be managed to retain intact blocks of native vegetation. This area includes the northern portion of the sage-grouse core area as identified by MFWP and includes the priority area of conservation

(PAC) as identified by the USFWS. This area would include 426,355 acres of BLM surface (Map 2.18). The following management actions would apply to this area:

- The area would include a no surface occupancy (NSO) stipulation for oil and gas leasing, unless there is a more restrictive stipulation in place to protect other resource values (e.g., no lease in the Bitter Creek WSA). No waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The authorized officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action:
  - would not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat; or,
  - is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to Greater Sage-Grouse.
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2).

Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, applies compensator mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.

- The area would be an avoidance area for the issuance of rights-of-way except within designated corridors. Rights-of-way and similar facilities would be located adjacent to other facilities in a corridor where practical. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The area would remain available for livestock grazing. Site-specific grassland bird and/or Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate. Third order (fine-scale) and fourth order (site-scale) habitat indicators and characteristics for sage-grouse habitat seasonal use areas as described in the Sage-Grouse Habitat Assessment Framework (Stiver, et al. 2014) would be used to quantify habitat objectives.
- The NEPA analyses for renewals and modifications of livestock grazing permits/leases that include lands within the Priority Habitat Management Areas will include specific management thresholds based on the Desired Conditions for Greater Sage-Grouse Habitat (habitat objectives) presented in Table 2.27 and Land Health

**Grassland Bird/Greater Sage-Grouse  
Priority Habitat Management Area**

An area containing substantial and high quality grasslands that supports large populations of a suite of special status grassland bird species. This suite of species includes the following species of concern: Sprague’s pipit, chestnut-collared longspur, McCown’s longspur, Baird’s sparrow, and long-billed curlew. Management actions would emphasize the conservation and enhancement of sustainable grassland bird habitats. The area is delineated by using survey results, predictive models of species distributions, and land ownership patterns.

This area also includes core area for Greater Sage-Grouse identified by MFWP. Sage-grouse core areas are habitats associated with 1) Montana’s highest densities of sage-grouse, based on male counts and/or 2) sage-grouse lek complexes and associated habitat important to sage-grouse distribution.

Standards (43 CFR 4180.2) and one or more defined responses that will allow the authorized officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis.

- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- If prescribed fire is to be used for vegetation treatments, the burn plan will clearly indicate how COT objectives will be addressed and met by its use, and why alternative techniques were not selected.
- A Fire Risk Assessment would be completed for implementation of prescribed fire in relation to sage-grouse goals and objectives.
- The area would be an exclusion area for solar and wind energy rights-of-way.
- Priority Habitat Management Areas are closed to new mineral material sales. However, these areas remain “open” to free use permits and the expansion of existing active pits, only if the following criteria are met:
  - the activity is within the Biologically Significant Unit (BSU) and project area disturbance cap;
  - the activity is subject to the provisions set forth in the mitigation framework (Appendix M.4);
  - all applicable required design features are applied (Appendix M.6).
- The area would be closed to solid leasable minerals, including non-energy leasable minerals.
- New road construction would be limited to realignments of existing roads, if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for public safety. New road construction would include appropriate BMPs and mitigation (Appendices C and M).
- Existing roads, or realignments, would be used to access valid existing rights. If valid existing rights cannot be accessed via existing roads, then any new road would be constructed to the absolute minimum standard necessary with appropriate BMPs and mitigation (Appendices C and M).

**Greater Sage-Grouse General Habitat Areas:** Sagebrush habitats would be managed so that mid-scale (i.e. landscape level) shrub cover should include a mix of height classes with herbaceous understory adequate for meeting Greater Sage-Grouse requirements as well as habitat requirements for other sage-associated species such as mule deer and pronghorn.

Consideration would be given to incorporating fine-scale and site-specific Greater Sage-Grouse habitat and management objectives as appropriate to the area into AMPs or livestock grazing permits.

General sage-grouse habitat would be an avoidance area for solar and wind energy rights-of-way.

Greater Sage-Grouse habitat suitability determinations would be based upon existing guidelines modified with data from recent habitat inventories and assessments in the planning area. Relevant range-wide research findings would also be included in habitat suitability determinations.

The BLM would emphasize restoration and rehabilitation of sagebrush in areas that are capable of, but no longer support sagebrush to contribute to the distribution and connectivity of habitat patches.

Greater Sage-Grouse habitats associated with silver sagebrush north of the Milk River would be enhanced to improve habitat conditions for nesting and brood rearing. Specific management actions would be derived from the results of ongoing research and best available science.

New distribution powerlines on BLM land within 1 mile of Greater Sage-Grouse leks would be buried.

Fragmentation of large intact blocks of habitat for special status species would be minimized, particularly in habitat protection areas for Greater Sage-Grouse and grassland birds.

**Greater Sage-Grouse Priority Habitat Management Area:** To minimize wildlife habitat fragmentation, an area with BLM surface ownership greater than 50% would be managed to retain intact blocks of native vegetation where contiguous acreage of greater than 10,000 acres is present. This area includes the southern portion of the sage-grouse core area as identified by MFWP and includes the PAC as identified by the USFWS. This area includes 1,006,312 acres of BLM surface (Map 2.18) on which the following management actions would apply:

- The area would include a no surface occupancy (NSO) stipulation for oil and gas leasing unless there is a more restrictive stipulation in place to protect other resource values (e.g., no lease in the Mountain Plover ACEC). No waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The authorized officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action:
  - would not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat; or,
  - is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to Greater Sage-Grouse.
- Exploration and development activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2), or other mitigation measures, through conditions of approval in authorizing APDs or plans of development. Consistent with surface use rights granted, the existing lease may be subject to “restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed” (43 CFR 3101.1-2). Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, and applies compensatory mitigation for direct and indirect impacts to sage-grouse habitat or use and includes applicable and technically feasible conditions of approval (Appendix M). Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.
- The area would be an avoidance area for the issuance of rights-of-way except within designated corridors. Rights-of-way and similar facilities would be located adjacent to other facilities in a corridor where practical. The BLM would consider opportunities to remove, bury, or modify existing powerlines (e.g., burying, anti-perching devices or line location).
- Where leases or rights-of-way have some level of development (e.g., road, fence, well, etc.) that are no longer in use, the site would be reclaimed by removing the features and restoring the habitat. Upon project completion or right-of-way expiration, roads built and maintained for commercial use across BLM land would be reclaimed, unless based on site-specific analysis, the route provides specific benefits to the public and the continued public use does not contribute to resource conflicts.
- The area would remain available for livestock grazing. Site-specific Greater Sage-Grouse habitat and management objectives would be developed for BLM land and incorporated into the respective AMPs or livestock grazing permits as appropriate. Third order (fine-scale) and fourth order (site-scale) habitat indicators and characteristics for sage-grouse habitat seasonal use areas as described in the Sage-Grouse Habitat Assessment Framework (Stiver, et al. 2014) would be used to quantify habitat objectives.
- The NEPA analyses for renewals and modifications of livestock grazing permits/leases that include lands within Priority Habitat Management Areas will include specific management thresholds based on the Desired Conditions for Greater Sage-Grouse Habitat (habitat objectives) presented in Table 2.27 and Land Health Standards (43 CFR 4180.2) and defined responses that will allow the authorized officer to make adjustments to livestock grazing without conducting additional NEPA.

**Greater Sage-Grouse  
Priority Habitat Management  
Area**

An area with limited impacts containing substantial and high quality Greater Sage-Grouse habitat that supports high density Greater Sage-Grouse populations. Management actions would emphasize the conservation and enhancement of sustainable Greater Sage-Grouse habitat. The area is delineated by using “key,” “core” and connectivity data/maps, land ownership patterns, and other resource information.

- Existing range improvements, including the location of supplements, would be evaluated and if necessary modified to conserve, enhance or restore sage-grouse habitat.
- If prescribed fire is to be used for vegetation treatments, the burn plan will clearly indicate how COT objectives will be addressed and met by its use, and why alternative techniques were not selected.
- A Fire Risk Assessment would be completed for implementation of prescribed fire in relation to sage-grouse goals and objectives.
- The area would be an exclusion area for solar and wind energy rights-of-way.
- The area would be closed to solid leasable minerals, including non-energy leasable minerals.
- Priority Habitat Management Areas are closed to new mineral material sales. However, these areas remain “open” to free use permits and the expansion of existing active pits, only if the following criteria are met:
  - the activity is within the Biologically Significant Unit (BSU) and project area disturbance cap;
  - the activity is subject to the provisions set forth in the mitigation framework (Appendix M.4);
  - all applicable required design features are applied (Appendix M.6).
- New road construction would be limited to realignments of existing roads, if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for public safety. New road construction would include appropriate BMPs and mitigation (Appendices C and M).
- Existing roads, or realignments, would be used to access valid existing rights. If valid existing rights cannot be accessed via existing roads, then any new road would be constructed to the absolute minimum standard necessary with appropriate BMPs and mitigation (Appendices C and M).

**Greater Sage-Grouse Restoration Area:** This is an area with ongoing or imminent impacts containing substantial and high quality sage-grouse habitat that historically supported sustainable sage-grouse populations. This area includes 46,786 acres of BLM surface (Figure 2.8). Management actions would emphasize restoration for the purpose of establishing or restoring sustainable sage-grouse populations.



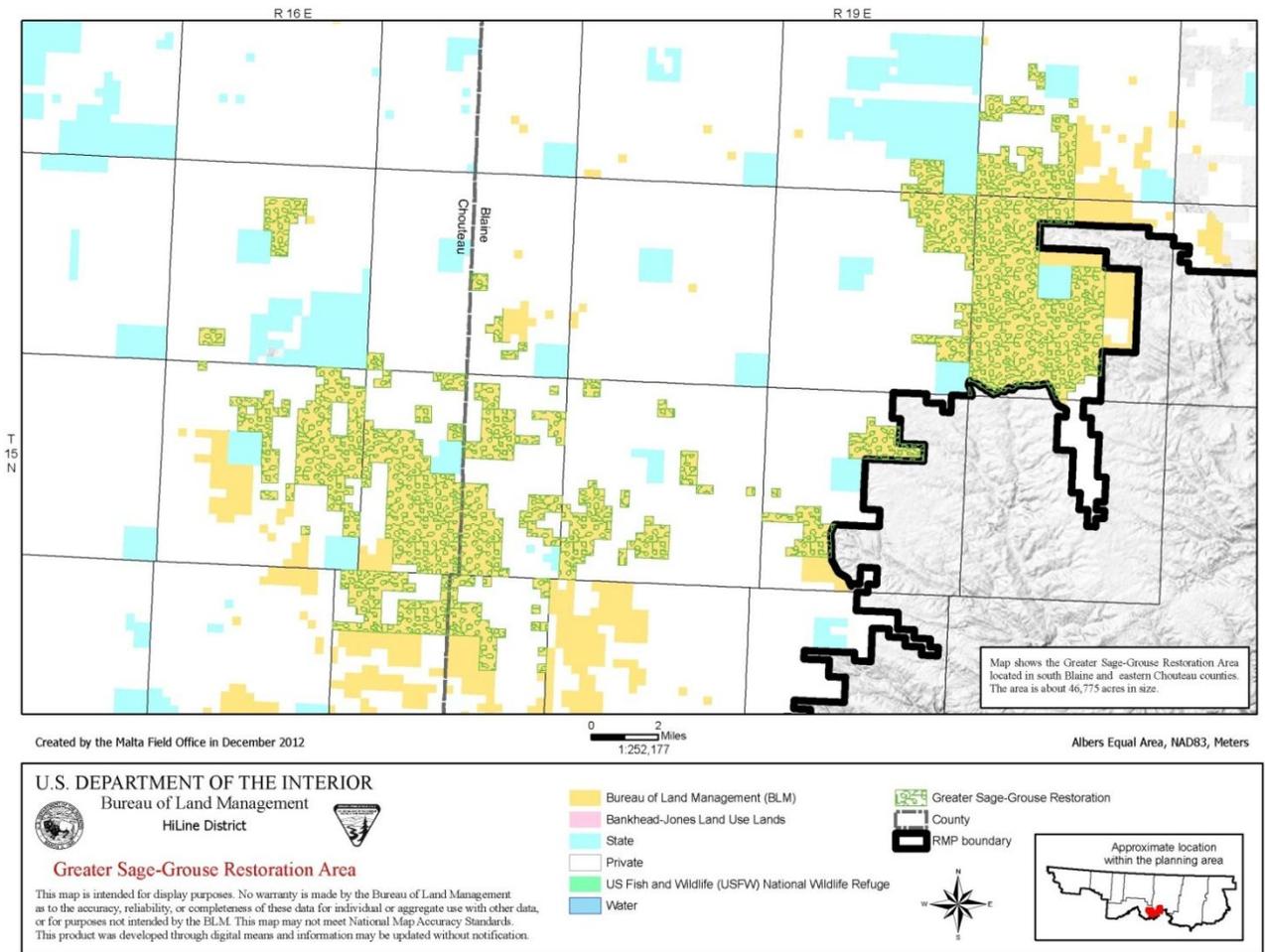
Greater Sage-Grouse

Photo by Craig Miller

Specific management for this area would be addressed through plan implementation, most likely a natural gas field development plan for the Bears Paw South Area (see Appendix E, Map E.1). Management actions addressed during implementation would be based on guidance contained in Instruction Memorandum MT-2010-017 and may include:

- Maximizing the area of interim reclamation on roads and well locations.
- Direct planting of seedlings of shrubs and forbs important for spring and summer food.
- Seeding of wild collected shrub seed to increase nesting habitat.
- Burying powerlines to prevent predator perch sites.

**Figure 2.8**  
**Greater Sage-Grouse Restoration Area**



**Mountain Plover:** The following management actions would apply to protect mountain plover habitat and to maintain regional mountain plover populations:

- Mountain plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within mountain plover habitat (Appendix E.4).
- A timing stipulation would also apply: surface occupancy and use would be prohibited within 1/4 mile of mountain plover habitat from April 1 through July 15 (Appendix E.4).
- Activities for existing oil and gas leases would be managed according to BMPs (Appendix E.2).

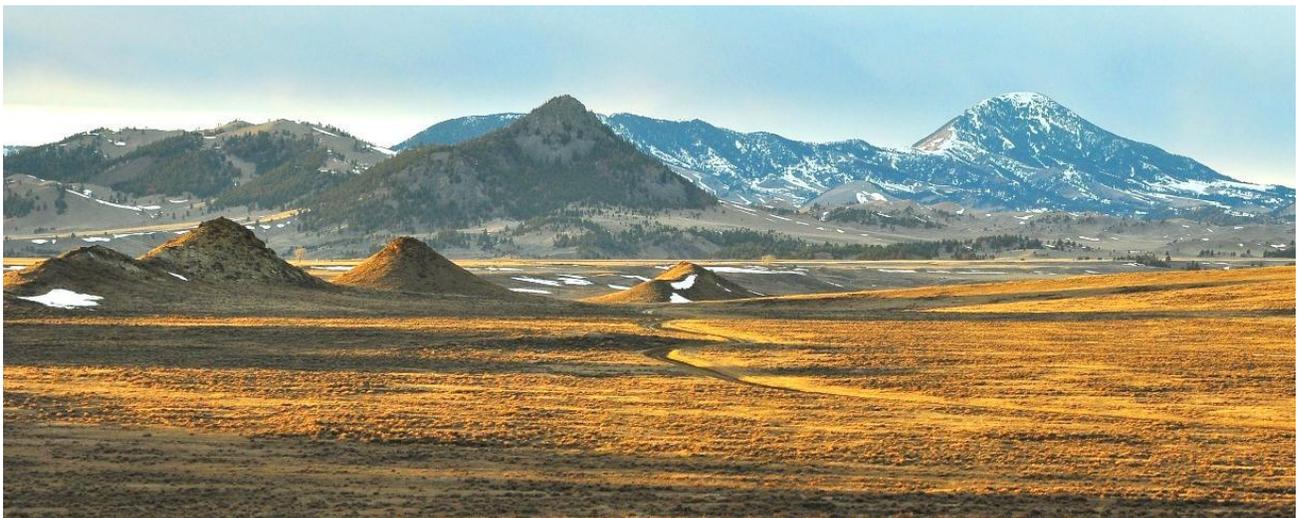
- For surface-disturbing or disruptive activities other than oil and gas, mitigation would be applied where needed to minimize impacts of human activities on mountain plover habitat consistent with the oil and gas surface use restrictions. The BLM would avoid permanent above-ground structures that may provide perches for avian predators or deter plover from using preferred habitat. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of mountain plovers. This would include surveys for mountain plovers in all suitable habitat, as well as avoidance of nesting areas from April 1 through July 15. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level.
- Road maintenance in mountain plover habitat would not occur between April 1 and July 15 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.
- The BLM would reduce or control non-native grasses to increase breeding habitat, and prescribed burning could be used to increase the availability of nesting habitat, particularly on lands where taller or non-native grasses occur.
- The BLM would promote integrated pest management practices that limit chemical applications in mountain plover habitat.

**Piping Plover:** The following management actions would apply to protect piping plover habitat and maintain regional piping plover populations:

- Piping plover habitat would include an NSO stipulation for oil and gas leasing: surface occupancy and use would be prohibited within 1/4 mile of essential and critical habitat (Appendix E.4).
- Road maintenance in piping plover habitat would not occur between April 1 and July 31 unless the road is surveyed prior to maintenance activities for plover presence and avoidance measures are implemented.

**Sprague's Pipit:** The following management actions would apply to protect Sprague's pipit habitat:

- Sprague's pipits would be protected through management actions for the Grassland Bird/Greater Sage-Grouse Priority Areas.
- A timing stipulation would apply to areas within Sprague's pipit habitat: Surface occupancy and use would be prohibited from April 15 through July 15 (Appendix E.4).



Bears Paw Mountain, Chouteau County

Photo by Craig Miller

## Implementation and Monitoring Process

The implementation and monitoring process for the planning area involves four major steps: planning; implementing; monitoring; evaluating and adjusting as necessary through planning. Planning involves a great amount of time and resources to identify issues and management opportunities to address those issues. During the planning process, the scope of the issue is identified and management goals, objectives and actions are defined to address the issues. Once the planning process is completed, decisions are implemented, monitored, and evaluated over a period of time to determine if goals are being met and if management actions are achieving the desired objective or standard. Results of monitoring are documented and communicated to appropriate parties, and management objectives and actions are modified, if necessary, based on results.

The BLM will review monitoring results on a periodic basis, and any management objectives or actions that may need to be changed or adjusted will be open to public review and comment before decisions are made through an environmental review process. Appendix A provides more information on implementation and monitoring. Appendix M.2 provides specific guidance for monitoring sage-grouse and sagebrush habitats. Through implementation an adaptive management approach may also be used for specific activities in the planning area, if appropriate, consistent with Secretarial Order 3270 (Adaptive Management). Adaptive management would require activity level planning, environmental review, and public involvement.

All proposed actions in the future must conform to the HiLine RMP and Record of Decision when completed (43 CFR 1601.0-5(b)). Proposed actions on or affecting BLM land must also be reviewed for National Environmental Policy Act (NEPA) compliance. Proposed actions fall into one of five categories: (1) actions that are exempt from NEPA; (2) actions that are categorically excluded; (3) actions that are covered by an existing NEPA environmental document; (4) actions that require preparation of an environmental assessment (EA) to determine if an environmental impact statement (EIS) is needed; or (5) actions that require preparation of an EIS.

The NEPA procedural, documentation, and public involvement requirements are different for each category. However, all proposed actions must be in conformance with the approved resource management plan. For additional information, please refer to BLM Handbook H-1790-1 available at most BLM offices or on the BLM website at:

[http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning\\_general.Par.2116.File.dat/Handbook.NEPA.H-1790-1.2k8.01.30\[1\].pdf](http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning_general.Par.2116.File.dat/Handbook.NEPA.H-1790-1.2k8.01.30[1].pdf).

### Adaptive Management

Adaptive management [is a decision process that] promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognized the importance of natural variability in contributing to ecological resilience and productivity. It is not a ‘trial and error’ process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meeting environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders.

Source: Williams, B.K., R.C. Szaro, and C.D. Shapiro. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

## Alternatives Considered but Not Analyzed in Detail

### Conservation Groups Alternative

During the range-wide scoping effort for sage-grouse, several conservation organizations submitted scoping comments and proposed management actions and alternatives for sage-grouse conservation (referred to here as the Conservation Groups Alternative). In summary, the primary intent of these proposed alternatives and management actions was to: (1) add additional measures (beyond those conservation measures identified in the National Technical Team (NTT) report (disseminated by BLM WO-IM-2012-044)) in order to maintain and increase sage-grouse abundance; (2) designate two additional habitat types – Greater Sage-Grouse Areas of Critical Environmental Concern (ACECs) and “restoration” habitat areas; and (3) expand NTT conservation measures to all occupied sage-grouse habitat.

These proposed actions and alternatives submitted by the conservation organizations were determined to have substantially similar effects to the actions and habitat areas considered within the range of alternatives identified above. As described in the Wildlife, Special Status Species section of Chapter 2, this Proposed RMP/Final EIS delineates four types of sage-grouse habitat areas as part of the planning process, including: Sagebrush Focal Areas, Priority Habitat Management Areas, Greater Sage-Grouse Restoration Area, and Greater Sage-Grouse General Habitat Management Areas (see Maps 2.17 and 2.18). Varying degrees of management are considered and analyzed as part of the range of alternatives within each of these habitat delineations in this Proposed RMP/Final EIS in order to achieve the goals or objectives for each sage-grouse habitat area, as well as address the conservation measures and management practices to conserve Greater Sage-Grouse consistent with the NTT report. Additionally, this Proposed RMP/Final EIS includes Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). The appendix identifies best practices, design features and proactive management activities to conserve Greater Sage-Grouse that would be applied during project-specific activities through subsequent environmental review and analysis. Appendix M also includes Monitoring of Sage-Grouse and Sagebrush Habitats, the COT Consistency Report, Greater Sage-Grouse Mitigation, Lek Buffers, Required Design Features, and an Effects Analysis Process.

Specific to the organizations' proposed alternative to designate sage-grouse ACECs and 'restoration' areas, this Proposed RMP/Final EIS does include, within the range of alternatives for detailed study, a Greater Sage-Grouse Priorities Area ACEC and Greater Sage-Grouse Protection Priority Area ACEC (Alternative B), and a restoration area for Greater Sage-Grouse (Alternative E). The Alternative Summary Table 2.28 provides a summary of the range of acreages for priority, general, and restoration habitat for Greater Sage-Grouse and a summary of the range of alternatives (e.g., allowable uses, constraints, etc.). This range of alternatives is adequate to compare impacts to Greater Sage-Grouse from different conservation measures as well as the size of habitat classifications.

In summary, the additional alternatives and actions proposed through the Conservation Groups Alternative were considered but eliminated from detailed study in this Proposed RMP/Final EIS because the range of alternatives adequately addresses conservation measures for Greater Sage-Grouse. For example, the alternatives range from open to fluid mineral leasing and right-of-way development, to a no-lease stipulation for new oil and gas development and exclusion areas for rights-of-way.

## Master Leasing Plan

During preparation of the HiLine RMP, the BLM issued WO IM No. 2010-117 in May 2010, which introduced the Master Leasing Plan (MLP) concept. In July 2010, The Wilderness Society submitted a proposal for an MLP for an area called the Bitter Creek/Frenchman Breaks in northern Phillips and Valley Counties.

The BLM reviewed this proposal and determined that the Bitter Creek/Frenchman Breaks did not meet all four of the criteria as required by WO IM No. 2010-117 and the proposal does not warrant preparation of an MLP (Appendix E.1). The preparation of an MLP is required when all four of the following criteria are met: (1) a substantial portion of the area is not currently leased; (2) a majority of the area has federal mineral interest; (3) the area has a moderate or high potential for oil and gas; and (4) additional analysis is needed to address likely impacts if oil and gas development were to occur. The MLP proposal for Bitter Creek/Frenchman Breaks only meets criteria (1) and (2).

- About 582,000 acres of federal minerals are within the proposed MLP. However, 61,000 acres are within the Bitter Creek WSA and are not available for oil and gas leasing. Currently, about 140,000 acres are leased, or 24% of the federal minerals. A substantial portion of the area is not currently leased.
- The area submitted as a proposal includes about 1 million acres, including 582,000 acres of federal minerals. A majority of the area has federal mineral interest (56% of the area is federal minerals).
- The oil and gas industry has expressed some interest in leasing in the area. Some leasing has been deferred in the area pending completion of the HiLine RMP. None of the area is considered to have high development potential as defined in the reasonable foreseeable development scenario (Appendix E.1). About 2% of the area is considered to have moderate development potential. The remainder of the area is considered to have low to very low development potential. The southwestern portion of the area is within the Bowdoin Dome area, which was established in 1954. In the last 10 years, 47 wells have been drilled in the area of which 39 were drilled

within the Bowdoin gas field. All 39 were completed as producing gas wells. The other 8 wells were drilled outside of the Bowdoin gas field, and all 8 were dry holes. Therefore, there is not a discovery outside of the Bowdoin Dome area.

- Oil and gas lease stipulations within the range of alternatives considered in the RMP address this area including those management actions for the Frenchman Breaks ACEC, the grassland bird priority area, and crucial winter range. This planning process involves a great deal of information and analysis to illustrate the environmental consequences of oil and gas development. There is no identified need for additional analysis or information to address likely resource or cumulative impacts.

## No Bison Grazing

A no bison grazing alternative was considered but eliminated from detailed study because it does not meet the purpose and need for this Proposed RMP/Final EIS.

Bison in private ownership are considered livestock, and as such can be permitted by the BLM (43 CFR 4130.3-2(e)). The primary test in making this distinction is whether or not the owner of the animals qualifies as an applicant under the requirements of the grazing regulations. The grazing regulations define qualified applicants and apply equally to all qualified applicants, regardless of the class of livestock.

Privately owned bison may be authorized to graze under the regulations provided it is consistent with multiple use-sustained yield objectives. No scientifically and/or resource management based reason has been identified for why bison should not be permitted to graze BLM land. At the present time, there are no conflicts identified with other resource objectives if bison were permitted to graze. Implementation of a no bison grazing alternative is not considered reasonable or necessary.

As with other classes of livestock, bison grazing may not be permitted where environmental review indicates conflict with resource objectives and attainment of Standards for Rangeland Health.

## No Livestock Grazing/Reduced Grazing

### *Analyzing an Alternative that makes all Lands or a Reduction of Lands in the Planning Area Unavailable for Livestock Grazing (No Grazing / Reduced Grazing Alternative)*

The BLM considered but did not analyze in detail an alternative that would make all and/or a reduction of public lands within the planning area unavailable for livestock grazing. As noted in Chapter 3, only 27 of 969 or less than 3% of HiLine grazing allotments were not meeting rangeland standards attributable to grazing. Consequently, such an alternative may not provide as useful a comparison in the HiLine planning area as in some other planning areas.

NEPA requires that agencies study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources. No issues or conflicts have been identified during this land use planning effort that require the complete elimination of livestock grazing within the planning area for their resolution (WO IM 2012-069). Further, the BLM has considerable discretion through its grazing regulations to determine and adjust stocking levels, seasons-of-use, and grazing management activities during the site-specific permit renewal process.

The HiLine RMP planning area is located in the northern portion of the Great Plains Ecoregion (EPA 2010a) and the rangelands in the planning area are classified as mixed-grass prairie. The rangelands of the Great Plains have a long evolutionary history of grazing and grazing is accepted by grassland ecologists as a keystone process of the grassland ecosystem (Fuhlendorf and Engle 2001, Milchunas, et al. 1988, Knapp et al. 1999). There is also agreement among many scientists and natural resource managers that some level of grazing disturbance is necessary to assure the ecological integrity of the mixed-grass prairie ecosystem (Parks Canada 2002). In addition to the inherent role of large herbivore grazing in maintaining ecosystem health within the planning area, current resource conditions on BLM-administered land, as described earlier, do not support the need for a planning area-wide reduction or prohibition of livestock grazing.

From 1956 through 1972, the BLM conducted a classification of public lands to estimate the amount of available forage within the planning area. These are typically referred to as the “Missouri River Basin Surveys.” From this effort, multiple sub-basin reports were generated, which provided the carrying capacities by Animal Unit Months (AUMs) for all BLM-administered lands at the time of survey.

The measurement of the available forage for livestock grazing was conducted by trained professionals and involved intensive vegetation sampling (clipping, weighing, and ocular estimation). The BLM, in cooperation with grazing advisory boards, used the information to make adjustments to the AUMs allocated to a grazing permit. This cooperative effort resulted in implementation of appropriate changes to grazing permits in the planning areas. These changes were implemented in a timely manner and completed prior to 1975.

These historical grazing allocations have been included in the existing RMPs and allocation of vegetation generally ranges from 25% to 40% for livestock and 60% to 75% for other uses (e.g. wildlife, soil protection, etc.).

Following initial surveyed forage allocations, land health evaluations, inventories and monitoring data (vegetative and levels of use) have been the basis for increasing or decreasing permitted use. Through this process the planning area has changed the grazing allocations on allotments to ensure the healthy ecological systems are provided for future generations.

During the planning process for this RMP, the BLM issued WO IM No. 2012-169, which governs alternative development with respect to livestock grazing in RMPs and their associated EISs. In accordance with that IM and the BLM Land Use Planning Handbook, the BLM considered what range of alternatives was necessary to address unresolved conflicts among available resources. Although IM 2012-169 recognizes that RMPs would usually include one or more alternatives with a meaningful reduction in either lands available for grazing, forage amounts, or both, in the circumstances presented here such alternatives are not reasonable or necessary.

In particular, of the 969 allotments in the planning area that have been assessed, 907 meet the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota (BLM 1997a). For the 62 allotments not meeting one or more standard, past or present livestock uses were determined to be a causal factor on 27 allotments and in all cases corrective actions have been taken. All allotments within priority sage-grouse habitat are currently meeting Rangeland Health Standards. Suitable measures, which could include reduction or elimination of livestock grazing, could become necessary in specific situations where livestock grazing causes or contributes to conflicts with the protection and/or management of other resource values or uses. Such determinations would be made during site-specific activity planning or permit renewal and the associated environmental review. These determinations would be based on several factors, including monitoring studies, review of current range management science, input from livestock operators and interested parties, and ability to meet the Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Appendix H).

Alternatives that included no grazing or reduced grazing were previously analyzed in detail in the Missouri Breaks Grazing Environmental Impact Statement (BLM 1979), the Prairie Potholes Environmental Impact Statement (BLM 1982), and the national Rangeland Reform '94 Environmental Impact Statement (BLM 1994b). The first two documents established forage allocation and use levels by allotment and were subsequently reaffirmed by decisions made in the Judith-Valley-Phillips (1992) and West HiLine (1988) RMPs. As no substantial resource issues were identified that warranted a comprehensive change across the planning area, forage allocation and use levels by allotment were carried forward, incorporating ongoing adaptive management that has been used on a site-specific basis as resource issues have been identified.

Livestock grazing is and has been an important use of the public lands in the planning area for many years and is a continuing government program. The CEQ guidelines for compliance with NEPA require that agencies analyze the “No Action Alternative” in all EISs (40 CFR 1502.14(d)). For the purposes of this NEPA analysis, the “no action alternative” is to continue the status quo, which includes livestock grazing. For this reason and those stated above, a no grazing alternative for the entire planning area was dismissed from further consideration in this RMP/EIS.

## Utilize a Backcountry Conservation Area Designation

A Backcountry Conservation Area designation (or allocation or emphasis area) was proposed by the Theodore Roosevelt Conservation Partnership (TRCP), “to conserve, maintain, restore and enhance the conservation value of identifiable areas of BLM administered public lands that are generally intact, appear generally undeveloped, contain important habitats for fish and wildlife species of conservation need, and provide dispersed outdoor recreation opportunities.” The intention of a BCA designation is to “give conservation identity and supportive core management policies to important habitats and recreationally important identifiable areas across BLM administered backcountry public lands that are generally intact and appear generally undeveloped.”

The BLM reviewed this proposal and determined that almost all of the areas proposed by TRCP for a Backcountry Conservation Area (BCA) designation fall within Greater Sage-Grouse Priority Habitat Management Areas, the proposed Frenchman Breaks ACEC, the Sagebrush Focal Areas, or areas to be managed for wilderness characteristics. The management prescribed in the Preferred Alternative of the Proposed RMP/Final EIS will maintain the relatively undeveloped nature of these areas, which will conserve important wildlife habitat and provide dispersed outdoor recreation opportunities. Given the designations recommended in the Proposed RMP, the additional designation of BCAs is unnecessary and would add little to the conservation and future management of these lands.

## Comparison of Alternatives and Environmental Consequences

A summary comparison of all the alternatives discussed in Chapter 2 follows in Table 2.28. This table summarizes the major land use plan decisions including the allowable uses and actions described in Chapter 2 but does not include all the management actions included under each alternative. A summary comparison of the environmental consequences discussed in Chapter 4 follows in Table 2.29, and a summary comparison of alleviated threats to Greater Sage-Grouse is presented in Table 2.30. These summary tables provide a comparative form for defining the differences among the alternatives.



Sweet Grass Hills

Photo by Craig Miller

<b>Table 2.28 Summary Comparison of Alternatives</b>					
<i>Please note: This is a summary only and highlights the major differences between the alternatives in a comparative form. The complete description of the alternatives including goals, objectives, and management actions can be found in Chapter 2.</i>					
<i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i>					
<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Air Resources</b>					
Air Quality	Actions authorized on BLM land would comply with the Clean Air Act requirements, including the State of Montana Air Quality Implementation Plan, through the use of BMPs and the Air Resource Management Plan. Prescribed burns would be managed to comply with Montana DEQ smoke management rules and regulations.				
<b>Cultural Resources – Traditional Cultural Properties (TCP)</b>					
<i>Little Rocky Mountains TCP (30,648 acres)</i>					
Oil and Gas Leasing	NHPA requirements	NSO			NSO (5,936 acres) Closed (32,166 acres)
Rights-of-Way (ROWs)	Open				Avoidance area
Wind Energy ROWs	Open		Exclusion area		
Solid Minerals Leasable	Open	Closed	Closed	Closed	Open (5,458 acres) Closed (32,058 acres)
Locatable	Open	Withdrawn	Open	Open	Open
Salable	Open	Open	Open	Closed	Open (5,332 acres) Closed (32,055 acres)
<i>Sweet Grass Hills TCP (7,718 acres)</i>					
Oil and Gas Leasing	NSO				Closed
Rights-of-Way (ROWs)	Open				Avoidance area
Wind Energy ROWs	Open		Exclusion area		
Solid Minerals Leasable	Open	Closed		Closed	Closed
Locatable	Withdrawn	Withdrawn		Open	Withdrawn
Salable	Open	Open		Closed	Closed
<b>Fire Management and Ecology (Categories)</b>					
<i>Category B</i>	2,244,429 acres		395,092 acres		1,390,208 acres
<i>Category C</i>	193,046 acres		2,042,382 acres		1,047,266 acres

<b>Table 2.28</b> <b>Summary Comparison of Alternatives</b>					
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<b>Fish</b>					
Aquatic Habitats	High value fisheries would be evaluated to determine the need for fencing to promote riparian vegetation.	New reservoirs would be analyzed for fish habitat potential. New and existing designated fishing reservoirs would be maintained and/or improved. All fishing reservoirs would be maintained as fisheries with MFWP concurrence. Fish stocking would be coordinated with MFWP. To the extent possible, roads would be located, designed and maintained to reduce sedimentation, identify and remove unnatural barriers, eliminate fish passage barriers, and maintain/restore riparian vegetation.			
<b>Fluid Minerals</b>					
Open to leasing: NSO stipulation	282,062 acres (8%)	258,560 acres (7%)	1,291,160 acres (37%)	357,456 acres (10%)	1,711,378 acres (49%)
Open to leasing: CSU/TLS stipulation	2,649,241 acres (76%)	3,291 acres (<1%)	1,681,990 acres (48%)	2,461,652 acres (71%)	1,460,097 acres (42%)
Open to leasing: Standard lease terms	457,849 acres (13%)	55,962 acres (2%)	299,713 acres (9%)	597,668 acres (17%)	167,274 acres (5%)
Closed to leasing	102,298 acres (3%)	3,173,637 acres (91%)	218,586 acres (6%)	74,674 acres (2%)	152,702 acres (4%)
<b>Forests and Woodlands</b>					
Forest Product Sales	The ASQ would not exceed 350 MBF/year.	The probable sale quantity (PSQ) of timber is 664 MBF per year along with 4,000 tons of biomass per year. The PSQ does not include quantities due to salvage timber activities from wildfire, insect, or weather events. Management of old growth stands would follow USFS overall guidance and direction.			
Sweet Grass Hills ACEC	Would not be available for sale of commercial wood products.	A full range of forest health treatments would be allowed, and could include sale of wood products. The ACEC would not be open for incidental personal use wood products.			
<b>Lands and Realty</b>					
<b>Land Ownership Adjustment</b>					
Category 1 - Retention	N/A	610,678 acres	484,805 acres	332,283 acres	297,559 acres
Category 2 – Retention/ Limited Disposal	90,114 acres	1,813,668 acres	1,939,218 acres	2,074,881 acres	2,126,465 acres
Category 3 – Disposal		13,541 acres	13,541 acres	30,310 acres	13,541 acres
<b>Access</b>					
Legal Public or Administrative Access	Case-by-case basis as the need or opportunity arises.				
	Focus on areas with important resource values.	Focus on Category 1 and 2 lands where no legal public access exists or where additional access is necessary to meet management objectives.			

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<b>Facilities</b>					
Recreation Sites, Administrative Sites, Buildings and Communication Towers	Recreation sites, administrative sites, buildings and communication towers would be maintained within Bureau standards to reduce deferred maintenance costs and meet public health and safety requirements. Comprehensive condition assessments would be conducted for all maintained facilities and maintenance actions would be implemented if necessary. These activities would be coordinated with other federal, state, and local government agencies, private landowners and the general public as needed. Existing and new facilities would be managed through FAMS.				
<b>Rights-of-Way (Individual exclusion and avoidance areas are identified in Chapter 2, Table 2.11.)</b>					
Corridors	1 corridor (4 1/2 miles wide)	5 corridors (1 mile wide)	5 corridors (2 miles wide)	No designated corridors	5 corridors (1 mile wide)
Exclusion Areas	2 areas	4 areas	3 areas	2 areas	2 areas
Avoidance Areas	2 areas	15 areas	17 areas	13 areas	19 areas
<b>Livestock Grazing</b>					
Lands Available for Livestock Grazing	Livestock would continue to be allocated approximately 386,600 AUMs of forage each year. Approximately 2,390,000 acres would be open to livestock grazing and 47,000 acres would be closed to livestock grazing except as needed for resource management. Actions consistent with achieving or maintaining the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota would continue to be incorporated into livestock grazing permits and leases and would apply to all livestock grazing activities.				
Newly Acquired Lands	Grazing allocations on newly acquired land would be based on management needs and objectives for the acquisition.	Newly acquired lands would be evaluated to determine if they should be designated as reserve common allotments, allocated for grazing, or designated as unavailable for livestock grazing in consideration of the management needs and objectives for the acquisition.		Newly acquired lands would be allocated for grazing.	Newly acquired lands would be evaluated to determine if they should be designated as reserve common allotments, allocated for grazing, or designated as unavailable for livestock grazing in consideration of the management needs and objectives for the acquisition.
Grazing Preference Relinquishment/Reserve Common Allotments	N/A	Where grazing preference is relinquished or cancelled within the Greater Sage-Grouse Protection Priority Area ACEC and/or the Grassland Bird/Greater	Where grazing preference is relinquished or cancelled allotments would remain available for livestock grazing and evaluated to determine if they should be	Where grazing preference is relinquished or cancelled allotments would be made available for qualified applicants.	Allotments within priority habitat areas for sage-grouse where grazing preference is relinquished or cancelled would be evaluated in a site-specific

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		<p>Sage-Grouse Priority Areas ACEC, retirement of grazing privileges would be considered in a site-specific environmental analysis that addresses the potential impacts (both positive and negative) to Greater Sage-Grouse. If the analysis does not support closing the allotment to grazing for the benefit of sage-grouse, the allotment would remain available for livestock grazing and would be designated as a reserve common allotment.</p> <p>All allotments wholly located in the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC or Greater Sage-Grouse Protection Priority Area ACEC would be considered for retirement where the base property owner relinquishes their preference.</p> <p>Allotments outside of priority sage-grouse habitat would remain available for livestock grazing and designated as reserve</p>	<p>designated as reserve common allotments or reassigned.</p> <p>All allotments wholly located in the Grassland Bird/Greater Sage-Grouse Priority Areas or Greater Sage-Grouse Protection Priority Area habitat would be considered for retirement where the base property owner relinquishes their preference.</p>		<p>NEPA document to determine if they should be closed to grazing, designated as reserve common allotments, or reassigned.</p> <p>All allotments wholly located in the Grassland Bird/Greater Sage-Grouse PHMA or Greater Sage-Grouse PHMA would be considered for retirement where the base property owner relinquishes their preference.</p> <p>Where grazing preference is relinquished or cancelled outside of priority sage-grouse habitat, allotments would remain in active use and available for livestock grazing. These allotments could be evaluated to determine if they should be designated as reserve common allotments.</p>

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		common allotments.			
Yearling Factors	Would be considered through individual AMPs.	Would not be considered.	Would be considered within the framework outlined in Appendix I.		
<b>Noxious Weeds and Other Invasive Non-Native Species</b>					
Noxious Weeds	Montana state and county designated noxious weeds would be managed according to current federal, state, and local weed management plans. BLM would continue cooperative agreements with state and county entities and would coordinate with other federal, state, and county agencies, weed management areas, and private landowners and organizations. Weed seed free forage would be used on BLM land.				
Invasive Species	Other resource programs would assist in invasive species management through project planning and program implementation, and would include integrating prevention measures in program activities to reduce the spread of invasive species and mitigation measures.				
Pest Management	Pest management including the use of pesticides is conducted on a case-by-case basis.				
<b>Off-Highway Vehicle Use and Travel and Transportation Management</b>					
<b>OHV Area Designations</b>					
Open	124 acres	0 acres	0 acres	305 acres	165 acres
Limited	2,429,930 acres	2,429,971 acres	2,429,930 acres	2,437,169 acres	2,429,889 acres
Closed	7,419 acres	7,504 acres	7,544 acres	0 acres	7,419 acres
<b>Travel Management Areas</b>					
High Priority	27,529 acres	1,515,503 acres	236,893 acres	236,893 acres	1,440,901 acres
Moderate Priority	694,735 acres	270,236 acres	1,262,260 acres	1,262,260 acres	121,440 acres
Low Priority	1,715,311 acres	651,735 acres	938,321 acres	938,321 acres	875,133 acres
<b>Travel and Transportation Management</b>					
Roads, Primitive Roads and Trails	Roads, primitive roads and trails would be maintained in accordance with BLM policy, assigned maintenance intensities (Levels 0-5), consideration of resource issues, and available funding. Existing BLM roads would be managed through FAMS.				
<b>Paleontological Resources</b>					
Locations and Assessments	Identify and prioritize high probability paleontological locations for inventories and information attained would guide management decisions. Paleontological assessments would be completed for all projects proposed on federal lands to determine the need for further paleontological inventories.				
Research and Education	Develop a resource awareness program to enhance public appreciation of paleontological resource values. This includes coordination with permitted universities and museums. Paleontological research and education opportunities would be pursued for high priority areas.				
Collection for Personal Use	The collection of petrified wood and invertebrate fossils for personal use would be allowed as limited by the regulations in areas not specifically closed.				

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<b>Public Safety</b>					
<i>Abandoned Mine Lands</i>	The closure of dangerous inactive and abandoned mine sites would be designed to reduce the risks to human health and safety, restore the environment, and protect geological and cultural resources. Reclamation would be implemented at the highest risk sites first. Where deemed appropriate, the BLM would restore severely impacted soils and watersheds as close as possible to pre-disturbed conditions that support productive plant communities and ensure properly functioning watersheds.				
<i>Hazard Class Dams</i>	Construction and maintenance priorities for hazard class dams would be in conformance with applicable laws and regulations, and BLM policy. Condition assessments and Emergency Action Planning would be performed as required by the latest version of the 9177 (Dam Safety) manual section and associated handbooks. The results of the condition assessments would be reviewed to determine the need for reconstruction, maintenance or disposal.				
<i>Hazardous Materials</i>	The BLM would comply with all federal environmental and safety laws and regulations governing storage, handling, and use of hazardous materials and governing disposal of hazardous waste. The BLM would also comply with state hazardous materials laws and regulations as required. The BLM would promote and support the appropriate use and recycling of hazardous materials in public facilities and on public land to prevent or minimize the generation and disposal of hazardous wastes.				
<b>Recreation</b>					
<i>Recreation Opportunity Spectrum Classes</i>					
Primitive	0 acres	0 acres	0 acres	0 acres	0 acres
Semi-Primitive					
Nonmotorized	7,481 acres	7,566 acres	136,276 acres	0 acres	7,481 acres
Motorized	91,872 acres	474,217 acres	187,503 acres	91,872 acres	393,451 acres
Roaded					
Natural	2,336,762 acres	1,916,104 acres	2,060,410 acres	2,095,626 acres	1,820,446 acres
Modified	125 acres	38,353 acres	52,051 acres	248,742 acres	214,861 acres
Rural	1,234 acres	1,234 acres	1,234 acres	1,234 acres	1,234 acres
<i>Recreation Management Areas (RMAs)</i>					
Special RMAs	5 areas (1,307,741 acres)	0 acres	1 area (27,688 acres)	12 areas (97,088 acres)	2 areas (27,728 acres)
Extensive RMAs	3 areas (1,129,734 acres)	0 acres	9 areas (61,800 acres)	2 areas (244 acres)	10 areas (69,405 acres)
Lands Not Designated	0 acres	2,437,474 acres	2,347,986 acres	2,340,142 acres	2,340,341 acres
<i>Recreation Sites</i>	Manage 70 existing recreation sites and facilities.	Manage 48 recreation sites and facilities. 24 existing fishing reservoir recreation sites would not be managed as recreation sites due to poor habitat and/or insufficient water capacity. Reservoirs that lack water during dry periods would be considered for fish stocking in good water years.	Manage 50 recreation sites and facilities. 24 existing fishing reservoir recreation sites would not be managed as recreation sites due to poor habitat and/or	Manage 49 recreation sites and facilities. 24 existing fishing reservoir recreation sites would not be managed as recreation sites due to poor habitat and/or	Manage 49 recreation sites and facilities. 24 existing fishing reservoir recreation sites would not be managed as recreation sites due to poor habitat and/or

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				insufficient water capacity. Reservoirs that lack water during dry periods would be considered for fish stocking in good water years. In addition to the 48 sites in Alternatives B and C, Timber Creek Ridge and Thirty Mile OHV would be managed as recreation areas.	insufficient water capacity. Reservoirs that lack water during dry periods would be considered for fish stocking in good water years. In addition to the 48 sites in Alternatives B and C, Timber Creek Ridge would be managed as a recreation area.
<b>Renewable Energy Resources</b>					
<b>Wind Energy Rights-of-Way</b>					
Open Areas	2,248,336 acres	6,637 acres	106,182 acres	231,961 acres	33,119 acres
Avoidance Areas	0 acres	239,014 acres	821,335 acres	1,912,095 acres	885,661 acres
Exclusion Areas	189,138 acres	2,191,823 acres	1,509,958 acres	293,418 acres	1,518,695 acres
<b>Soil Resources</b>					
Surface-disturbing Activities	BLM would evaluate effects of proposed surface-disturbing activities using NRCS soil survey data/interpretations and/or through onsite investigation, and would apply mitigation measures/BMPs as necessary, relocate the activity to a more suitable soil type, or deny the authorization. Authorized surface-disturbing activities would include plans for reclamation. Authorization could be denied in areas where erosion cannot be effectively controlled/mitigated and reclamation would likely be unsuccessful.				
<b>Solid Minerals</b>					
<b>Leasable</b>					
Open	3,292,616 acres	1,701,587 acres	1,834,993 acres	3,125,459 acres	1,540,854 acres
Closed	76,477 acres	1,667,506 acres	1,534,100 acres	243,635 acres	1,828,239 acres
<b>Locatable</b>					
Existing Withdrawals	4 areas (19,914 acres)	4 areas (20,058 acres)	4 areas (20,058 acres)	3 areas (387 acres)	4 areas (20,058 acres)
Recommended Withdrawals	2 areas (1,991 acres)	9 areas (1,674,298 acres)	10 areas (1,539,290 acres)	8 areas (184,458 acres)	3 areas (951,766 acres)
<b>Salable</b>					
Open	3,034,777 acres	1,684,708 acres	1,628,967 acres	2,833,469 acres	1,442,563 acres

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Closed	74,506 acres	1,424,575 acres	1,480,316 acres	275,814 acres	1,666,720 acres
<b>Special Designations – Existing ACECs</b>					
<b><i>Azure Cave ACEC (141 acres)</i></b>					
Oil and Gas Leasing	Closed				
Rights-of-Way (ROWs)	Avoidance area				
Wind Energy ROWs	Avoidance area		Exclusion area		
Solid Minerals Leasable Locatable Salable	Open Withdrawn Open	Closed Withdrawn Closed			
<b><i>Big Bend of the Milk River ACEC (1,972 acres)</i></b>					
Oil and Gas Leasing	NSO				
Rights-of-Way (ROWs)	Avoidance area				
Wind Energy ROWs	Avoidance area		Exclusion area		
Solid Minerals Leasable Locatable Salable	Closed Recommend withdrawal Open	Closed Open Open		Closed Open Closed	
<b><i>Bitter Creek ACEC (60,701 acres)</i></b>					
Oil and Gas Leasing	Closed until an ACEC management plan is completed that would address leasing (60,717 acres).				
Rights-of-Way (ROWs)	Northern Border Corridor (4½ mile width)	Northern Border Corridor (1 mile width)	Northern Border Corridor (2 mile width)	Avoidance area (no corridor)	
Wind Energy ROWs	Exclusion area				
Solid Minerals Leasable Locatable Salable	Closed Open Closed	Closed Recommend withdrawal Closed			Closed Open Closed
<b><i>Kevin Rim ACEC (4,557 acres)</i></b>					
Oil and Gas Leasing	NSO within 3 miles from active raptor nests	NSO			

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Rights-of-Way (ROWs)	Avoidance area				
Wind Energy ROWs	Avoidance area	Exclusion area			
Solid Minerals	Open	Closed		Closed	Closed
Leasable	Open	Recommend withdrawal		Recommend withdrawal	Open
Locatable	Open	Open		Closed	Closed
Salable	Open				
<b><i>Mountain Plover ACEC (24,762 acres)</i></b>					
Oil and Gas Leasing	Timing April 1 to July 31	NSO			Closed
Rights-of-Way (ROWs)	Open	Avoidance area			
Wind Energy ROWs	Avoidance area	Exclusion area			
Solid Minerals	Open	Closed		Closed	
Leasable	Open	Recommend withdrawal		Recommend withdrawal	
Locatable	Open	Open		Closed	
Salable	Open				
<b><i>Prairie Dog Towns within the 7km Complex ACEC (16,392 acres)</i></b>					
Designation	BLM would retain the ACEC (16,392 acres).	BLM would not retain the ACEC. Management of prairie dog habitat would be consistent with the Wildlife section of Chapter 2.			
<b><i>Sweet Grass Hills ACEC (7,419 acres)</i></b>					
Oil and Gas Leasing	NSO				Closed
Rights-of-Way (ROWs)	Open	Avoidance area			
Wind Energy ROWs	Open	Exclusion area			
OHV Use	Closed			Open	Closed
Solid Minerals	Open	Closed		Closed	Closed
Leasable	Withdrawn	Withdrawn		Open	Withdrawn
Locatable	Open	Open		Closed	Open
Salable					
<b>Special Designations – Potential ACECs</b>					
<b><i>Frenchman Breaks ACEC</i></b>					
Designation	The area would not be designated an ACEC.		Designate 42,020 acres	Designate 63,482 acres	Designate 42,020 acres
Oil and Gas Leasing			NSO	NSO	NSO

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Rights-of-Way (ROWs)			Avoidance area	Avoidance area	Avoidance area
Wind Energy ROWs			Exclusion area	Exclusion area	Exclusion area
Solid Minerals Leasable Locatable Salable			Closed Recommend withdrawal Closed	Closed Recommend withdrawal Closed	Closed Open Closed
<b>Grassland Bird/Greater Sage-Grouse Priority Areas ACEC</b>					
Designation	The areas would not be designated an ACEC.	Designate 461,220 acres. Management would be the same as described for the Grassland Bird/Greater Sage-Grouse Priority Areas in the Wildlife Section.	The areas would not be designated an ACEC.		
Oil and Gas Leasing					
Rights-of-Way (ROWs)					
Solar and Wind Energy ROWs					
Solid Minerals Leasable Locatable Salable		Closed Recommend withdrawal Closed			
<b>Greater Sage-Grouse Protection Priority Area ACEC</b>					
Designation	The area would not be designated an ACEC.	Designate 930,265 acres. Management would be the same as described for the Greater Sage-Grouse Protection Priority Area in the Wildlife section.	The area would not be designated an ACEC.		
Oil and Gas Leasing					
Rights-of-Way (ROWs)					
Solar and Wind Energy ROWs					

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Solid Minerals Leasable Locatable Salable		Closed Recommend withdrawal Closed			
<b>Little Rocky Mountains ACEC</b>					
Designation	The area would not be designated an ACEC.			Designate 27,177 acres	The area would not be designated an ACEC.
Oil and Gas Leasing				NSO	
Rights-of-Way (ROWs)				Avoidance area	
Wind Energy ROWs				Exclusion area	
Solid Minerals Leasable Locatable  Salable				Closed Recommend partial withdrawal (15,000 acres) Closed	
<b>Malta Geological ACEC</b>					
Designation	The area would not be designated an ACEC.	Designate 6,153 acres	Designate 6,153 acres		
Oil and Gas Leasing		CSU	CSU		
Rights-of-Way (ROWs)		Avoidance area	Avoidance area		
Wind Energy ROWs		Exclusion area	Exclusion area		
Solid Minerals Leasable Locatable Salable		Closed Recommend withdrawal Closed	Closed Open Closed		
<b>Woody Island ACEC</b>					
Designation	The area would not be designated an ACEC.	Designate 22,411 acres	Designate 32,869 acres		
Oil and Gas Leasing		NSO	NSO		
Rights-of-Way (ROWs)		Avoidance area	Avoidance area		
Wind Energy ROWs		Exclusion area			
Solid Minerals					

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Leasable Locatable Salable			Closed Recommend withdrawal Closed		Closed Open Closed
<b>Zortman/Landusky Mine Reclamation ACEC</b>					
Designation	The area would not be designated an ACEC.	Designate 3,609 acres	The area would not be designated an ACEC.	Designate 2,682 acres	
Oil and Gas Leasing		NSO		Closed	
Rights-of-Way (ROWs)		Avoidance area		Avoidance area	
Wind Energy ROWs		Exclusion area		Exclusion area	
Solid Minerals Leasable Locatable Salable		Closed Recommend withdrawal Closed		Closed Consider withdrawal Open for reclamation materials	
<b>National Historic Trails</b>	BLM would manage National Historic Trails consistent with laws and management plans.				
<b>Special Designations – Other</b>					
<b>Wild and Scenic Rivers</b>	No segments would be recommended for inclusion in the National Wild and Scenic Rivers System.	The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as suitable.	The 1/2 mile segment of the Marias River at the confluence of the Missouri River would be recommended as nonsuitable.		
<b>Wilderness Study Areas</b>	The Bitter Creek and Burnt Lodge WSAs would be managed according to the BLM Manual 6330-Management of BLM Wilderness Study Areas until such time as Congress acts upon the recommendations.				
<b>Vegetation – Rangeland</b>					
Rest Periods from Livestock Grazing	A minimum rest period of 2 growing seasons would be required after any major disturbance to vegetation communities.	Rest periods of less than 2 growing seasons may be desirable in some circumstances, and would be determined by site-specific planning, monitoring and environmental review.			
Sale of Grass Seed or Hay	May be authorized.	Would not be authorized.	May be authorized.		
Water Developments	In the Prairie Potholes area, one water source per	Installed and/or maintained to facilitate control of livestock use of vegetation, support other uses and		In the Prairie Potholes area, one water source per	Installed and/or maintained to facilitate control of

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	section would be the guideline.	protect resource values.		section would be the guideline.	livestock use of vegetation, support other uses and protect resource values.
	Alternate water developments would be considered before constructing reservoirs greater than 5 acre feet in soil subgroups 3 and 4.	Alternative water developments would be emphasized before constructing new pits and reservoirs.		Alternate water developments would be considered before constructing reservoirs greater than 5 acre feet in highly erodible soils with high siltation rates.	Alternative water developments would be emphasized before constructing new pits and reservoirs.
Land Treatments	Additional forage would normally be allocated 75% to watershed and 25% to livestock.	Increased production would be allocated toward accomplishing multiple-use objectives. Additional forage resulting from land treatments could be temporarily allocated 75% to watershed and wildlife, and 25% to livestock.			
	Where there is substantial contribution by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be allocated to livestock.	Where there is substantial contribution by the livestock permittee and no conflicts with wildlife objectives, up to 50% of the additional vegetation may be temporarily allocated to livestock.			
		Outside Greater Sage-Grouse priority habitats, land treatments would be used to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives.			
		Only treatments that conserve, enhance or restore Greater Sage-Grouse and/or grassland bird habitat would be allowed in the Greater Sage-Grouse Protection Priority Area ACEC and the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC.	Within the Greater Sage-Grouse Protection Priority Area and the Grassland Bird/Greater Sage-Grouse Priority Areas, only treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed.	N/A – Priority Areas are not identified under this alternative.	Within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA, treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed as well as treatments that benefit other resources and do not adversely affect Greater Sage-Grouse or their habitat.
Crested Wheatgrass Seedings	Manage existing crested wheatgrass seedings where feasible as spring use	Evaluate crested wheatgrass seedings emphasizing conversion to	Manage existing crested wheatgrass seedings where feasible as spring use pastures to defer native rangeland grazing. Seedings would be maintained for maximum livestock forage production with up to 70% of the production allocated to livestock when soils		

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	pastures to defer native rangeland grazing, except where sagebrush invasion has resulted in important wildlife habitat.	native species on a case-by-case basis.	are stabilized to a satisfactory condition. Additional seedings may be used to consolidate existing scattered stands into manageable units.		
		Where native restoration of old crested wheatgrass seedings is considered, farming and herbicide use could be authorized for up to three years in order to help destroy the old seed bank and improve the success of the native seeding.			
Rehabilitation of Surface Disturbance	Rehabilitate surface disturbances greater than 1/4 acre.	Reclaim surface disturbances greater than 1/10 acre. Range improvement pits and reservoirs would be excluded until abandonment.			
<b>Vegetation – Riparian and Wetland</b>					
Range Improvements/ Water Facilities	Range improvements would be built to support AMPs.	Alternate water facilities would be installed to relieve grazing impacts on riparian areas inside of priority sage-grouse habitat.	Alternate water facilities would be installed to relieve grazing impacts on riparian areas.	Alternate water facilities would be installed to relieve grazing impacts on riparian areas inside of priority sage-grouse habitat.	
Hot Season Grazing	No restrictions.	Grazing techniques and practices would be implemented to reduce hot season (summer) grazing on riparian and meadow complexes within the Greater Sage-Grouse Protection Priority ACEC and the Grassland Bird/Greater Sage-Grouse Priority Areas ACEC.	No restrictions.	Grazing techniques and practices would be implemented to reduce hot season (summer) grazing on riparian and meadow complexes within the Greater Sage-Grouse PHMA and the Grassland Bird/Greater Sage-Grouse PHMA.	
Saline Seeps	Saline seeps would be evaluated on an individual basis to assess the cause, understand the purview, and determine how the seeps should be managed.	Saline seeps that occur as a result of surface-disturbing activities would be prioritized and reclaimed. Surface-disturbing activities with the potential for producing seep areas would be designed with mitigation measures to minimize development of saline seeps.			
Riparian Enclosures	Riparian enclosures would be monitored and	Riparian enclosures would be maintained and	Riparian enclosures would be maintained, monitored, evaluated and/or modified for their intended purpose. If	Riparian enclosures would be maintained and	

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	evaluated for future removal.	monitored to compare differences between areas grazed and ungrazed by livestock.	they no longer serve a resource management purpose they would be removed.		monitored to compare differences between areas grazed and ungrazed by livestock.
Pits/Wetlands	N/A	No pits would be placed in natural wetlands and in some cases pits may be filled in to improve wildlife habitat in natural wetlands.	N/A		No pits would be placed in natural wetlands and in some cases pits may be filled in to improve wildlife habitat in natural wetlands.
<b>Vegetation – Special Status Plants</b>					
Conservation of Special Status Plants	Inventory BLM lands to determine which BLM special status plant species occur on public lands, the condition of the plant populations and their habitats, and how discretionary BLM actions affect those plant species and their habitats.  Site-specific prescriptions may include avoidance of special status plant habitat for ROWs, seasonal timing restrictions for grazing (e.g., limited to no grazing during flowering to seed set for a particular species), no salt or water placement within 0.25 miles of a known special status plant species population, seed collection or transplanting of special status plant species for mitigation.				
<b>Visual Resources</b>					
Class I	74,506 acres	90,032 acres	74,506 acres	74,506 acres	74,506 acres
Class II	342,828 acres	977,396 acres	914,197 acres	127,439 acres	841,087 acres
Class III	58,213 acres	498,298 acres	521,322 acres	584,113 acres	521,868 acres
Class IV	1,961,928 acres	871,748 acres	927,449 acres	1,651,416 acres	1,000,013 acres
<b>Water Resources</b>					
Watershed Control Structures	Maintain some of the Willow Creek Basin watershed control structures in south Valley County for wildlife, riparian and access values.	Watershed control structures would be maintained on a case-by-case basis to meet Standards for Rangeland Health.			Watershed control structures would be maintained on a case-by-case basis to meet Standards for Rangeland Health or public safety concerns.
New Reservoirs	New reservoirs would be evaluated on a case-by-case basis through the environmental review	New reservoirs would not be built where water would inundate highly productive riparian areas and areas of	N/A		New reservoirs would be considered on a site-specific basis through activity planning and

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	process.	important wildlife habitat, such as buffaloberry thickets.			would consider livestock grazing practices, important wildlife habitat, alternate water sources, and the opportunity to replace or repair existing reservoirs.
Produced Water	N/A	Encourage oil and gas operators to develop and implement methods that treat produced water and enable its beneficial use.	Avoid the discharge of produced water from point sources to BLM land, including stream channels and uplands, as a means of disposal.	N/A	Avoid the discharge of produced water from point sources to BLM land, including stream channels and uplands, as a means of disposal.
<b>Wilderness Characteristics</b>					
<i>Areas Managed to Protect Wilderness Characteristics As a Priority Over Other Resource Values and Multiple Uses (See Chapter 2, Table 2.25 for more detailed information.)</i>					
Number	N/A	26 acres	12 areas	0	3 areas
Acres	N/A	386,428 acres	228,395 acres	0	16,393 acres
<i>Acres Managed to Emphasize Other Resource Values and Multiple Uses While Applying Management Restrictions to Reduce Impacts to Wilderness Characteristics (See Chapter 2, Table 2.25 for more detailed information.)</i>					
Acres	N/A	0	75,327 acres	0	290,865 acres
<i>Acres Managed to Emphasize Other Resource Values and Multiple Uses As a Priority Over Protecting Wilderness Characteristics (See Chapter 2, Table 2.25 for more detailed information.)</i>					
Acres	N/A	0	82,706 acres	386,428 acres	92,190 acres
<b>Wildlife</b>					
General Wildlife	The BLM would provide ecological conditions that support wildlife species over the long term and promote maintenance and recovery of federally listed species and BLM sensitive species. The planning area provides for the range of habitat requirements for species by managing for the broad level ecosystem desired conditions.				
Mitigation Measures	The BLM would apply appropriate mitigation measures and conservation actions to BLM-authorized activities to avoid, minimize, rectify, reduce, or compensate for impacts if an evaluation of the project area indicates the presence of important wildlife species, seasonal wildlife habitat, or other resource concerns.				

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	<p>Mitigation of surface-disturbing or disruptive activities would be applied where needed to minimize impacts of human activities on important seasonal wildlife habitats consistent with the oil and gas leasing stipulations. Mitigation measures would be applied on a case-by-case basis during activity level planning if an evaluation of the project area indicates the presence of important wildlife species. Exceptions may be granted by the authorized officer if an environmental review demonstrates that effects could be mitigated to an acceptable level, habitat for the species is not present in the area, or portions of the area can be occupied without affecting a particular species. Exceptions may also be granted where the short-term effects are mitigated by the long-term benefits (e.g., prescribed fire or forest health treatments).</p>				
Mitigation Measures for Greater Sage-Grouse Habitat Management	<p>Consistent with the proposed plan’s goal for Greater Sage-Grouse outlined in Table 2.4, the intent of the HiLine Proposed RMP is to provide a net conservation gain to the species. To do so, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. This is also consistent with BLM Manual 6840 – Special Status Species Management, Section .02B, which states “to initiate protective conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of the need for listing of these species under the ESA.”</p> <p>In undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation.</p> <p>The BLM will establish a Western Association of Fish and Wildlife Agencies (WAFWA) Management Zone Greater Sage-Grouse Conservation Team (hereafter, Team) to help guide the conservation of Greater Sage-Grouse. This Team will develop a WAFWA Management Zone Regional Mitigation Strategy (hereafter, Regional Mitigation Strategy) to inform the mitigation components of NEPA analyses for BLM management actions and third-party actions that result in habitat loss and degradation.</p> <p>The BLM will include the avoidance, minimization, and compensatory recommendations from the Regional Mitigation Strategy in one or more of the NEPA analysis’ alternatives for BLM management actions and third-party actions that result in habitat loss and degradation and the appropriate mitigation actions will be carried forward into the decision.</p> <p>Consistent with the principles identified above, the BLM needs to ensure that compensatory mitigation is strategically implemented to provide a net conservation gain to the species, as identified in the Regional Mitigation Strategy. In order to align with existing compensatory mitigation efforts, this compensatory mitigation program will be implemented at a State-level (as opposed to a WAFWA Management Zone, a Field Office, or a Forest), in collaboration with our partners (e.g., federal, tribal, and state agencies).</p>				
Disturbance Cap	N/A			3% disturbance cap at the Biologically Significant Unit (BSU) and project scale, until the State strategy of 5% for all	

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					lands and all disturbances is fully implemented. The density calculation (an average of 1 facility per 640 acres) applies to energy and mining facilities.
Sagebrush Focal Areas	N/A				The BLM will designate Sagebrush Focal Areas (927,074 acres): (1) recommended for withdrawal; (2) NSO with no WEMs; and (3) prioritized for management and conservation actions, including livestock grazing permits.
<p><b><i>Oil and Gas Lease Stipulations (Note: A Timing Limitation Stipulation (TLS) does not apply to the operation and maintenance of production facilities.)</i></b></p>					
Bald Eagle	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of bald eagle nest sites and winter roost sites active within the last 7 years.	NSO within 1/4 mile of bald eagle nest sites active within the last 7 years.	TLS – Surface occupancy and use is prohibited within 1/2 mile of bald eagle nest sites active within the last 7 years, from January 1 through August 31.	NSO within 1/2 mile of bald eagle nest sites active within the preceding 5 breeding seasons.
Bighorn Sheep Lambing	Standard lease terms only (200 meters and 60 days).	Closed to leasing.	NSO	TLS - Surface occupancy and use is prohibited within bighorn sheep lambing areas from May 1 through June 30.	NSO
Bighorn Sheep Range	Standard lease terms only (200 meters and 60 days).	Closed to leasing.	CSU - Surface-disturbing or disruptive activities within bighorn sheep range would require a plan to	Standard lease terms only (200 meters and 60 days).	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain bighorn sheep

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			avoid or minimize habitat loss from direct and indirect impacts. The plan would be approved by the authorized officer.		habitat would be prepared by the proponent and implemented upon approval by the authorized officer.
Black-footed Ferret	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of black-footed ferret habitat.	NSO within 1/4 mile of black-footed ferret habitat.	NSO within black-footed ferret habitat.	NSO within 1/4 mile of black-footed ferret habitat.
Black-tailed Prairie Dog	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of black-tailed prairie dog habitat.	NSO within 1/4 mile of black-tailed prairie dog habitat.	NSO within black-tailed prairie dog habitat.	NSO within 1/4 mile of black-tailed prairie dog habitat.
Colonial Waterbirds (Surface Occupancy)	NSO within 1/4 mile of a waterbird nesting colony.	Closed to leasing within 1/2 mile of a waterbird nesting colony.	NSO within 1/2 mile of a waterbird nesting colony.	NSO within 1/4 mile of a waterbird nesting colony.	
Colonial Waterbirds (Timing Limits)	Standard lease terms only (200 meters and 60 days).	TLS - Surface occupancy and use is prohibited within 1 mile of a waterbird nesting colony from April 1 through July 15.		TLS - Surface occupancy and use is prohibited within 1/2 mile of a waterbird nesting colony from April 1 through July 15.	
Crucial Elk Winter Range (South Valley County)	NSO	Closed to leasing.	NSO - Surface occupancy and use is prohibited in crucial winter range.	CSU - Surface-disturbing or disruptive activities within crucial winter range would require a plan to maintain functionality of habitat and avoid or minimize habitat loss. This plan would limit the number of disturbed areas (well pads) within crucial winter range to less than 2 well disturbances per 640 acres of crucial winter range. The plan would be approved by the authorized officer.	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain functionality of crucial winter range for big game and/or Greater Sage-Grouse would be prepared by the proponent and implemented upon approval by the authorized officer. Surface-disturbing or disruptive activities would be restricted or prohibited within 0.6 miles from any existing surface-disturbing or disruptive activity.
Crucial Winter Range (antelope, elk, mule deer)	TLS - December 1 through May 15.				

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Elk Calving Grounds	TLS - May 1 through June 30.	Closed to leasing.	Standard lease terms only (200 meters and 60 days).		
Endangered Species Act Section 7 Consultation	The BLM may recommend modifications to or disapprove a proposed activity that would contribute to a need to list plants, animals, or their habitats determined to be threatened, endangered, or other special status species, or that is likely to jeopardize the continued existence of a proposed or listed species or its habitat (Washington Office IM No. 2002-174).				
Grassland Bird/Greater Sage-Grouse Priority Areas	Appropriate resource stipulations.	Closed to leasing within the proposed ACEC.	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain functionality of grassland bird/Greater Sage-Grouse habitat would be prepared by the proponent and implemented upon approval by the authorized officer. Surface-disturbing or disruptive activities would be restricted or prohibited within 0.6 miles from any existing surface-disturbing or disruptive activity.	Appropriate resource stipulations.	NSO.
Greater Sage-Grouse Leks (General Habitat)	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 2 miles of a sage-grouse lek.	NSO within 1 mile of a sage-grouse lek.	NSO within 0.6 miles of a sage-grouse lek.	NSO within 0.6 mile of a sage-grouse lek.
Greater Sage-Grouse Nesting Habitat (General Habitat)	TLS - Avoid nesting areas March 1 through June 15.	Closed to leasing.	CSU - Surface-disturbing or disruptive activities would require specific actions to prevent or minimize disturbance to sage-grouse or their habitat outside of the Greater Sage-Grouse Protection Priority Area.	TLS - Surface occupancy and use is prohibited within 1 mile of leks from March 1 through June 15.	CSU - Surface-disturbing or disruptive activities may be restricted or prohibited within 2 miles of leks. Prior to such activities a plan to maintain functionality of Greater Sage-Grouse habitat would be prepared by the

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					proponent and implemented upon approval by the authorized officer.
Greater Sage-Grouse Protection Priority Area	Appropriate resource stipulations.	Closed to leasing within the proposed ACEC.	CSU - Prior to surface-disturbing or disruptive activities a plan to maintain functionality of Greater Sage-Grouse habitat would be prepared by the proponent and implemented upon approval by the authorized officer. Surface-disturbing or disruptive activities would be restricted or prohibited within 0.6 miles from any existing surface-disturbing or disruptive activity.	Appropriate resource stipulations.	NSO.
Greater Sage-Grouse Winter Range	TLS - December 1 through May 15.	Closed to leasing.	TLS – Surface occupancy and use is prohibited within winter range from December 1 through May 15.	TLS - Surface occupancy and use is prohibited within winter range from December 1 through March 31.	
Interior Least Tern	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of interior least tern occupied habitat.	NSO within 1/2 mile of interior least tern occupied habitat.	NSO within 1/4 mile of interior least tern occupied habitat.	
Mountain Plover (Surface Occupancy)	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/4 mile of mountain plover habitat.	NSO within mountain plover habitat.		
Mountain Plover (Timing Limit)	Standard lease terms only (200 meters and 60 days).	TLS - Surface occupancy and use is prohibited	TLS - Surface occupancy and use is prohibited	Standard lease terms only (200 meters and 60 days).	TLS - Surface occupancy and use is prohibited

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		within 1/2 mile of mountain plover habitat from April 1 through July 31.	within 1/4 mile of mountain plover habitat from April 1 through July 31.		within 1/4 mile of mountain plover habitat from April 1 through July 15.
Pallid Sturgeon	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.				CSU - Prior to surface-disturbing or disruptive activities occurring in or within 1/2 mile of river or stream shorelines identified as pallid sturgeon habitat, a plan to maintain pallid sturgeon habitat would be prepared by the proponent and implemented upon approval by the authorized officer. Any proposed development would require consultation with the USFWS which could result in a revised buffer distance.
Peregrine Falcon	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	Closed to leasing within 1/2 mile of peregrine falcon nests active within the past 7 years.	NSO within 1/4 mile of peregrine falcon nests active within the past 7 years.	CSU – Surface-disturbing or disruptive activities within 1/4 mile of peregrine falcon nests active within the past 7 years would require a plan to maintain the functionality of the nest, avoid or minimize habitat loss, and minimize disturbances to peregrine falcons.	NSO within 1 mile of peregrine falcon nests active within the preceding 7 breeding seasons.
Piping Plover	NSO - 1/4 mile from identified essential habitat	Closed to leasing within 1/2 mile of piping plover	NSO within 1/4 mile of piping plover habitat.	TLS – Surface occupancy and use is prohibited	NSO within 1/4 mile of piping plover habitat.

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	of state and federal sensitive species.	habitat.		within 1/4 mile of piping plover habitat from May 15 through July 31.	
Raptors	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.  Various stipulations (see Table 2.8 in Chapter 2 for specifics).	Closed to leasing within 1/2 mile of raptor nests active within the past 7 years.	NSO within 1/4 mile of raptor nests active within the past 7 years.	CSU – Surface-disturbing or disruptive activities within 1/4 mile of raptor nests active within the past 7 years would require a plan to maintain the functionality of the nest, avoid or minimize habitat loss, and minimize disturbances to raptors.	NSO within 1/4 mile of raptor nests active within the past 7 years.
Raptors (Timing Limits)	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	TLS - Surface occupancy and use is prohibited from March 1 through September 1 within 1 mile of active raptor nest sites.	TLS - Surface occupancy and use is prohibited from March 1 through July 31 within 1/2 mile of active raptor nest sites.	TLS - Surface occupancy and use is prohibited from March 1 through July 31 within 1/4 mile of active raptor nest sites.	TLS - Surface occupancy and use is prohibited from March 1 through July 31 within 1/2 mile of active raptor nest sites.
Sharp-tailed Grouse (leks)	NSO - 500 feet from strutting grounds.	Closed to leasing within 1/2 mile of sharp-tailed grouse leks.	NSO within 1/4 mile of sharp-tailed grouse leks.	CSU – Surface-disturbing or disruptive activities within 1/4 mile of sharp-tailed grouse leks would require a plan to maintain the functionality of the lek, avoid or minimize habitat loss, and minimize disturbances to sharp-tailed grouse.	NSO within 1/4 mile of sharp-tailed grouse leks.
Sharp-tailed Grouse (nesting habitat)	TLS - March 1 through June 30 within 500 feet of a sharp-tailed grouse nest.	TLS - Surface occupancy and use is prohibited from March 15 through June 30 within 1 mile of sharp-tailed grouse leks.	TLS - Surface occupancy and use is prohibited from March 15 through June 30 within 1/2 mile of sharp-tailed grouse leks.	TLS - Surface occupancy and use is prohibited from March 15 through June 30 within 1/4 mile of sharp-tailed grouse leks.	TLS - Surface occupancy and use is prohibited from March 15 through June 30 within 1/2 mile of sharp-tailed grouse leks.

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Special Status Species	NSO - 1/4 mile from identified essential habitat of state and federal sensitive species.	NSO within 1/4 mile of essential habitat of special status species unless other species-specific stipulations apply.			CSU - BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid activities that would contribute to a need to list such a species or their habitat.
Sprague’s Pipit	Standard lease terms only (200 meters and 60 days).	Closed to leasing within Sprague’s pipit habitat.	Standard lease terms only (200 meters and 60 days).		TLS – Surface occupancy and use is prohibited from April 15 through July 15 in Sprague’s pipit habitat.
Swift Fox (Lonesome Lake)	CSU - 1/2 mile from swift fox dens.	Standard lease terms only (200 meters and 60 days).			
Winter Range (antelope, elk, mule deer)	TLS - December 1 through May 15.	Closed to leasing.	TLS – Surface occupancy and use is prohibited within winter range from December 1 through May 15.	TLS - Surface occupancy and use is prohibited within winter range from December 1 through March 31.	TLS - Surface occupancy and use is prohibited within winter range from December 1 through May 15.
<b>Grassland Bird/Greater Sage-Grouse Priority Areas</b>					
Priority Areas	N/A – Priority Areas are not identified under this alternative.	4 areas (461,220 acres) managed as one ACEC.	2 areas (298,772 acres)	N/A – Priority Areas are not identified under this alternative.	1 area (426,355 acres)
Fluid Minerals		Closed	CSU		NSO
Rights-of-Way (ROWs)		Exclusion area	Avoidance area		Avoidance area
Solar and Wind Energy ROWs		Exclusion area	Exclusion area		Exclusion area
Solid Minerals Locatable Leasable Salable		Recommend Withdrawal Closed Closed to new permits	Recommend Withdrawal Closed Closed		Open Closed Closed to commercial; open to free use.

<b>Table 2.28 Summary Comparison of Alternatives</b>					
<i>Please note: This is a summary only and highlights the major differences between the alternatives in a comparative form. The complete description of the alternatives including goals, objectives, and management actions can be found in Chapter 2.</i>					
<i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i>					
<b>Resource</b>	<b>Alternative A (Current Management)</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Preferred Alternative)</b>
<b>Greater Sage-Grouse General Habitat Areas</b>					
Solar and Wind Energy ROWs	Open	Exclusion area	Avoidance area	Open	Avoidance area
<b>Greater-Sage-Grouse Protection Priority Area</b>					
Protection Priority Areas	N/A – Protection Priority Areas are not identified under this alternative.	1 area (930,265 acres) managed as an ACEC.	1 area (930,265 acres)	N/A – Protection Priority Areas are not identified under this alternative.	1 area (1,006,312 acres)
Fluid Minerals		Closed	CSU		NSO
Rights-of-Way (ROWs)		Exclusion area	Avoidance area		Avoidance area
Solar and Wind Energy ROWs		Exclusion area	Exclusion area		Exclusion area
Solid Minerals Locatable Leasable Salable		Recommend Withdrawal Closed Closed to new permits	Recommend Withdrawal Closed Closed		Open Closed Closed to commercial; open to free use.



<b>Table 2.29 Summary Comparison of Environmental Consequences</b>					
<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
<b>Air Resources</b>					
Criteria Air Pollutants and Volatile Organic Compounds	4,210 tons per year (tpy), of which 65% would be from oil and gas activities.	2,500 tpy, of which 37% would be from oil and gas activities.	4,146 tpy, of which 62% would be from oil and gas activities.	4,351 tpy, of which 64% would be from oil and gas activities.	3,929 tpy, of which 60% would be from oil and gas activities.
Greenhouse Gases	449,890 metric tons per year (mtpy) CO <sub>2</sub> e, of which 28% would be from oil and gas activities.	365,948 mtpy CO <sub>2</sub> e, of which 11% would be from oil and gas activities.	442,001 mtpy CO <sub>2</sub> e, of which 27% would be from oil and gas activities.	451,684 mtpy CO <sub>2</sub> e, of which 28% would be from oil and gas activities.	431,959 mtpy CO <sub>2</sub> e, of which 25% would be from oil and gas activities.
<b>Cultural Resources</b>					
Fluid Minerals	<p>102,298 acres would be closed to leasing, including 27,768 acres in the Little Rocky Mountains TCP.</p> <p>An NSO stipulation would be placed on 282,062 acres, including Big Bend of the Milk River ACEC (1,979 acres); Kevin Rim ACEC (4,564 acres); and Sweet Grass Hills ACEC (6,248 acres).</p> <p>Remaining area available for leasing (3,107,090 acres) would require mitigation through Section 106 of NHPA.</p>	<p>3,173,637 acres would be closed to leasing, including 40 acres near the Bear Paw Battlefield.</p> <p>An NSO stipulation would be placed on 258,560 acres, including Big Bend of the Milk River ACEC (1,979 acres); Kevin Rim ACEC (4,564 acres); Sweet Grass Hills TCP (21,275 acres); Little Rocky Mountains TCP (38,102 acres); and National Register eligible properties (1,497 acres).</p> <p>Remaining area available for leasing (59,253 acres) would require mitigation through Section 106 of</p>	<p>218,586 acres would be closed to leasing, including 40 acres near the Bear Paw Battlefield.</p> <p>An NSO stipulation would be placed on 1,291,160 acres, including Big Bend of the Milk River ACEC (1,979 acres); Kevin Rim ACEC (4,564 acres); Sweet Grass Hills TCP (21,275 acres); Little Rocky Mountains TCP (38,102 acres); and National Register eligible properties (1,497 acres).</p> <p>Remaining area available for leasing (1,981,704 acres) would require mitigation through Section</p>	<p>74,674 acres would be closed to leasing.</p> <p>An NSO stipulation would be placed on 357,456 acres, including Big Bend of the Milk River ACEC (1,979 acres); Kevin Rim ACEC (4,564 acres); Sweet Grass Hills TCP (21,275 acres); Little Rocky Mountains TCP (38,102 acres); and National Register eligible properties (1,497 acres).</p> <p>Remaining area available for leasing (3,059,320 acres) would require mitigation through Section 106 of NHPA.</p>	<p>152,702 acres would be closed to leasing, including 21,275 acres in the Sweet Grass Hills TCP and 32,166 acres in higher elevations of the Little Rocky Mountains TCP.</p> <p>An NSO stipulation would be placed on 1,711,378 acres, including Big Bend of the Milk River ACEC (1,979 acres); Kevin Rim ACEC (4,564 acres); remaining lower elevations of the Little Rocky Mountains TCP (5,936 acres); National Register eligible properties (1,497 acres); and 40 acres near the Bear Paw Battlefield.</p>

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
		NHPA.	106 of NHPA.		Remaining area available for leasing (1,627,370 acres) would require mitigation through Section 106 of NHPA.
Renewable Energy	No special protection for 11,590 acres of National Register eligible sites in high potential areas except mitigation under Section 106 of the NHPA.	<p>ACECs and TCPs would be better protected as exclusion areas for wind energy rights-of-way.</p> <p>No special protection for 11,590 acres of National Register eligible sites in high potential areas except mitigation under Section 106 of the NHPA.</p>			
Solid Minerals	<p>Upon expiration of the Zortman/Landusky withdrawal in 2015 mining development could occur which could have indirect impacts to the viewshed and create unwanted noise for traditionalists using the surrounding areas.</p> <p>If the Sweet Grass Hills withdrawal is not renewed in 2017, mining development could occur which would indirectly affect the visual landscape and could directly affect sacred sites.</p> <p>Adverse effects to cultural resources from salable minerals would be</p>	<p>The Sweet Grass Hills and Little Rocky Mountains TCPs would be recommended for withdrawal from mineral entry for an additional 20 years, which would provide maximum beneficial effects for archaeological sites and traditional uses.</p> <p>The Big Bend of the Milk River and Kevin Rim ACECs would be withdrawn from mineral entry for 20 years, which would protect the historic properties and traditional users of the areas would have no visual or audio disturbance from mining</p>	<p>The Sweet Grass Hills TCP would be recommended for withdrawal from mineral entry for an additional 20 years, which would provide maximum beneficial effects for archaeological sites and traditional uses.</p> <p>The Little Rocky Mountains TCP would be closed to leasable and salable solid minerals, which would benefit cultural resources.</p> <p>Adverse effects to cultural resources from salable minerals would be mitigated through Section</p>	<p>Upon expiration of the Zortman/Landusky withdrawal in 2015 mining development could occur which could have indirect impacts to the viewshed and create unwanted noise for traditionalists using the surrounding areas.</p> <p>Upon expiration of the Sweet Grass Hills withdrawal in 2017 mining development could occur which would indirectly affect the visual landscape and could directly affect sacred sites.</p> <p>Adverse effects to cultural resources from salable minerals would be</p>	<p>The Sweet Grass Hills TCP would be recommended for withdrawal from mineral entry for an additional 20 years, which would provide maximum beneficial effects for archaeological sites and traditional uses.</p> <p>A portion of the Little Rocky Mountains TCP would be closed to leasable minerals (32,573 acres) but would be open to locatable minerals, which would adversely impact the visual, aural and physical qualities of the TCP.</p> <p>Constraints in the Greater</p>

<b>Table 2.29 Summary Comparison of Environmental Consequences</b>					
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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	mitigated through Section 106 of the NHPA.	activities.  Cultural resources in the Greater Sage-Grouse Protection Priority Area and Grassland Bird/Greater Sage-Grouse Priority Areas would be protected because surface disturbance would be restricted on 1,391,485 acres.	106 of the NHPA.  Cultural resources in the Greater Sage-Grouse Protection Priority Area and Grassland Bird/Greater Sage-Grouse Priority Areas would be protected because surface disturbance would be restricted on 1,229,037 acres.	mitigated through Section 106 of the NHPA.	Sage-Grouse PHMA and Grassland Bird/Greater Sage-Grouse PHMA (NSO for oil and gas development (1,028,661 acres and 318,526 acres, respectively); closure to leasable minerals (1,069,671 acres and 317,242 acres, respectively); closure to renewable energy development; avoidance areas for transmission lines and new roads) would provide greater protection from surface disturbance.
<b>Economics</b>					
Combined Effects	Average annual federal revenues from BLM land and mineral uses would increase by an estimated \$6.6 million to about \$16.1 million per year. Annual payments to counties are anticipated to increase by approximately \$931,000, with approximately \$4.6 million in federal revenues distributed back to counties in the planning area on annual average, most of which would be related to	All program revenues to the federal government would be about \$8.2 million per year, a \$1.2 million decrease from current federal revenue. Annual payments to counties under this alternative are also anticipated to decline. On annual average, the 8-county planning area is anticipated to receive around \$3.4 million from revenues associated with	Average annual federal revenues from BLM land and mineral uses would increase by an estimated \$4.6 million to about \$14 million per year. Annual payments to counties are anticipated to increase by approximately \$631,000, with approximately \$4.3 million in federal revenues distributed back to counties in the planning area on annual average, most of which would be related to	Average annual federal revenues from BLM land and mineral uses would increase by an estimated \$6.7 million to about \$16.2 million per year. Annual payments to counties are anticipated to increase by approximately \$948,000, with approximately \$4.6 million in federal revenues distributed back to counties in the planning area on annual average, most of which would be related to	Average annual federal revenues from BLM land and mineral uses would increase by an estimated \$5.5 million to about \$15 million per year. Annual payments to counties are anticipated to increase by approximately \$781,000, with approximately \$4.4 million in federal revenues distributed back to counties in the planning area on annual average, most of which would be related to

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	oil and gas production and PILT payments.	BLM-managed lands administered by the HiLine District.	oil and gas production and PILT payments.	oil and gas production and PILT payments.	oil and gas production and PILT payments.
<b>Fire Management and Ecology</b>					
	<p>237 acres treated mechanically and 343 acres treated with prescribed fire annually. A total of 11,600 acres (10% of BLM forested landscape) would be treated in a 20-year period.</p> <p>Treatments would not keep pace with vegetation growth/disturbance cycles and reduced treatments could exacerbate or expand poor forest health conditions, and cause the greatest chance of extreme fire behavior and larger fire sizes.</p>	<p>391 acres treated mechanically and 1,333 acres treated with prescribed fire annually. A total of 34,480 acres (73% of BLM forested landscape) would be treated in a 20-year period.</p> <p>Over time conditions may be created where new suppression strategies in Category C areas could be considered.</p>			
	The Class II rating for the Bears Paw and Little Rocky Mountains and Sweet Grass Hills may restrict landscape level forest health treatments.	The Class I rating for the Sweet Grass Hills and Kevin Rim ACECs and Burnt Lodge and Bitter Creek WSAs could restrict landscape level forest health treatments on 90,032 acres.	The Class III rating for Sweet Grass Hills, Bears Paw Mountains, and Little Rocky Mountains could allow increased landscape level forest health treatments on up to 38,037 acres.	The Class III rating for all forested areas except the WSAs could allow increased landscape level forest health treatments on up to 44,282 acres.  The Class I or II rating for	The Class III rating for Sweet Grass Hills, Bears Paw Mountains, and Little Rocky Mountains could allow increased landscape level forest health treatments on up to 38,037 acres.

<b>Table 2.29 Summary Comparison of Environmental Consequences</b>					
<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
		<p>The Class II rating for the Little Rocky Mountains, Frenchman Breaks area, and Missouri Breaks (781,545 acres) could conflict with vegetation treatment objectives.</p> <p>Treatments may exceed the accepted level of change and objectives of a Class I or II rating.</p>	<p>The Class I rating for the Burnt Lodge and Bitter Creek WSAs, and Class II ratings in the Frenchman Breaks area, Woody Island ACEC, and Missouri Breaks (857,061 acres) could conflict with vegetation treatment objectives.</p> <p>Treatments may exceed the accepted level of change and objectives of a Class I or II rating.</p>	<p>all remaining forested acres in the planning area may restrict landscape level forest health treatments.</p> <p>Treatments may exceed the accepted level of change and objectives of a Class I or II rating.</p>	<p>The Class I rating for the Burnt Lodge and Bitter Creek WSAs, and Class II rating in the Frenchman Breaks area, Woody Island ACEC, and Missouri Breaks (857,061 acres) could conflict with vegetation treatment objectives.</p> <p>Treatments may exceed the accepted level of change and objectives of a Class I or II rating.</p>
<b>Fish</b>					
	<p>Rehabilitation would be required only on surface disturbances greater than 1/4 acre in size, which could allow for more sedimentation in nearby fish-bearing streams.</p> <p>Riparian and wetland areas would be avoidance areas for rights-of way, which would provide protection for fish-bearing streams.</p>	<p>NSO stipulations required within 1/4 mile of lentic or lotic riparian areas, and rehabilitation required on surface disturbances greater than 1/10 acre in size would greatly reduce sediment flow into fish-bearing streams or fisheries reservoirs.</p> <p>Riparian areas with unique values would be avoidance areas for rights-of-way, which would provide protection for fish-bearing</p>	<p>NSO stipulations required within 500 feet of riparian areas and rehabilitation required on surface disturbances greater than 1/10 acre in size would reduce sediment flow into fish-bearing streams.</p> <p>No avoidance areas for rights-of-way could compromise habitat for sensitive fish species.</p>	<p>CSU stipulations within 300 feet of riparian areas and rehabilitation required on surface disturbances greater than 1/10 acre in size would reduce sediment flow into fish-bearing streams, but the greater acreage of disturbance allowed could result in increased sediment flow.</p> <p>No avoidance areas for rights-of-way would provide fewer protections</p>	<p>NSO stipulations within perennial or intermittent streams and CSU stipulations within 300 feet of riparian areas along with rehabilitation required on surface disturbances greater than 1/10 acre in size would reduce sediment flow into fish-bearing streams.</p> <p>Riparian areas with unique values would be avoidance areas for rights-of-way, which would provide</p>

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		streams.		for fish-bearing streams.	protection for fish-bearing streams.
<b>Fluid Minerals</b>					
New Federal Oil and Gas Wells	1,874	647	1,617	1,894	1,756
Acres Closed by Development Potential					
High	0	138,489	0	0	0
Moderate	0	283,347	0	0	0
Low	0	324,728	2,841	0	21,271
Very Low	102,298	2,427,013	215,745	74,674	131,431
Acres NSO by Development Potential					
High	3,938	6,889	50,521	13,094	35,654
Moderate	9,199	45,247	154,468	10,742	59,753
Low	22,614	72,412	169,265	31,297	55,328
Very Low	246,310	133,968	916,833	302,323	1,560,614
Acres CSU/TLS by Development Potential					
High	137,116	0	89,832	107,298	106,803
Moderate	233,907	778	126,822	219,021	251,155
Low	277,051	423	143,928	211,988	286,720
Very Low	2,001,094	2,090	1,321,410	1,923,287	815,388

**Table 2.29  
Summary Comparison of Environmental Consequences**

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<b>Acres Standard Terms Only by Development Potential</b>					
High	5,206	883	5,908	25,867	3,802
Moderate	94,336	8,070	56,153	107,680	26,535
Low	111,916	14,019	95,550	168,297	48,263
Very Low	246,323	32,956	142,038	295,744	88,594
Cumulative Effects	Approximately 6,014 additional oil and gas wells could be drilled during the next 20 years, of which 1,874 wells would access federal minerals. From baseline conditions, total oil production could be 0.6% less and total gas production could also be 4.4% less.	Approximately 4,787 additional oil and gas wells could be drilled during the next 20 years, of which 647 wells would access federal minerals. From baseline conditions, total oil production could be 9.5% less and total gas production could also be 68.3% less.	Approximately 5,756 additional oil and gas wells could be drilled during the next 20 years, of which 1,617 wells would access federal minerals. From baseline conditions, total oil production could be 2.8% less and total gas production could also be 18.4% less.	Approximately 6,034 additional oil and gas wells could be drilled during the next 20 years, of which 1,894 wells would access federal minerals. From baseline conditions, total oil production could be 0.5% less and total gas production could also be 3.4% less.	Approximately 5,896 additional oil and gas wells could be drilled during the next 20 years, of which 1,756 wells would access federal minerals. From baseline conditions, total oil production could be 1.5% less and total gas production could also be 10.3% less.
<b>Forests and Woodlands</b>					
	FMUs would remain as Category B and natural fire would not be considered as a management tool.  Minimal gains would be made on restoration of forest health during the life of the plan as treatments could not exceed ASQ of 3.5 MMBF per decade.	The eastern half of the planning area (including 30,949 acres of forested land in the Little Rocky Mountains) would be reclassified as FMU Category C.  Forest health treatments averaging 390 acres per year would focus on	The eastern half of the planning area (including 30,949 acres of forested land in the Little Rocky Mountains) would be reclassified as FMU Category C.  Forest health treatments averaging 390 acres per year would focus on	The eastern half of the planning area (including 30,949 acres of forested land in the Little Rocky Mountains) would be reclassified as FMU Category C.  Forest health treatments averaging 390 acres per year would focus on	The northeastern portion of the planning area (Malta Prairie Potholes) would be reclassified as FMU Category C.  Forest health treatments averaging 390 acres per year would focus on landscape-level treatments rather than ASQ.

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	<p>Class II rating for the Bears Paw and Little Rocky Mountains and Sweet Grass Hills may restrict landscape-level forest health treatments.</p> <p>Timing limits for wildlife (December 1-May 15) could constrain most forest health activities and contracts may require multiple years to be completed.</p> <p>Small forest health projects would provide a small quantity of wood products to the local industry and provide some work opportunities and boost to the local economy.</p>	<p>landscape-level treatments rather than ASQ. Silvicultural treatment would address old growth.</p> <p>Class I rating for the Sweet Grass Hills may restrict landscape-level forest health treatments on 6,248 acres. Class III rating for the entire Little Rocky Mountains would all landscape-level treatments on up to 30,949 acres.</p> <p>Timing or location considerations for wildlife and habitat would be evaluated at the project planning level and appropriate mitigation applied. Timing considerations within 1 mile of active raptor nests could constrain vegetation treatments.</p> <p>Forest health projects would provide wood products and work opportunities to the local industry and help boost to the local economy.</p>	<p>landscape-level treatments rather than ASQ. Silvicultural treatment would address old growth.</p> <p>Class III rating for the Sweet Grass Hills and Bears Paw and Little Rocky Mountains would provide landscape-level forest management opportunities on up to 38,037 acres.</p> <p>Timing limits for wildlife (December 1-May 15) could constrain most forest health activities and contracts may require multiple years to be completed.</p> <p>Forest health projects would provide wood products and work opportunities to the local industry and help boost to the local economy.</p>	<p>landscape-level treatments rather than ASQ. Silvicultural treatment would address old growth.</p> <p>Class III rating for all forested areas in the planning area except the WSAs would provide landscape-level forest management opportunities on up to 44,282 acres. All remaining forested acres would fall within Class I and II ratings which may restrict landscape-level forest health treatments.</p> <p>Timing limits for wildlife (December 1-March 31) could constrain forest health activities and contracts may require multiple years to be completed. Prescribed fire could usually be implemented successfully in the month of April.</p> <p>Forest health projects would provide wood products and work opportunities to the local industry and help boost to</p>	<p>Silvicultural treatment would address old growth.</p> <p>Class III rating for the Sweet Grass Hills and Bears Paw and Little Rocky Mountains would provide landscape-level forest management opportunities on up to 38,037 acres. All remaining forested acres would fall within Class I and II ratings which may restrict landscape-level forest health treatments.</p> <p>Timing limits for wildlife (December 1-May 15) could constrain most forest health activities and contracts may require multiple years to be completed. In some situations prescribed fire may not be available as a treatment option in forested settings during summer and fall.</p> <p>Forest health projects would provide wood products and work opportunities to the local</p>

**Table 2.29  
Summary Comparison of Environmental Consequences**

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				the local economy.	industry and help boost to the local economy.
<b>Lands and Realty</b>					
	<p>As the population continues to shift from urban areas to a more rural setting, more land is subdivided. This will result in an increasing demand for rights-of-way to address access needs, enhanced telecommunications capacity, and increased demands for power. As more private lands are closed to recreational use, the public will turn their attention to available open lands (i.e., BLM land, block management areas, and private land where access is allowed). Consequently, there will be an increased demand for recreational access, whether through access easements, conservation easements that provide access, reciprocal rights-of way, or land exchange proposals that enhance access.</p>				
<b>OHV Use and Travel and Transportation Management</b>					
	<p>Areas designated as open to OHV use off roads, primitive roads and trails would include the Fresno OHV area (84 acres) and the Glasgow OHV area (40 acres); designated as limited to existing roads, primitive roads and trails (2,429,885 acres); and closed to OHV use (7,429 acres in the Sweet Grass Hills ACEC).</p> <p>No motorized game retrieval off road would be allowed, but could be considered during subsequent travel management planning.</p>	<p>OHV designations would include: limited to existing roads, primitive roads and trails (2,429,925 acres); and closed (7,513 acres). No areas would be designated as open to off-road travel, which would adversely affect OHV users.</p> <p>No motorized game retrieval off road would be allowed, and would not be considered during subsequent travel management planning.</p> <p>Overall protection measures for natural and cultural resources would have a greater impact on</p>	<p>OHV designations would include: limited to existing roads, primitive roads and trails (2,429,885 acres); and closed (7,553 acres). No areas would be designated as open to off-road travel, which would adversely affect OHV users.</p> <p>Motorized game retrieval off road would be allowed in specified areas (387,118 acres).</p> <p>Overall protection measures for natural and cultural resources would have a similar, but less impact on OHV use than Alternative B.</p>	<p>Areas designated as open to OHV use off roads, primitive roads and trails would include the Fresno OHV area (84 acres), Glasgow OHV area (40 acre), and Thirty Mile OHV area (181 acres); designated as limited to existing roads, primitive roads and trails (2,437,133 acres). No closed areas would be designated, which would beneficially affect OHV users.</p> <p>Motorized game retrieval off road would be allowed on all BLM land in the planning area except the Bitter Creek and Burnt Lodge WSAs, and Big</p>	<p>The Glasgow OHV area (40 acres) would remain designated as open to OHV use off roads, primitive roads and trails.</p> <p>The Fresno OHV area (125 acres) would remain designated as open to OHV travel off roads, primitive roads and trails. Through travel management planning the BLM would address the need for seasonal restrictions, and/or a boundary adjustment to address resource values and conflicts of use.</p> <p>2,429,885 acres would be designated as limited to</p>

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
		OHV use than all other alternatives.		<p>Bend of the Milk River, Kevin Rim, Frenchman Breaks, and Malta Geological ACECs (2,290,669 acres).</p> <p>Overall protection measures for natural and cultural resources would have a lesser impact on OHV use than all other alternatives.</p>	<p>existing roads, primitive roads and trails; and 7,429 acres in the Sweet Grass Hills ACEC would be closed to OHV use.</p> <p>This alternative would have little effect on the volume of OHV use in the short or long term.</p> <p>Off-road game retrieval would not be allowed, but could be considered during subsequent travel management planning.</p>
<b>Paleontological Resources</b>					
	<p>Fluid mineral development could affect paleontological resources, but stipulations would minimize the effects of permitted activities.</p> <p>OHV use may inadvertently impact paleontological resources from vehicles driving over fossil exposures. Vehicle travel would also contribute to erosion, which would result in exposure and loss of</p>	<p>Fluid mineral development would have less potential to affect paleontological resources, and stipulations would minimize the effects of permitted activities.</p> <p>OHV use may inadvertently impact paleontological resources from vehicles driving over fossil exposures, but to a lesser extent. Vehicle travel would also contribute to erosion, which would result in</p>	<p>Moderate fluid mineral development could lead to the inadvertent discovery of paleontological resources, but to a lesser degree because this alternative would have the most acres open with NSO and the second most acres closed to leasing.</p> <p>OHV use may inadvertently impact paleontological resources from vehicles driving over fossil exposures. Vehicle</p>	<p>Fluid mineral development would have greater potential to affect paleontological resources due to fewer surface limitations and more acreage open to surface disturbance. More roads would be created, thus increasing the possibility for inadvertent discovery.</p> <p>OHV use may inadvertently impact paleontological resources from vehicles driving over</p>	<p>Fluid mineral development would have less potential to affect paleontological resources due to the second most acres open to leasing with NSO stipulations and the second most acres closed to leasing. Roads would still be created which could lead to the possibility for inadvertent discovery.</p> <p>OHV use may inadvertently impact paleontological resources</p>

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Summary Comparison of Environmental Consequences**

<b>Resource</b>	<b>Alternative A (Current Management)</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Preferred Alternative)</b>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	<p>specimens.</p> <p>2,248,567 acres would be open areas, and 188,871 acres would be exclusion areas for wind energy rights-of-way, and surface disturbance during construction of facilities would have the greatest potential to affect paleontological resources.</p>	<p>exposure and loss of specimens. No open OHV areas would offer the greatest protection of paleontological resources from vehicles.</p> <p>249,050 acres would be open areas and 2,188,388 acres would be exclusion areas for wind energy rights-of-way, but surface disturbance during construction of commercial facilities would have the least potential to affect paleontological resources because of the limited acres available for development.</p>	<p>travel would also contribute to erosion, which would result in exposure and loss of specimens.</p> <p>Off-road game retrieval could lead to inadvertent discovery of and the greatest potential impact to paleontological resources.</p> <p>1,112,481 acres would be open areas and 1,324,957 acres would be exclusion areas for wind energy rights-of-way, and surface disturbance during construction of facilities could affect paleontological resources.</p>	<p>fossil exposures. Vehicle travel would also contribute to erosion, which would result in exposure and loss of specimens.</p> <p>Not allowing off-road game retrieval in the WSAs and 4 ACECs would decrease the number of inadvertent discoveries.</p> <p>2,144,466 acres would be open areas, and 292,992 acres would be exclusion areas for wind energy rights-of-way, and surface disturbance during construction of facilities would have the second greatest potential to affect paleontological resources.</p>	<p>from vehicles driving over fossil exposures. Vehicle travel would also contribute to erosion, which would result in exposure and loss of specimens.</p> <p>Off-road game retrieval would be limited which would lessen the potential for inadvertent discovery of paleontological resources.</p> <p>897,765 acres would be open areas and 1,539,673 acres would be avoidance areas for wind energy rights-of-way, but surface disturbance during construction of commercial facilities would have the second least potential to affect paleontological resources because fewer acres would be available for development.</p>
<b>Recreation</b>					
	<p>6,860 acres would have short-term disturbance from prescribed fire, and 4,740 acres would have</p>	<p>26,660 acres would have short-term disturbance from prescribed fire, and 7,820 acres would have short-term disturbance from mechanical treatment actions. Surface disturbance from these actions would reduce recreational opportunities and degrade the quality of recreational experiences in the short term, but would improve opportunities and experiences in the long term.</p>			

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	<p>short-term disturbance from mechanical treatment actions. Surface disturbance from these actions would reduce recreational opportunities and degrade the quality of recreational experiences in the short term, but would improve opportunities and experiences in the long term.</p> <p>9,564 acres would have short-term surface disturbance from oil and gas development actions, and 2,422 acres would have long-term surface disturbance which would reduce recreational opportunities and the quality of the recreational experience. The 102,298 acres closed to fluid mineral leasing and 282,062 acres open with NSO stipulations would not affect recreation experiences in these existing areas.</p> <p>Motorized recreational users would benefit from</p>	<p>4,440 acres would have short-term surface disturbance from oil and gas development actions, and 1,544 acres would have long-term surface disturbance which would reduce recreational opportunities and the quality of the recreational experience. The 3,173,637 acres closed to fluid mineral leasing and 258,560 acres open with NSO stipulations would protect existing recreational opportunities and experiences.</p> <p>Non-motorized recreational users would benefit from having no open areas available as designated OHV areas (including the Fresno OHV area which would be closed to motorized use), while motorized recreationists would be denied the opportunity to use their specialized equipment. Recreational users who enjoy hiking and horseback riding would</p>	<p>8,547 acres would have short-term surface disturbance from oil and gas development actions, and 2,238 acres would have long-term surface disturbance which would reduce recreational opportunities and the quality of the recreational experience. The 218,586 acres closed to fluid mineral leasing and 1,291,160 acres open with NSO stipulations would protect existing recreational opportunities and experiences.</p> <p>Non-motorized recreational users would benefit from having no open areas available as designated OHV areas (including the Fresno and Glasgow OHV areas which would be closed to motorized use), while motorized recreationists would be denied the opportunity to use their specialized equipment. Recreational users who enjoy hiking and horseback</p>	<p>9,663 acres would have short-term surface disturbance from oil and gas development actions, and 2,436 acres would have long-term surface disturbance which would reduce recreational opportunities and the quality of the recreational experience. The 74,674 acres closed to fluid mineral leasing and 357,456 acres open with NSO stipulations would protect existing recreational opportunities and experiences.</p> <p>Non-motorized recreational users would benefit from having no areas open to motorized use except for the three designated open OHV areas: Fresno (84 acres), Glasgow (40 acres), and Thirty Mile (181 acres). Motorized recreational users would benefit from the designated open OHV areas. The Sweet Grass Hills would be open to motorized use and limited</p>	<p>9,068 acres would have short-term surface disturbance from oil and gas development actions, and 2,337 acres would have long-term surface disturbance which would reduce recreational opportunities and the quality of the recreational experience. The 152,702 acres closed to fluid mineral leasing and 1,711,378 acres open with NSO stipulations would protect existing recreational opportunities and experiences.</p> <p>Non-motorized recreational users would benefit from having no areas open to motorized use except for the Fresno (125 acres) and Glasgow (40 acres) designated OHV areas. Motorized recreationists would benefit from the designated open OHV areas. Recreational users who enjoy hiking and horseback riding would benefit from the 7,429 acres closed to</p>

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	<p>the designated open OHV areas. Recreational users who enjoy hiking and horseback riding would benefit from the 7,429 acres closed to motorized use in the Sweet Grass Hills. The limited designation on remaining lands would benefit the motorized recreational user more than the non-motorized user.</p> <p>The 5 areas designated as SRMAs (1,305,593 acres) would benefit recreation by allowing for development of new facilities and road upgrades that would increase recreational opportunities and enhance recreational experiences.</p> <p>Closing the Sweet Grass Hills SRMA to motorized use would adversely affect opportunities for motorized recreationists.</p> <p>With a few exceptions the remaining lands (1,131,845 acres) would be managed as an ERMA.</p>	<p>benefit from the 7,429 acres closed to motorized use in the Sweet Grass Hills. The 84 acre Fresno OHV area would be closed to motorized use. The limited designation on remaining lands would benefit the motorized recreational user more than the non-motorized user.</p> <p>Not allowing motorized game retrieval off road would enhance more primitive, non-motorized hunting experiences, whereas those hunters who are unable to retrieve their down big game by non-motorized means may experience decreased hunting opportunities.</p> <p>The entire planning area (2,437,399 acres) would be managed as an LND, which would create the most dispersed recreation opportunities, but would adversely impact facility-based recreation resources as the development of new facilities would have a</p>	<p>riding would benefit from the 7,429 acres closed to motorized use in the Sweet Grass Hills. The 84 acre Fresno OHV area would be closed to motorized use. The limited designation on remaining lands would benefit the motorized recreational user more than the non-motorized user.</p> <p>Allowing motorized game retrieval off road in specified areas would benefit motorized recreational users by allowing hunting opportunities for those hunters who are unable to retrieve their down big game by non-motorized means.</p> <p>The Little Rocky Mountains (27,688 acres) would be designated a SRMA, which would better enable the BLM to deal with high OHV use in the area that is adversely affecting the setting, and would also benefit recreation by allowing for</p>	<p>to existing roads, primitive roads and trails, which would benefit motorized recreational users but adversely affect non-motorized recreational users.</p> <p>Allowing motorized game retrieval off road in all areas except the Burnt Lodge and Bitter Creek WSAs and the Big Bend of the Milk River, Kevin Rim, Frenchman Breaks, and Malta Geological ACECs would benefit motorized recreational users by allowing hunting opportunities for those hunters who are unable to retrieve their down big game by non-motorized means. However, the encounter of off-road motorized game retrieval could diminish hunting opportunities and quality of the experience for non-motorized hunters.</p> <p>Twelve sites would be managed as SRMAs (97,088 acres) and 2 sites</p>	<p>motorized use in the Sweet Grass Hills. The limited designation on remaining lands would benefit the motorized recreational user more than the non-motorized user.</p> <p>Not allowing motorized game retrieval off road would enhance more primitive, non-motorized hunting experiences, whereas those hunters who are unable to retrieve their down big game by non-motorized means may experience decreased hunting opportunities.</p> <p>The Little Rocky Mountains (27,688 acres) would be designated a SRMA, which would better enable the BLM to deal with high OHV use in the area that is adversely affecting the setting, and would also benefit recreation by allowing for development of new facilities at and near the established campgrounds that would increase</p>

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		<p>lower priority for construction and funding. Disturbance from development of recreational facilities would be the least under this alternative.</p>	<p>development of new facilities at and near the established campgrounds that would increase recreational opportunities and enhance recreational experiences.</p> <p>Nine sites would be managed as an ERMA (61,800 acres), which would have a lower priority for resources and development than SRMAs, but recreation resources would be less impacted by other resource issues than LNDs.</p> <p>The remaining lands in the planning area would be designated as an LND (2,347,911 acres), which would create the most dispersed recreation opportunities, but would adversely impact facility-based recreation resources as the development of new facilities would have a lower priority for construction and funding.</p>	<p>would be managed as ERMAs (244 acres). This would be the most SRMA acreage and the second least ERMA acreage of all the alternatives. This alternative would lead to the most potential disturbance from recreation management of all alternatives because it identifies more acres for high priority facility-based recreation management which includes more concentrated recreation activities and development of more recreation-related facilities.[</p> <p>The remaining lands in the planning area would be managed as an LND (2,340,066 acres), which would create the most dispersed recreation opportunities, but would adversely impact facility-based recreation resources as the development of new facilities would have a lower priority for construction and funding.</p>	<p>recreational opportunities and enhance recreational experiences.</p> <p>The Glasgow OHV area would also be designated a SRMA (40 acres) and open to OHV use. This would benefit the motorized recreational user and prioritize management resources to this type of recreation outcome over other resource issues.</p> <p>Ten RMAs would be managed as ERMAs (69,405 acres) to protect the recreation facilities and uses that currently take place in those areas. Recreation outcomes would be a high priority but may be limited if they conflict with other resource management priorities within the ERMA.</p> <p>The remaining lands in the planning area would be managed as an LND (2,340,266 acres), which would create the most dispersed recreation</p>

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					opportunities, but would adversely impact facility-based recreation resources as the development of new facilities would have a lower priority for construction and funding.
<b>Renewable Energy Resources (Wind)</b>					
	About 188,871 acres would be exclusion areas for wind energy rights-of-way. About 90% of the high and 93% of the moderate development potential areas on BLM land would be available for wind energy rights-of-way, all within designated and open areas.	About 2,188,388 acres would be exclusion areas for wind energy rights-of-way. About 10% of the high and 10% of the moderate development potential areas on BLM land would be available for wind energy rights-of-way, although 97% of the available acres lie within designated avoidance areas.	About 1,324,957 acres would be exclusion areas for wind energy rights-of-way. About 49% of the high and 45% of the moderate development potential areas on BLM land would be available for wind energy rights-of-way, although 90% of the available acres lie within designated avoidance areas.	About 292,992 acres would be exclusion areas for wind energy rights-of-way. About 79% of the high and 91% of the moderate development potential areas on BLM land would be available for wind energy rights-of-way, although 89% of the available acres lie within designated avoidance areas.	About 1,539,673 acres would be exclusion areas for wind energy rights-of-way. About 48% of the high and 36% of the moderate development potential areas on BLM land would be available for wind energy rights-of-way, although 97% of the available acres lie within designated avoidance areas.
<b>Social</b>					
	Groups and individuals who give a high priority to resource use, including many local residents, may feel that current management has adequately protected these resources.	Groups and individuals who give a high priority to resource use likely would not support this alternative because it contains the most restrictions on oil and gas development. This group includes many local residents who are	Groups and individuals who give a high priority to resource use may be concerned about restrictions on oil and gas development. This group includes many local residents who are concerned about economic	Groups and individuals who give a high priority to resource use likely would support this alternative because it offers the fewest restrictions on oil and gas development. This group includes many local residents who are	Groups and individuals who give a high priority to resource use may be concerned about restrictions on oil and gas development. This group includes many local residents who are concerned about economic

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	<p>Groups and individuals who give a high priority to resource protection may not feel this alternative offers adequate protection for these resources. This could result in a decline in the quality of life for these groups and individuals.</p> <p>Groups and individuals who prioritize the value a primitive recreational experience may not feel this alternative provides the opportunities to enhance primitive experiences in the future.</p> <p>Native Americans who engage in traditional practices in the Sweet Grass Hills or the Little Rocky Mountains may be less able to practice their religion in an unencumbered way in the future.</p>	<p>concerned about the potential negative social effects to small communities if economies suffer because resource development is not allowed. In addition, opportunities for OHV use or off road game retrieval would not be available.</p> <p>Groups and individuals who give a high priority to resource protection may prefer this alternative because it offers the most protection for resources, such as wildlife habitat, and the least amount of surface disturbance. However, not all groups and individuals that prioritize resource protection may find this alternative to provide enough protection that they feel may be needed. Additionally, there may be concern that some of the effects to these resources from development restricted on public lands would be pushed onto private lands where the</p>	<p>development and its potential positive effects on the social environment of small communities.</p> <p>Groups and individuals who give a high priority to resource protection may feel this alternative does not offer enough protection for these resources.</p> <p>Groups and individuals that prioritize the value of primitive recreational experiences likely would feel this alternative provides opportunities to enhance this type of experience.</p> <p>Groups and individuals that prioritize the value of OHV recreational opportunities may find this alternative unsatisfactory due to the closure of currently available intensive OHV use areas.</p> <p>Effects to Native Americans who engage in traditional practices could be positive in the Sweet</p>	<p>concerned about economic development and its potential positive effects on the social environment of small communities.</p> <p>Groups and individuals who give a high priority to resource protection may not feel this alternative offers adequate protection for these resources, because management actions under this alternative would slowly degrade existing conditions for these resources in most of the planning area.</p> <p>Effects to Native Americans who engage in traditional practices could be positive in the Little Rocky Mountains but negative elsewhere in terms of their ability to practice their religion in an unencumbered way.</p> <p>Opportunities would increase for those groups and individuals who enjoy a motorized experience and decline for those who</p>	<p>development and its potential positive effects on the social environment of small communities.</p> <p>Groups and individuals who give a high priority to resource protection may feel this alternative offers adequate protection for these resources. However, not all groups and individuals that prioritize resource protection may find this alternative to provide enough protection that they feel may be needed.</p> <p>Effects to Native Americans who engage in traditional practices could be positive in the Sweet Grass Hills and negative in the Little Rocky Mountains in terms of their ability to practice their religion in an unencumbered way.</p> <p>Recreation opportunities would be balanced between motorized and nonmotorized opportunities.</p>

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		<p>protections would not be in place. This alternative may provide an enhancement to the quality of life for these groups and individuals.</p> <p>Groups and individuals that prioritize the value of a primitive recreational experience may feel this alternative provides opportunities to enhance primitive experiences in the future.</p> <p>Native Americans who engage in traditional practices in the Sweet Grass Hills or the Little Rocky Mountains would be better able to practice their religion in an unencumbered way in the future.</p>	<p>Grass Hills and negative in the Little Rocky Mountains in terms of their ability to practice their religion in an unencumbered way.</p>	<p>enjoy a more primitive experience.</p>	
<b>Soil Resources and Vegetation – Rangeland</b>					
	<p>Surface disturbing activities would affect soils and vegetation to varying degrees depending on the amount, location, and type of disturbance; soil type; time of year; climate; and, surface hydrology. Surface disturbing activities remove protective vegetative cover and/or crusts and can alter soil physical, chemical, and biological properties; resulting in increased soil susceptibility to water and wind erosion, and decreased soil quality and site productivity. Guidance from BMPs, Standards for Rangeland Health and design standards would be implemented to minimize and mitigate soil effects.</p>				
	<p>Approximately 223,654 acres of new surface</p>	<p>Approximately 241,116 acres of new surface</p>	<p>Approximately 245,228 acres of new surface</p>	<p>Approximately 246,659 acres of new surface</p>	<p>Approximately 245,872 acres of new surface</p>

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	<p>disturbances are anticipated on all land ownerships over the next 20 years. Cumulatively, 1.4% of soils and vegetation would be affected from new surface disturbances.</p> <p>This alternative would provide an intermediate level of protection and mitigation of cumulative impacts.</p>	<p>disturbances are anticipated on all land ownerships over the next 20 years. Cumulatively, 1.5% of soils and vegetation would be affected from new surface disturbances.</p> <p>This alternative would be the most protective and would provide the greatest reductions of cumulative impacts by implementing restrictions on many surface-disturbing activities.</p>	<p>disturbances are anticipated on all land ownerships over the next 20 years. Cumulatively, 1.5% of soils and vegetation would be affected from new surface disturbances.</p> <p>This alternative would provide an intermediate level of protection and mitigation of cumulative impacts.</p>	<p>disturbances are anticipated on all land ownerships over the next 20 years. Cumulatively, 1.6% of soils and vegetation would be affected from new surface disturbances.</p> <p>This alternative would be the least protective of soils and vegetation and would result in the greatest cumulative impacts.</p>	<p>disturbances are anticipated on all land ownerships over the next 20 years. Cumulatively, 1.5% of soils and vegetation would be affected from new surface disturbances.</p> <p>This alternative would provide an intermediate level of protection and mitigation of cumulative impacts.</p>
<b>Solid Minerals – Locatable</b>					
	<p>23,444 acres would be withdrawn from mineral entry.</p> <p>The Zortman/ Landusky mine reclamation withdrawal (3,530 acres) would be allowed to expire in October 2015 and the Sweet Grass Hills withdrawal (19,671 acres) would be allowed to expire in April 2017. This would have a positive impact to locatable minerals by</p>	<p>23,563 acres of existing withdrawals in the Little Rocky Mountains and Sweet Grass Hills would be recommended for renewal.</p> <p>An additional 1,647,638 acres of recommended withdrawals would close more land to locatable mineral entry, including Greater Sage-Grouse Protection Priority Area (1,034,102 acres);</p>	<p>23,563 acres of existing withdrawals in the Little Rocky Mountains and Sweet Grass Hills would be recommended for renewal.</p> <p>An additional 1,506,000 acres of recommended withdrawals would close more land to locatable mineral entry, including Greater Sage-Grouse Protection Priority Area (1,034,102 acres);</p>	<p>Approximately 185,000 acres would be recommended for withdrawal from mineral entry.</p> <p>The Zortman/ Landusky mine reclamation withdrawal (3,380 acres) would be allowed to expire in October 2010, and the Sweet Grass Hills withdrawal (19,761 acres) would be allowed to expire in April 2017. This would</p>	<p>Approximately 952,000 acres would be recommended for withdrawal from mineral entry.</p> <p>The Sweet Grass Hills withdrawal (19,761 acres) would be recommended for renewal and the Azure Cave withdrawal (143 acres) would continue. Withdrawals for the Camp Creek Campground (169 acres) and Montana Gulch</p>

**Table 2.29  
Summary Comparison of Environmental Consequences**

<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	<p>opening land for development.</p> <p>This alternative would be the most favorable for locatable minerals exploration and development.</p>	<p>Grassland Bird/Greater Sage-Grouse Priority Areas (480,035 acres); Bitter Creek ACEC (60,717 acres); Kevin Rim ACEC (4,553 acres); Malta Geological ACEC (6,152 acres); Mountain Plover ACEC (24,672 acres); Little Rocky Mountains TCP (37,387 acres); and Zortman Cemetery (20 acres).</p> <p>This alternative would reduce most locatable minerals development opportunities by eliminating any foreseeable development for the reestablishment and expansions of the Zortman and Landusky Mines and limiting all mining activity in the Sweet Grass Hills to claims with valid existing rights.</p>	<p>Grassland Bird/Greater Sage-Grouse Priority Areas (320,405 acres); Bitter Creek ACEC (60,717 acres); Frenchman Breaks ACEC (39,661 acres); Kevin Rim ACEC (4,553 acres); Malta Geological ACEC (6,152 acres); Woody Island ACEC (15,804 acres); and Zortman Cemetery (20 acres).</p> <p>This alternative would reduce most locatable minerals development opportunities by eliminating any foreseeable development for the reestablishment and expansions of the Zortman and Landusky Mines and limiting all mining activity in the Sweet Grass Hills to claims with valid existing rights.</p>	<p>have a positive impact to locatable minerals by opening land for development.</p> <p>Recommended withdrawals would be the Bitter Creek ACEC (60,717 acres); Frenchman Breaks ACEC (57,540 acres); Kevin Rim ACEC (4,553 acres); Little Rocky Mountains ACEC (15,000 acres); Malta Geological ACEC (6,152 acres); Woody Island ACEC (15,804 acres); and Zortman Cemetery (20 acres).</p>	<p>Campground (75 acres) would be modified to include the entire recreation sites.</p> <p>Recommended withdrawals would include the Mountain Plover ACEC (24,672 acres); Zortman Cemetery (20 acres); and Sagebrush Focal Area (927,074 acres).</p> <p>Through a future withdrawal review process the BLM would consider the need for a new withdrawal or right-of-way to promote successful reclamation of the Zortman/Landusky mines. The area for the withdrawal would not exceed the existing withdrawal boundary, but would likely be smaller (maximum size would be 2,560 acres). This would have a positive impact to locatable mineral development.</p>

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<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
<b>Special Designations – Existing ACECs</b>					
Azure Cave ACEC	Retention of the ACEC (142 acres) would provide protection for sensitive bat species hibernating in the cave and features of the cave, and would provide for public safety by limiting access to the cave.				
	The area would be open for wind energy rights-of-way.	The area would be an exclusion area for wind energy rights-of-way, which would provide the greatest protection for sensitive bat species and cave features.			
Big Bend of the Milk River ACEC	Retention of the ACEC (1,979 acres) would protect and manage archaeological resources, including the Henry Smith and Beaucoup sites, which represent bison hunting and prehistoric ceremonial use of the Northwestern Plains.				
	1,140 acres are currently leased and natural gas production has direct and indirect impacts on archaeological sites within the ACEC. Direct impacts to sites would be avoided by mitigation through the Section 106 process.				
	An NSO stipulation would be required for future oil and gas leasing.  Impacts from salable minerals could be mitigated through the Section 106 process.  The area would be open for wind energy rights-of-way. Surface-disturbing activities could be mitigated through the Section 106 process, but the viewshed could not be mitigated.	The area would be closed to future oil and gas leasing.  Impacts from salable minerals could be mitigated through the Section 106 process.  The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way, which would increase protection to cultural resources from potential visual intrusions.	An NSO stipulation would be required for future oil and gas leasing.  Impacts from salable minerals could be mitigated through the Section 106 process.  The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way, which would increase protection to cultural resources from potential visual intrusions.		An NSO stipulation would be required for future oil and gas leasing.  The ACEC would be closed to salable minerals, which would increase the protection to cultural resources from surface-disturbing activities associated with sand and gravel extraction.  The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way, which would increase protection to cultural resources from potential visual intrusions.
Bitter Creek ACEC	Retention of the ACEC (60,701 acres) would benefit scenic diversity and a variety of vegetation types and wildlife habitats.  The area would remain closed to oil and gas leasing until an ACEC management plan is completed that addresses leasing. It would also be an exclusion area for wind energy rights of way and closed to solid minerals-leaseable and mineral material sales. The exclusion and closures would				

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	protect the ACEC from potential surface-disturbing activities and visual intrusions.				
	The 4 1/2 mile wide right-of-way for the Northern Border Corridor would not affect values for which the ACEC was designated due to successful reclamation and soil and vegetation productivity.	The ACEC would be an avoidance area for rights-of-way, and the Northern Border Corridor within the ACEC would be a designated right-of-way corridor with a width of 1 mile. This would protect the values for which the ACEC was designated and successful reclamation that has occurred by preventing future right-of-way actions in the ACEC and confining the Northern Border Pipeline right-of-way to a narrower corridor than under Alternative A.	The ACEC would be an avoidance area for rights-of-way, and the Northern Border Corridor within the ACEC would be a designated right-of-way corridor with a width of 2 miles. This would protect the values for which the ACEC was designated and successful reclamation that has occurred by preventing future right-of-way actions in the ACEC and confining the Northern Border Pipeline right-of-way to a narrower corridor than under Alternative A.	The ACEC would be an avoidance area for rights-of-way. The values for which the ACEC was designated would be protected, but not to the degree provided under Alternatives A, B, or C.	The ACEC would be an avoidance area for rights-of-way, and no utility and transportation corridor would be designated. This would protect the values for which the ACEC was designated by preventing future right-of-way actions in the ACEC.
	The area would be open to solid mineral entry and location, but would be subject to management consistent with BLM Manual 6330-Management of BLM Wilderness Study Areas as appropriate, which would protect the values for which the ACEC was designated.	The BLM would recommend a withdrawal from mineral entry and location (60,717 acres) to protect significant cultural, scenic, and wildlife values. This would benefit scenic views and sensitive archaeological resources, and would protect wildlife by providing a large, continuous, and contiguous amount of grassland habitat.			The area would be open to solid mineral entry and location, but would be subject to management consistent with BLM Manual 6330-Management of BLM Wilderness Study Areas as appropriate, which would protect the values for which the ACEC was designated.
Kevin Rim ACEC	Retention of the ACEC (4,557 acres) would protect the diverse archeological resources and significant raptor habitat.				

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	<p>An NSO stipulation would be required for future oil and gas leasing. 2,950 acres are currently leased and production has direct and indirect impacts on cultural sites within the ACEC. Avoidance and/or other types of mitigation (BMPs) could negate or lessen the effects.</p>				
	<p>No mineral withdrawal would be recommended, but no effects from locatable minerals are expected due to low potential.</p> <p>The ACEC would be open to salable minerals. Impacts to cultural resources from surface-disturbing activities associated with sand and gravel extraction could occur.</p> <p>The ACEC would be open for wind energy rights-of-way. The surface-disturbing activities could be mitigated through the Section 106 process, but impacts to the viewshed could not be mitigated.</p>	<p>A mineral withdrawal would be recommended, although no effects from locatable minerals would be expected due to low potential.</p> <p>The area would be an exclusion area for wind energy rights-of-way, which would increase protection to cultural resources from potential visual intrusions.</p> <p>The ACEC would be closed to salable minerals, which would benefit the ACEC because sand and gravel would be the most likely solid mineral resource extracted within the ACEC.</p>			<p>No mineral withdrawal would be recommended, but no effects from locatable minerals are expected due to low potential.</p> <p>The area would be an exclusion area for wind energy rights-of-way, which would increase protection to cultural resources from potential visual intrusions.</p> <p>The ACEC would be closed to salable minerals, which would benefit the ACEC because sand and gravel would be the most likely solid mineral resource extracted within the ACEC.</p>
Mountain Plover ACEC	<p>Retention of the ACEC (24,762 acres) would provide protection to the natural habitat for mountain plover in this unique area away from traditional habitat associated with prairie dogs.</p>				
	<p>A timing stipulation for oil and gas leasing would avoid direct long-term impacts to mountain plover</p>	<p>An NSO stipulation for oil and gas leasing would avoid any impacts from oil and gas exploration and</p>	<p>An NSO stipulation for oil and gas leasing would avoid direct long-term impacts to mountain plover</p>	<p>An NSO stipulation for oil and gas leasing would avoid direct long-term impacts to mountain plover</p>	<p>The ACEC would be closed to oil and gas leasing which would avoid any impacts from oil and</p>

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	<p>habitat.</p> <p>The ACEC would be open for locatable solid minerals (bentonite) with timing stipulations to protect breeding mountain plovers.</p> <p>The ACEC would be open to salable minerals which could create impacts from surface-disturbing activities associated with sand and gravel extraction, but the potential is considered low.</p> <p>The area would be open for wind energy rights-of-way.</p>	<p>development.</p> <p>A mineral withdrawal would be recommended. This would protect mountain plover from potential permanent impacts and habitat reduction that mining would cause.</p> <p>The ACEC would be open to salable minerals which could create impacts from surface-disturbing activities associated with sand and gravel extraction, but the potential is considered low.</p> <p>The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way, which would increase protection of mountain plover habitat.</p>	<p>habitat.</p> <p>A mineral withdrawal would be recommended. This would protect mountain plover from potential permanent impacts and habitat reduction that mining would cause.</p> <p>The ACEC would be open to salable minerals which could create impacts from surface-disturbing activities associated with sand and gravel extraction, but the potential is considered low.</p> <p>The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way, which would increase protection of mountain plover habitat.</p>	<p>habitat.</p> <p>A mineral withdrawal would be recommended. This would protect mountain plover from potential permanent impacts and habitat reduction that mining would cause.</p> <p>The ACEC would be closed to salable minerals which would protect the mountain plover habitat from surface-disturbing activities associated with sand and gravel extraction.</p> <p>The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way, which would increase protection of mountain plover habitat.</p>	<p>gas exploration and development.</p> <p>A mineral withdrawal would be recommended. This would protect mountain plover from potential permanent impacts and habitat reduction that mining would cause.</p> <p>The ACEC would be closed to salable minerals which would protect the mountain plover habitat from surface-disturbing activities associated with sand and gravel extraction.</p> <p>The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way, which would increase protection of mountain plover habitat.</p>
<p>Prairie Dog Towns within the 7km Complex ACEC</p>	<p>The ACEC (16,403 acres) would be retained. Benefits for prairie dogs and associated species still found within the ACEC boundary would be maintained.</p>	<p>The ACEC would not be retained. The ACEC is no longer effective in providing special management for prairie dogs, associated species, and black-footed ferret reintroduction. Management actions directed at prairie dogs and associated species would still protect the resources for which the ACEC was originally established.</p>			

<p align="center"><b>Table 2.29</b> <b>Summary Comparison of Environmental Consequences</b></p>					
<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
Sweet Grass Hills ACEC	Retention of the ACEC (7,429 acres) would protect habitat which has high potential for reintroduction of peregrine falcon; would protect areas of traditional spiritual importance to Native Americans; and would protect seasonally important elk and deer habitat and aquifer in the area that provide potable water to local residents.				
	<p>An NSO stipulation for oil and gas leasing would apply to future leasing. BLM would work directly with oil and gas operators on existing leases to mitigate adverse impacts to the resources caused by exploration and development activities.</p> <p>No impacts are anticipated to occur from locatable minerals because the Sweet Grass Hills TCP, of which the ACEC is part, is withdrawn from mineral entry.</p> <p>The ACEC is closed to leasable minerals which would protect the resources from impacts that could occur from those surface-disturbing activities.</p> <p>The ACEC is open to salable minerals and impacts could occur from surface-disturbing</p>	<p>An NSO stipulation for oil and gas leasing would apply to future leasing. BLM would work directly with oil and gas operators on existing leases to mitigate adverse impacts to the resources caused by exploration and development activities.</p> <p>BLM would recommend a continuance of the withdrawal from mineral entry. No impacts would occur from hardrock mining.</p> <p>The ACEC would be closed to leasable and salable minerals, which would protect the resources from impacts that could occur from those surface-disturbing activities.</p> <p>The ACEC would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way. This would increase the protection to cultural resources from potential visual intrusions.</p>	<p>An NSO stipulation for oil and gas leasing would apply to future leasing. BLM would work directly with oil and gas operators on existing leases to mitigate adverse impacts to the resources caused by exploration and development activities.</p> <p>BLM would recommend the withdrawal from mineral entry be allowed to expire. Impacts from mining could include noise and visual impacts to traditional users of the area, and damage and/or destruction to archaeological sites.</p> <p>The ACEC would be closed to leasable and salable minerals, which would protect the resources from impacts that could occur from those surface-disturbing activities.</p>	<p>The area would be closed to future oil and gas leasing. BLM would work directly with oil and gas operators on existing leases to mitigate adverse impacts to the resources caused by exploration and development activities.</p> <p>BLM would recommend a continuance of the withdrawal from mineral entry. No impacts are anticipated to occur from hardrock mining.</p> <p>The ACEC would be closed to leasable and salable minerals, which would protect the resources from impacts that could occur from those surface-disturbing activities.</p> <p>The ACEC would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way. This would</p>	

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
<b>Special Designations – Potential ACECs</b>					
Frenchman Breaks ACEC	Surface-disturbing activities could occur under all alternatives and BMPs for surface-disturbing activities would be applied. Under normal circumstances, standard mitigation guidelines are effective in minimizing impacts to resources; however, conditions such as severely erodible soils, severe winters with high mule deer populations on crucial winter range, or extreme environmental events may require more aggressive management actions to mitigate adverse impacts.				
	The ACEC would not be designated.	The ACEC would not be designated. An NSO stipulation would apply to future oil and gas leases to protect soils with severe erosion hazards, badlands, rock outcrop, and lentic or lotic riparian areas. The crucial mule deer winter range within the Frenchman Breaks area would be closed to leasing to protect the crucial winter range.	The ACEC (42,020 acres) would be designated to maintain the unique landscape and scenic characteristics, protect erodible soils and rock outcrop, and protect important wildlife habitats.	The ACEC (63,482 acres) would be designated to maintain the unique landscape and scenic characteristics, protect erodible soils and rock outcrop, and protect important wildlife habitats.	The ACEC (42,020 acres) would be designated to maintain the unique landscape and scenic characteristics, protect erodible soils and rock outcrop and protect important wildlife habitats.
	activities associated with sand and gravel extraction.  The area would be open for wind energy rights-of-way. Surface-disturbing activities could be mitigated through the Section 106 process, but the views shed could not be mitigated.			The ACEC would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way. This would increase the protection to cultural resources from potential visual intrusions.	increase the protection to cultural resources from potential visual intrusions.
				An NSO stipulation would apply to future oil and gas leases to protect the fragile watershed and crucial winter range.  Fluid mineral development could occur on acreage currently leased. Development of the leases would impact soils. Wildlife impacts would be reduced by	

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
					<p>timing and/or avoidance stipulations.</p> <p>The ACEC would be closed to leasable and salable solid minerals, which would protect the erodible soils and rock outcrop, and important wildlife habitats.</p> <p>The ACEC would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.</p>
Grassland Bird/Greater Sage-Grouse Priority Areas ACEC	The areas would not be designated an ACEC.	The ACEC (461,220 acres) would be designated. Closing the ACEC to fluid mineral leasing, making it an exclusion area for ROWs and recommending a locatable mineral withdrawal would minimize fragmentation of sage-grouse and grassland bird habitat.	The areas would not be designated an ACEC.		
Greater Sage-Grouse Protection Priority Area ACEC	The area would not be designated an ACEC.	The ACEC (930,265 acres) would be designated. Closing the ACEC to fluid mineral leasing, making it an exclusion area for ROWs and recommending a locatable mineral withdrawal would minimize fragmentation of sage-grouse habitat.	The area would not be designated an ACEC.		
Little Rocky Mountains ACEC	The area would not be designated an ACEC. Prehistoric and historic archaeological resources, and spiritual and traditional resources in the area would be managed and protected through management of the Little Rocky Mountains TCP.			The ACEC (27,163 acres) would be designated to protect prehistoric and	The ACEC would not be designated. Prehistoric and historic archaeological

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			<p>historic archaeological resources, and spiritual and traditional resources.</p> <p>An NSO stipulation for oil and gas leasing would avoid potential impacts to prehistoric and historic archaeological resources.</p> <p>The ACEC would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way. This would increase the protection to cultural resources from potential visual intrusions.</p> <p>BLM would recommend a withdrawal for the northern portion of the ACEC (15,000 acres) to avoid potential impacts associated with mining.</p> <p>The area would be closed to solid mineral leasing and mineral material sales to avoid potential impacts associated with these activities.</p> <p>The area would have a</p>		<p>resources, and spiritual and traditional resources in the area would be managed and protected through management of the Little Rocky Mountains TCP, including the exclusion of wind energy rights-of-way.</p>

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<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
				limited designation for OHV use; seasonal restrictions, if enacted through travel management planning, would protect cultural resource values.	
Malta Geological ACEC	<p>The area would not be designated an ACEC. Paleontological resources would be protected under BLM 8270 Guidance and Handbook. Impacts due to damage, destruction, theft, and vandalism would diminish the scientific value of paleontological resources.</p> <p>Further field investigations could benefit scientific knowledge.</p> <p>An NSO stipulation for oil and gas leasing would be required for known paleontological sites, which would protect the resource.</p> <p>The area would be open to wind energy rights-of-way; however, anticipated effects of surface</p>	<p>The Malta Geological ACEC (6,153 acres) would be designated to protect significant paleontological values.</p> <p>A CSU stipulation would be placed on future oil and gas leases to protect the paleontological values.</p> <p>The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way to protect the shallow subsurface paleontological resources. This would increase the protection to paleontological resources from potential surface-disturbing activities.</p> <p>BLM would recommend a withdrawal for locatable minerals, and the area would be closed to solid mineral leasing and mineral material sales to avoid potential impacts associated with these activities.</p>			<p>The Malta Geological ACEC (6,153 acres) would be designated to protect significant paleontological values.</p> <p>A CSU stipulation would be placed on future oil and gas leases to protect the paleontological values.</p> <p>The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way to protect the shallow subsurface paleontological resources.</p> <p>BLM would not recommend a withdrawal for locatable minerals, but the area is in a very low or unknown potential for locatable mineral development.</p>

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	disturbance required during construction could be minimized or eliminated through avoidance and mitigation actions.				The area would be closed to solid mineral leasing and mineral material sales to avoid potential impacts associated with these activities.
Woody Island ACEC	The area would not be designated an ACEC.		<p>The Woody Island ACEC (22,411 acres) would be designated to maintain the unique landscape and scenic characteristics, and to protect the fragile watershed and wildlife species from fragmentation.</p> <p>An NSO stipulation would apply to all future oil and gas leases, but this would have little to no impact because development potential is very low.</p> <p>The ACEC would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way. This would increase the protection for the unique landscape from potential surface-disturbing activities.</p> <p>BLM would recommend a withdrawal from locatable mineral entry and the area would be closed to solid mineral leasing and mineral material sales.</p>		<p>The Woody Island ACEC (32,869 acres) would be designated to maintain the unique landscape and scenic characteristics, and to protect the fragile watershed and wildlife species from fragmentation.</p> <p>An NSO stipulation would be applied to all future oil and gas leases, but this would have little to no impact because development potential is very low.</p> <p>The ACEC would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way.</p> <p>BLM would recommend a withdrawal from locatable mineral entry and the area</p>

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					would be closed to solid mineral leasing and mineral material sales.
Zortman/Landusky Mine Reclamation ACEC	The area would not be designated an ACEC.	<p>The Zortman/Landusky Mine Reclamation ACEC (3,575 acres) would be designated to promote successful reclamation and ensure public safety on BLM lands affected by prior surface and underground mining activities.</p> <p>An NSO stipulation would be applied to all future oil and gas leases. This would support reclamation success by preventing surface disturbance associated with oil and gas exploration and development.</p> <p>The area would be an avoidance area for rights-of-way and an exclusion area for wind energy rights-of-way. This would increase the success of reclamation by preventing potential surface-disturbing activities.</p> <p>BLM would recommend a 20-year withdrawal from mineral entry and location upon expiration of the existing withdrawal in 2015. The area would be closed to solid mineral leasing and mineral material sales. This would support reclamation success by preventing surface disturbance from mining activity.</p>	<p>The area would not be designated an ACEC.</p> <p>The withdrawal would be allowed to expire (2015).</p>		<p>The Zortman/Landusky Mine Reclamation ACEC (2,656 acres) would be designated to promote successful reclamation and ensure public safety on BLM lands affected by prior surface and underground mining activities.</p> <p>The area within the higher elevations of the Little Rocky Mountains TCP (2,604 acres) would be closed to oil and gas leasing to protect the prehistoric and historic archaeological resources in the area.</p> <p>The existing withdrawal will expire in 2015. Through the withdrawal review process the BLM would consider the need for a new withdrawal or right-of-way to promote successful reclamation. The area of the withdrawal</p>

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					<p>or right-of-way would be based on need to maintain and protect infrastructure associated with reclamation activities.</p> <p>The area would be open to mineral material sales associated with the need for reclamation materials and maintenance of existing roads (5-6 miles).</p> <p>The area would be an avoidance area for rights-of-way.</p> <p>The area would be an exclusion area for wind energy rights-of-way.</p> <p>The area would be designated closed to off-road vehicles to maintain the reclamation and ensure public safety until reclamation is completed.</p>
<b>Vegetation – Riparian and Wetland</b>					
Surface-Disturbing Activities	2,188 acres of long-term surface disturbance are anticipated, mostly in the high and moderate potential oil and gas	1,056 acres of long-term surface disturbance are anticipated.  The short-term and long-	1,927 acres of long-term surface disturbance are anticipated, mostly in the high and moderate potential oil and gas	2,202 acres of long-term surface disturbance are anticipated, mostly in the high and moderate potential oil and gas	2,055 acres of long-term surface disturbance are anticipated, mostly in the high and moderate potential oil and gas

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	<p>development areas. Impacts would include direct removal of vegetation on stream banks and around potholes when surface-disturbing activities cannot be moved due to other resource values, and would most likely occur on small, intermittent riparian areas where oil and gas development is most intensive.</p> <p>The short-term and long-term surface disturbance would be the highest under this alternative and would have the most potential to affect riparian and wetland values.</p>	<p>term surface disturbance would be the lowest under this alternative and would have the least potential to affect riparian and wetland values.</p>	<p>development areas. Impacts would include direct removal of vegetation on stream banks and around potholes when surface-disturbing activities cannot be moved due to other resource values, and would most likely occur on small, intermittent riparian areas where oil and gas development is most intensive.</p>	<p>development areas. Impacts would include direct removal of vegetation on stream banks and around potholes when surface-disturbing activities cannot be moved due to other resource values, and would most likely occur on small, intermittent riparian areas where oil and gas development is most intensive.</p> <p>The short-term and long-term surface disturbance would be the highest under this alternative and would have the most potential to affect riparian and wetland values.</p>	<p>development areas.</p>
Fluid Minerals	<p>Stipulations would apply to 243 miles (25%) and 5,857 acres (11%) of riparian habitat with major constraints (closed or NSO). Of this total, 229 miles (94%) and 5,071 acres (87%) are unleased in the very low potential area.</p> <p>60 miles and 7,410 acres of</p>	<p>Stipulations would apply to 36 miles and 4,513 acres of riparian habitat that are unleased in the high, moderate and low potential areas. The remaining areas have very low development potential or are currently leased. As existing leases expire, a 1/4 mile NSO stipulation</p>	<p>Major constraints (closed or NSO) would apply to 36 miles and 4,513 acres of riparian habitat that are unleased in the high, moderate and low potential areas.</p> <p>All of the lotic and lentic riparian habitat in the high and moderate potential</p>	<p>Major constraints (closed or NSO) would apply to 9 miles and 80 acres of riparian habitat that are unleased in the high, moderate and low potential areas.</p> <p>61 miles and 7,563 acres of riparian habitat not protected by major</p>	<p>Major constraints (closed or NSO) would apply to 14 miles and 207 acres of riparian habitat that are unleased in the high, moderate and low potential areas.</p> <p>50 miles and 7,185 acres of riparian habitat not protected by major</p>

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	riparian habitat are not protected by major constraints in the high and moderate potential areas and could be affected by fluid mineral development.	would be applied to new leases, which would protect more riparian areas from surface disturbance.  All of the lotic and lentic riparian habitat in the high and moderate potential areas that could be affected by fluid mineral development would be protected by major constraints.	areas that could be affected by fluid mineral development would be protected by major constraints.	constraints in the high and moderate potential areas could be affected by fluid minerals development.	constraints in the high and moderate potential areas could be affected by fluid mineral development.
Solid Minerals	390 acres have potential for short-term surface disturbance and 2,495 acres for long-term surface disturbance for solid mineral development.  Overall effects on riparian areas would be small because the high development potential area includes only 52 acres and 11 miles of riparian habitat.	355 acres have potential for short-term and long-term surface disturbance.	355 acres have potential for short-term and long-term surface disturbance.	235 acres have potential for short term surface disturbance and 300 acres for long-term surface disturbance.	355 acres have potential for short-term and long-term surface disturbance.
<b>Visual Resources</b>					
	This alternative includes the following acreages by VRM Class:	This alternative includes the following acreages by VRM Class:	This alternative includes the following acreages by VRM Class:	This alternative includes the following acreages by VRM Class:	This alternative includes the following acreages by VRM Class:

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	Class I 74,506 acres Class II 342,828 acres Class III 58,213 acres Class IV 1,961,928 acres  Surface-disturbing activities would affect 35,541 acres in the short term and 2,581 acres in the long term.	Class I 90,032 acres Class II 977,396 acres Class III 498,298 acres Class IV 871,712 acres  Surface-disturbing activities would affect 62,837 acres in the short term and 2,576 acres in the long term.	Class I 74,506 acres Class II 914,194 acres Class III 521,322 acres Class IV 927,413 acres  Surface-disturbing activities would affect 63,404 acres in the short term and 2,734 acres in the long term.	Class I 74,506 acres Class II 127,439 acres Class III 584,113 acres Class IV 1,651,416 acres  Surface-disturbing activities would affect 63,945 acres in the short term and 2,979 acres in the long term.	Class I 74,506 acres Class II 841,087 acres Class III 521,868 acres Class IV 1,000,013 acres  Surface-disturbing activities would affect 63,404 acres in the short term and 2,734 acres in the long term.
Effects from fluid mineral development would mostly occur within high and moderate potential areas in Blaine, Hill, and Phillips counties and would continue through the life of the plan or term of the leased wells. These effects could be reduced by utilizing VRM class objectives to provide the basis for allowable changes in form, line, color, and texture.					
	The 102,298 acres closed to fluid mineral leasing and 282,062 acres with an NSO stipulation would protect existing visual resources on those acres from surface-disturbing activities related to natural gas development and would benefit scenic quality.	The 3,173,637 acres closed to fluid mineral leasing and 258,560 acres with an NSO stipulation would protect existing visual resources on those acres from surface-disturbing activities related to natural gas development and would benefit scenic quality.	The 218,586 acres closed to fluid mineral leasing and 1,291,160 acres with an NSO stipulation would protect existing visual resources on those acres from surface-disturbing activities related to natural gas development and would benefit scenic quality.	The 74,674 acres closed to fluid mineral leasing and 357,456 acres with an NSO stipulation would protect existing visual resources on those acres from surface-disturbing activities related to natural gas development and would benefit scenic quality.	The 152,702 acres closed to fluid mineral leasing and 1,711,378 acres with an NSO stipulation would protect existing visual resources on those acres from surface-disturbing activities related to natural gas development and would benefit scenic quality.
	Approximately 6,860 acres of short-term disturbance and 4,740 acres of long-term disturbance are projected for management-ignited prescribed fire actions. Approximately 3,500 acres of short-term	Approximately 26,660 acres would have short-term disturbance from prescribed fire, and 7,820 acres would have short-term disturbance from mechanical treatment actions. Surface disturbance from these actions would reduce recreational opportunities and degrade the quality of recreational experiences in the short term, but would improve opportunities and experiences in the long term. The long-term benefits of prescribed fire and forest and woodland treatments (improved vegetation composition and wildlife habitat) may, in turn, improve scenic quality and increase recreational opportunities for wildlife viewing, hiking and hunting.			

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	<p>disturbance are projected for silviculture treatments, fuels management, and forest product harvesting actions. The long-term benefits of prescribed fire and forest and woodland treatments (improved vegetation composition and wildlife habitat) may, in turn, improve scenic quality and increase recreational opportunities for wildlife viewing, hiking and hunting.</p>				
	<p>OHV activities can affect visual resources by adding different colored, linear forms that contrast with the forms and colors of the characteristic landscape. OHV use on roads, primitive roads and trails could increase color contrasts between the travel surface and surrounding vegetation through continued vegetation loss and soil erosion.</p>				
	<p>OHV designations would include 124 acres as open; 2,355,457 acres as limited to existing roads, primitive roads and trails, and 7,429 acres in the Sweet Grass Hills ACEC as closed to OHV use. 74,428 acres in the WSAs would be limited to identified primitive routes.</p>	<p>OHV designations would include 2,355,497 acres as limited to existing roads, primitive roads and trails and 7,513 acres (Fresno OHV area and Sweet Grass Hills ACEC) as closed to OHV use. 74,428 acres in the WSAs would be limited to identified primitive routes.</p>	<p>OHV designations would include 2,355,457 acres as limited to existing roads, primitive roads and trails and 7,513 acres (Fresno OHV area, Glasgow OHV area, and Sweet Grass Hills ACEC) as closed to OHV use. 74,428 acres in the WSAs would be limited to identified primitive routes.</p> <p>Motorized game retrieval off road on 387,118 acres could affect visual</p>	<p>OHV designations would include 305 acres as open; and 2,362,705 acres as limited to existing roads, primitive roads and trails. 74,428 acres in the WSAs would be limited to identified primitive routes.</p> <p>Motorized game retrieval off road on 2,290,669 acres would have the greatest potential to affect visual resources in the planning area.</p>	<p>OHV designations would include 165 acres as open (Fresno and Glasgow OHV areas), 2,355,967 acres as limited to existing roads, primitive roads and trails and 7,429 acres (Sweet Grass Hills ACEC) as closed to OHV use. 74,428 acres in the WSAs would be limited to identified primitive routes.</p> <p>Options for motorized game retrieval off road</p>

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			resources in those areas.		could be considered during subsequent site-specific travel management planning, which could affect visual resources in the areas considered.
<b>Water Resources</b>					
	<p>Surface-disturbing activities affect water resources to varying degrees depending on the type, amount, and location of disturbance; time of year; precipitation; and the condition and types of present and surrounding soil and vegetation. Surface-disturbing activities lead to alterations in the chemical, physical, and biological integrity of water when vegetation and protective crusts are removed or manipulated, when contaminants are introduced, or when natural soil architecture and functionality is disrupted. Protecting the quality and quantity of water for ourselves and future generations consists of the BLM adhering to the objectives of the federal Clean Water Act to restore and maintain the chemical, physical, and biological integrity of the nation’s water. Site-specific mitigation measures, BMPs, and reclamation standards would be implemented and monitored in order to minimize effects to water resources.</p>				
	<p>Approximately 218,600 acres of new surface disturbances are anticipated on all land ownerships over the next 20 years.</p> <p>On BLM surface, mostly in the high and moderate potential oil and gas development areas, approximately 2,422 acres of long-term disturbance are anticipated.</p> <p>This alternative would provide an intermediate level of protection and</p>	<p>Approximately 230,600 acres of new surface disturbances are anticipated on all land ownerships over the next 20 years.</p> <p>On BLM surface, approximately 1,544 acres of long-term disturbance are anticipated.</p> <p>This alternative would be the most protective and would provide the greatest reductions of cumulative impacts by implementing restrictions on many</p>	<p>Approximately 236,900 acres of new surface disturbances are anticipated on all land ownerships over the next 20 years.</p> <p>On BLM surface, mostly in the high and moderate potential oil and gas development areas, approximately 2,238 acres of long-term disturbance are anticipated.</p> <p>This alternative would provide an intermediate level of protection and</p>	<p>Approximately 241,600 acres of new surface disturbances are anticipated on all land ownerships over the next 20 years.</p> <p>On BLM surface, mostly in the high and moderate potential oil and gas development areas, approximately 2,436 acres of long-term disturbance are anticipated.</p> <p>This alternative would be the least protective and would result in the greatest</p>	<p>Approximately 238,700 acres of new surface disturbances are anticipated on all land ownerships over the next 20 years.</p> <p>On BLM surface, mostly in the high and moderate potential oil and gas development areas, approximately 2,337 acres of long-term disturbance are anticipated.</p> <p>This alternative would provide an intermediate level of protection and</p>

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	mitigation of cumulative impacts.	surface-disturbing activities.	mitigation of cumulative impacts.	cumulative impacts.	mitigation of cumulative impacts.
<b>Wilderness Characteristics</b>					
	<p>Allowable uses and management actions that could affect wilderness characteristics include surface development and associated infrastructures such as vegetation management, range improvement projects, or more intensive activities such as natural gas development.</p>				
	<p>No actions would be taken to manage lands with wilderness characteristics to retain their wilderness qualities under this alternative.</p>	<p>All 26 areas totaling 386,428 acres that were found to have wilderness characteristics would be managed to protect wilderness characteristics as a priority over other resource values and multiple uses. A variety of protective measures would be applied to these areas, as described under the applicable resource sections.</p>	<p>Twelve areas totaling 228,395 acres would be managed to protect wilderness characteristics as a priority over other resource values and multiple uses. A variety of protective measures would be applied to these areas, as described under the applicable resource sections. Management proposed for other resources is complementary to maintaining wilderness characteristics on 75,327 acres. Management proposed for other resources may be incompatible with maintaining wilderness characteristics on 82,706 acres.</p>	<p>No actions would be taken to manage lands with wilderness characteristics to retain their size, apparent naturalness, opportunities for solitude, opportunities for primitive and unconfined recreation, or supplemental values. These lands would be managed for other resource values which may be in direct conflict with preservation of wilderness characteristics..</p>	<p>Three areas totaling 16,393 acres would be managed to protect wilderness characteristics as a priority over other resource values and multiple uses. A variety of protective measures would be applied to these areas, as described under the applicable resource sections. Management proposed for other resources is complementary to maintaining wilderness characteristics on 290,865 acres. Management proposed for other resources may be incompatible with maintaining wilderness characteristics on 92,190 acres.</p>
<b>Wildlife</b>					
General	Impacts to wildlife would vary by species and activity. Species-specific mitigation measures would be adopted for all				

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	vary by species and activity.	surface-disturbing activities.			
Fluid Minerals	The 102,298 acres closed to fluid mineral leasing, 282,062 acres with an NSO stipulation, 2,649,242 acres with CSU/TLS stipulations, and 457,849 acres with standard lease terms would protect wildlife habitat on those acres from surface-disturbing activities.	The 3,173,637 acres closed to fluid mineral leasing, 258,560 acres with an NSO stipulation, 3,291 acres with CSU/TLS stipulations, and 55,962 acres with standard lease terms would protect wildlife habitat on those acres from surface-disturbing activities.	The 218,586 acres closed to fluid mineral leasing, 1,291,160 acres with an NSO stipulation, 1,681,990 acres with CSU/TLS stipulations, and 299,713 acres with standard lease terms would protect wildlife habitat on those acres from surface-disturbing activities.	The 74,674 acres closed to fluid mineral leasing, 357,456 acres with an NSO stipulation, 2,461,653 acres with CSU/TLS stipulations, and 597,668 acres with standard lease terms would protect wildlife habitat on those acres from surface-disturbing activities.	The 152,702 acres closed to fluid mineral leasing, 1,711,378 acres with an NSO stipulation, 1,460,096 acres with CSU/TLS stipulations, and 167,274 acres with standard lease terms would protect wildlife habitat on those acres from surface-disturbing activities.
<i>Anticipated Well Density (Wells per Square Mile) on BLM Land</i>					
High (existing – 0.44)	2.34	2.64	2.14	2.38	2.22
Moderate (existing – 0.44)	3.33	2.36	3.06	3.34	3.23
Low (existing – 0.44)	1.18	0.87	1.12	1.18	1.15
Very Low (existing – 0.44)	0.03	0.02	0.02	0.03	0.03
	The greatest impact in the long-term would occur in the high development potential areas, including the Bears Paw South area, where mean well densities would rise from the current 0.44 wells/mi <sup>2</sup> to 2.34	The greatest impact during the life of the plan would occur in the high development potential areas, including the Bears Paw South area, where mean well densities would rise from the current 0.44	The greatest impact during the life of the plan would occur in the high development potential areas, including the Bears Paw South area, where mean well densities would rise from the current 0.44	Mean well densities on BLM land in each of the oil and gas development potential areas would exceed 1.04 wells/mi <sup>2</sup> except in the very low development potential areas (0.03 wells per	Mean well densities on BLM land in each of the oil and gas development potential areas would exceed 1.04 wells/mi <sup>2</sup> except in the very low development potential areas (0.05 wells per

**Table 2.29  
Summary Comparison of Environmental Consequences**

<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
	<p>wells/mi<sup>2</sup> (a 420% increase) and mean road densities would increase from 0.47 to 1.21 miles of road/mi<sup>2</sup>. This would result in a direct and indirect loss of most habitat for big game in the high development potential areas.</p>	<p>wells/mi<sup>2</sup> to 2.64 wells/mi<sup>2</sup> (a 587% increase) and road densities would increase from 0.47 to 1.14 miles of road/mi<sup>2</sup>. This would result in an increase in direct and indirect loss of habitat for big game in the high development potential areas but mean well densities on BLM land would not exceed the upper threshold.</p>	<p>wells/mi<sup>2</sup> to 2.14 wells/mi<sup>2</sup> (a 408% increase) and road densities would increase from 0.47 to 1.15 miles of road/mi<sup>2</sup>. This would result in a direct and indirect loss of most habitat for big game in the high development potential areas.</p>	<p>square mile). Road densities would exceed the upper threshold in the moderate development potential area and the lower threshold in the high and low development potential areas (Table 4.96). A significant decline in populations of big game animals would be expected within all potential areas except in the very low development potential area because of the density of wells and roads.</p>	<p>square mile). Road densities would exceed the upper threshold in the moderate development potential area and the lower threshold in the high and low development potential areas (Table 4.96). A significant decline in populations of big game animals would be expected within high, moderate and low potential areas except in the very low development potential areas because of the density of wells and roads.</p>
Greater Sage-Grouse	Not applicable.	<p>Protection Priority Areas for Greater Sage-Grouse (930,265 acres) and Priority Areas for grassland birds/Greater Sage-Grouse (461,220 acres) would be established and managed as ACECs which would minimize additional impacts to wildlife resources in these areas.</p>	<p>Protection Priority Areas for Greater Sage-Grouse (930,265 acres) and Priority Areas for grassland birds/Greater Sage-Grouse (298,772 acres) would be established which would minimize additional impacts to wildlife resources in these areas.</p>	Not applicable.	<p>PHMAs for Greater Sage-Grouse (1,006,312 acres) and PHMAs for grassland birds/Greater Sage-Grouse (426,355 acres) would be established which would minimize additional impacts to wildlife resources in these areas.</p> <p>Approximately 927,000 acres in south Phillips and Valley Counties would be designated as Sagebrush Focal Areas (SFA). Major constraints on the use and</p>

<p align="center"><b>Table 2.29</b> <b>Summary Comparison of Environmental Consequences</b></p>					
<i>Resource</i>	<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<p><i>Throughout the planning area, BLM-authorized activities associated with all resources and all resource use programs would be subject to mitigation and minimization guidelines and Best Management Practices (BMPs) (Appendix C), including specific Mitigation Measures and Conservation Actions for Greater Sage-Grouse (Appendix M). For analysis purposes, it has been assumed that these practices and conservation actions would be implemented during site-specific project planning where appropriate.</i></p> <p><i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i></p>					
					development of other resources would protect the SFA, which represent recognized “strongholds” for Greater Sage-Grouse.

<b>Table 2.30</b>				
<b>Summary Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative</b>				
<i>The threats listed below in bold italicized text are those identified for the Northern Montana population of Greater Sage-Grouse in the USFWS Conservation Objectives Team (COT) Final Report. Threats not known to be present in the planning area are labeled not applicable (N/A) in the table.</i>				
<i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i>				
<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b><i>Sagebrush Elimination (threat present, but localized)</i></b>				
No restrictions on land treatments in all sage-grouse habitat (AH).	<p>Only treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed in priority sage-grouse habitat (PH).</p> <p>Land treatments would be used to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives in general sage-grouse habitat (GH).</p> <p>PH managed so that discrete anthropogenic disturbances cover less than 3% of the total sage-grouse habitat regardless of ownership.</p>	<p>Only treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed in PH.</p> <p>Land treatments would be used to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives in GH.</p>	Land treatments would be used to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives in AH.	<p>Treatments that conserve, enhance or restore Greater Sage-Grouse habitat would be allowed in PH as well as treatments that benefit other resources and do not adversely affect Greater Sage-Grouse or their habitat.</p> <p>Land treatments would be used to achieve and maintain fire regimes, and watershed, grazing management, and wildlife objectives in GH.</p>
<b><i>Agricultural Conversion (present, but localized)</i></b>				
Agricultural conversion is not occurring or permitted on public land. The BLM has no management authority over the conversion of private land to agricultural use.				
<b><i>Fire (present, but localized)</i></b>				
The BLM would protect sensitive status species habitat (such as sage-grouse) during suppression and prescribed fire activities in AH.				
Fire management-related activities, including prescribed fire, should preserve or enhance the habitat quality for sage-grouse and other sensitive status species in AH.				
Wildfire suppression facilities shall be located to the extent possible in areas that minimize disturbance to high quality sage-grouse habitat.				
<b><i>Weeds/Annual Grasses (present, but localized)</i></b>				
Noxious weeds would be managed by various methods that include cultural, physical, biological, and chemical controls or other land practices in AH.				
The BLM would continue cooperative agreements for weed control with county and state entities in AH.				
Management efforts would be coordinated with other federal, state, and county agencies, weed management areas, and private landowners and organizations in AH.				

<b>Table 2.30</b>				
<b>Summary Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative</b>				
<i>The threats listed below in bold italicized text are those identified for the Northern Montana population of Greater Sage-Grouse in the USFWS Conservation Objectives Team (COT) Final Report. Threats not known to be present in the planning area are labeled not applicable (N/A) in the table.</i>				
<i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i>				
<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
Weed seed free forage would be used on BLM land in AH.				
<b>Energy (threat is present and widespread)</b>				
<b>Oil and Gas Leasing</b>				
0.25 mi. NSO lek buffer in AH	Closed in AH	CSU and density cap in PH 1.0 mi. NSO lek buffer in GH	0.6 mi. NSO lek buffer in AH	NSO in PH 0.6 mi. NSO lek buffer in GH
<b>Solar and Wind Energy ROWs</b>				
Open in AH	Exclusion areas in AH	Exclusion areas in PH Avoidance areas in GH	Open in AH	Exclusion areas in PH Avoidance areas in GH
<b>Geothermal leasing</b>				
Open in AH	Closed in PH Open in GH	Closed in PH Open in GH	Open in AH	Closed in PH Open in GH
<b>Infrastructure (threat is present and widespread)</b>				
<b>General ROWs</b>				
Open in AH	Exclusion areas in PH Avoidance areas in GH	Open in AH	Open in AH	Avoidance areas in PH Open in GH
<b>Range Improvements</b>				
Range improvements (primarily reservoirs, fences and land treatments) would be built to facilitate livestock management in AH.	Existing structural range improvements and location of supplements (salt or protein blocks) in PH would be evaluated to make sure they conserve, enhance or restore sage-grouse habitat.  If portions of existing fences in PH are found to pose a threat to Greater Sage-Grouse, they would be mitigated through moving or modifying posts, increasing the visibility of the fences by flagging, or by designing “take-down” fences.  New water pits and impoundments would be designed to reduce or eliminate augmenting threats from West Nile virus in AH.			
<b>Grazing (threat is present and widespread)</b>				
Standards for Rangeland Health and Guidelines for Livestock Grazing Management would be followed in AH.				
Standards and Guidelines followed in AH.	Site-specific sage-grouse habitat and management objectives would be developed for all allotments in PH.	Site-specific sage-grouse habitat and management objectives would be developed for all allotments in PH.	Standards and Guidelines would be followed in AH.	Site-specific sage-grouse habitat and management objectives would be developed for all allotments in PH.

<b>Table 2.30</b>				
<b>Summary Comparison of Alleviated Threats to Greater Sage-Grouse by Alternative</b>				
<i>The threats listed below in bold italicized text are those identified for the Northern Montana population of Greater Sage-Grouse in the USFWS Conservation Objectives Team (COT) Final Report. Threats not known to be present in the planning area are labeled not applicable (N/A) in the table.</i>				
<i>The Proposed RMP appears as Alternative E (Preferred Alternative), which is a modification of the Alternative E that appears in the Draft RMP/EIS.</i>				
<i>Alternative A (Current Management)</i>	<i>Alternative B</i>	<i>Alternative C</i>	<i>Alternative D</i>	<i>Alternative E (Preferred Alternative)</i>
<b>Recreation (present, but localized)</b>				
All motorized wheeled travel is restricted to existing roads, primitive roads and trails in AH.				
No restrictions on sage-grouse viewing in AH.				
AH open to over-snow vehicles.  AH low-moderate priority for future route-specific travel management planning.	PH closed to over-snow vehicles.  PH high priority for future route-specific travel management planning.  GH low-moderate priority for future route-specific travel management planning.	AH open to over-snow vehicles.  PH moderate-high priority for future route-specific travel management planning.  GH low-moderate priority for future route-specific travel management planning.	AH open to over-snow vehicles.  PH moderate-high priority for future route-specific travel management planning.  GH low-moderate priority for future route-specific travel management planning.	AH open to over-snow vehicles.  PH high priority for future route-specific travel management planning.  GH low-moderate priority for future route-specific travel management planning.
<b>Isolated/Small Size (threat is not known to be present)</b>				
N/A				
<b>Conifers (threat is not known to be present)</b>				
N/A				
<b>Mining (threat is not known to be present)</b>				
N/A				
<b>Free-Roaming Equids (threat is not known to be present)</b>				
N/A				
<b>Urbanization (threat is not known to be present)</b>				
N/A				



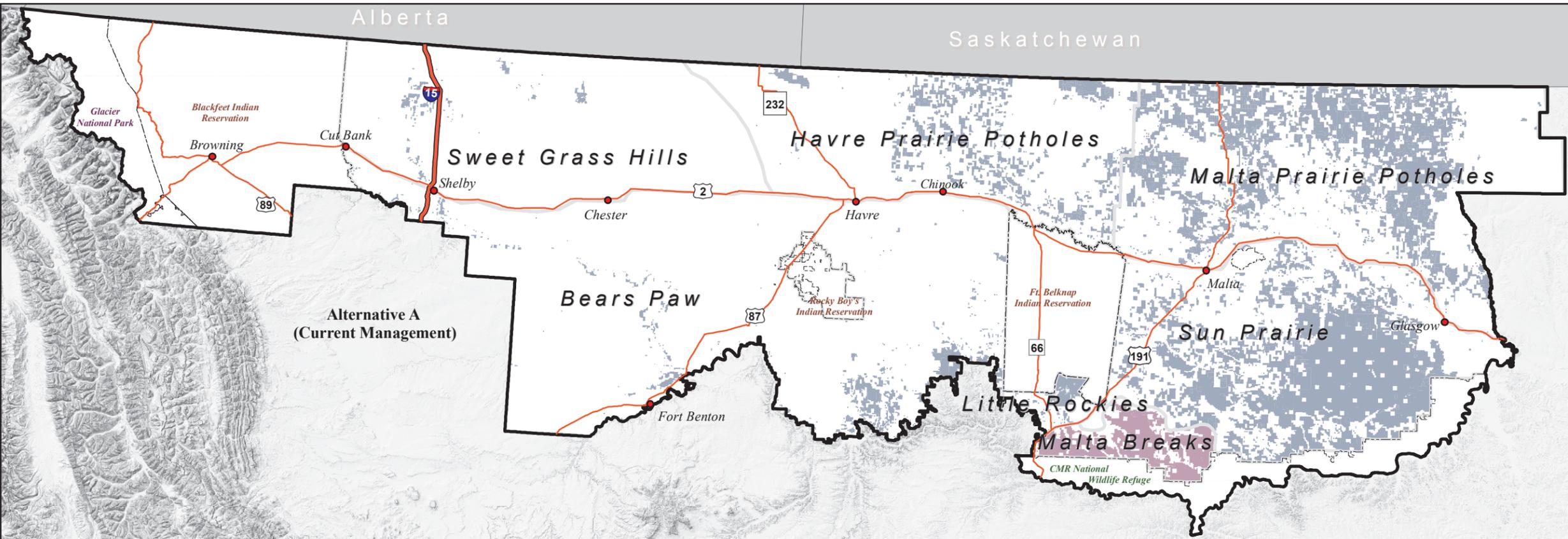


### Map 2.1

#### Fire Management Units (FMU) Alternatives A & E (Preferred)



- Management Category B
- Management Category C
- Fire Management Unit
- RMP Boundary
- Interstate
- Highway or State Route
- Towns



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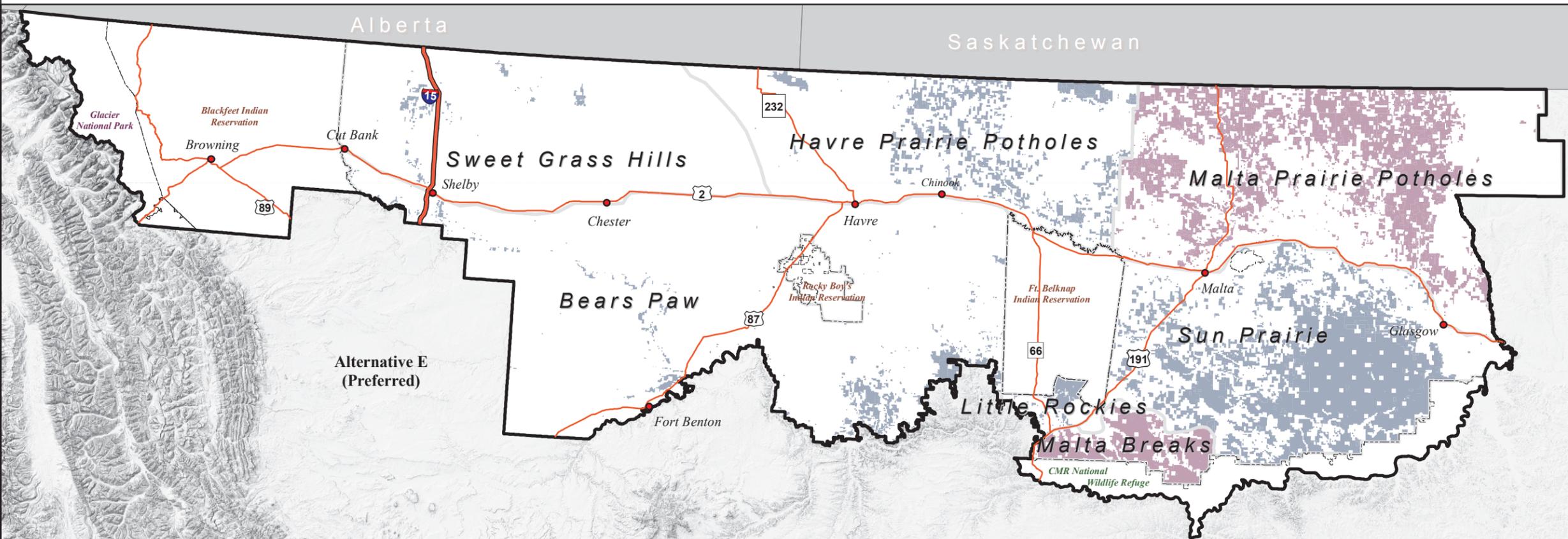
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Maps show the Fire Management Units (FMUs) by category for the planning area. Under Category B, unplanned ignitions are likely to cause negative effects. Under Category C fire is desired to manage ecosystems, but current vegetative condition creates constraints on use.

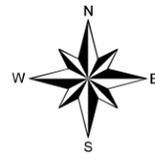
Boundaries are not intended to confer authority, responsibility, or jurisdiction over lands and waters that are not administered by the BLM. Boundaries reflect the fact that these lands and waters are essential components of comprehensively managing unplanned fires.

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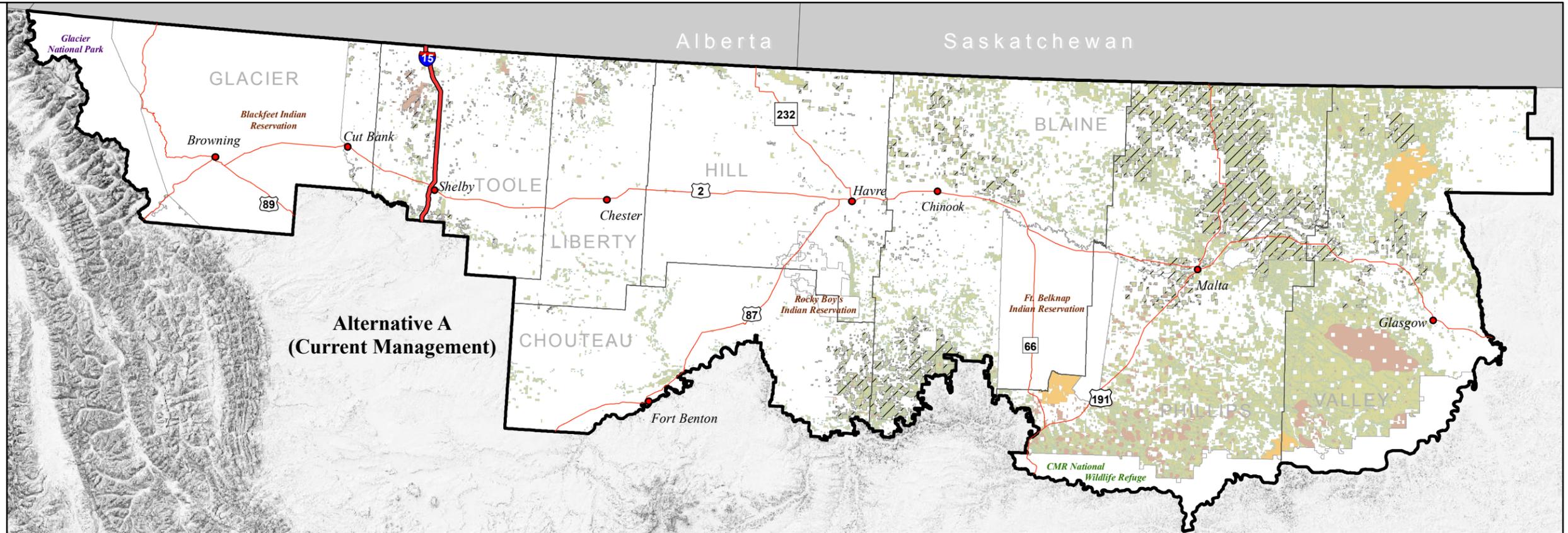
**Fluid Minerals Leasing Stipulations  
for Future Leasing  
Alternatives A & B**



Maps show the Oil and Gas Lease Stipulations for Alternatives A and B. Stipulations would apply only to those minerals administered by the BLM.

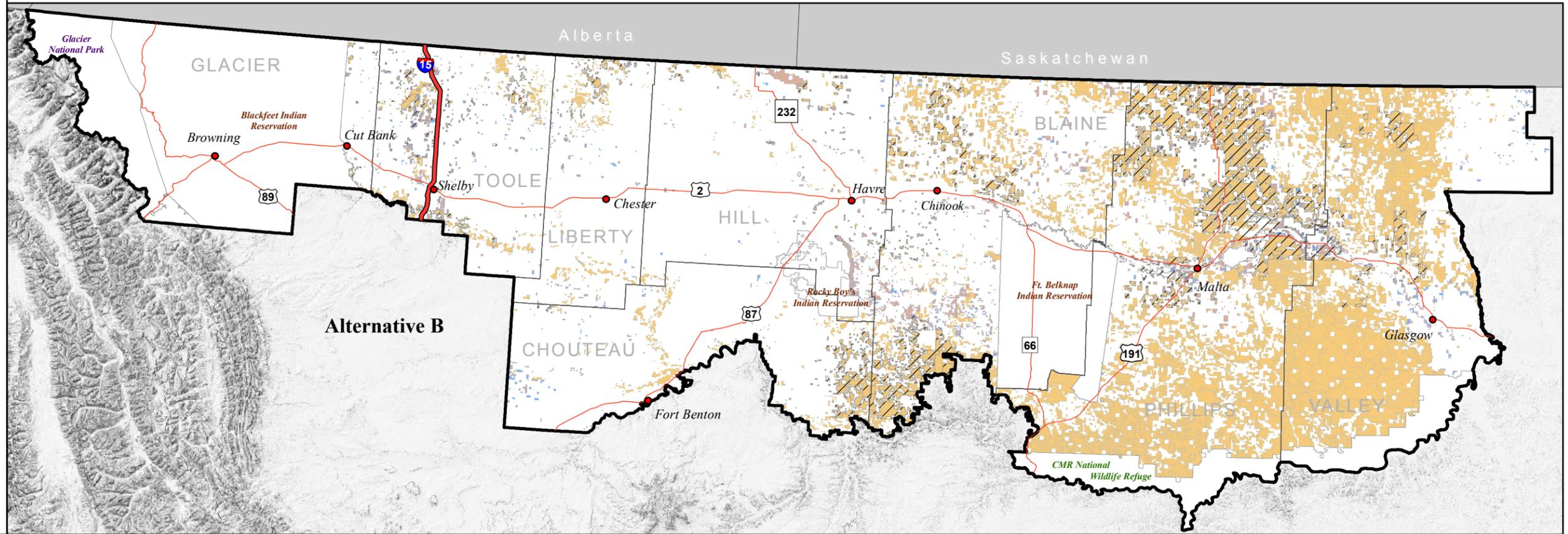
- Closed To Leasing
- No Surface Occupancy
- Controlled Surface Use and Timing Limitations
- Standard Lease Terms Only
- Existing Leases
- Not Analyzed
- County
- RMP boundary
- Interstate
- Highway or State Route
- Town

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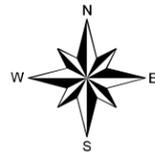






**Map 2.3**

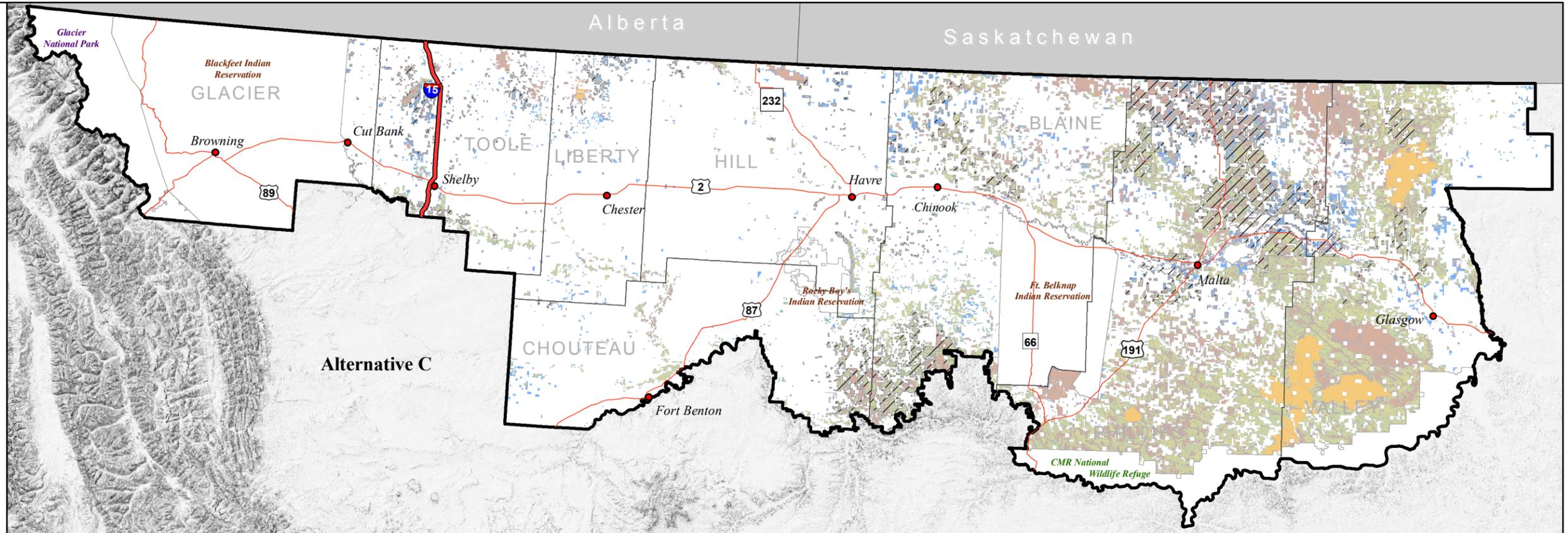
**Fluid Minerals Leasing Stipulations  
for Future Leasing  
Alternatives C & D**



Maps show the Oil and Gas Lease Stipulations for Alternatives C and D. Stipulations would apply only to those minerals administered by the BLM.

- Closed To Leasing
- No Surface Occupancy
- Controlled Surface Use and Timing Limitations
- Standard Lease Terms Only
- Existing Leases
- Not Analyzed
- County
- RMP boundary
- Interstate
- Highway or State Route
- Town

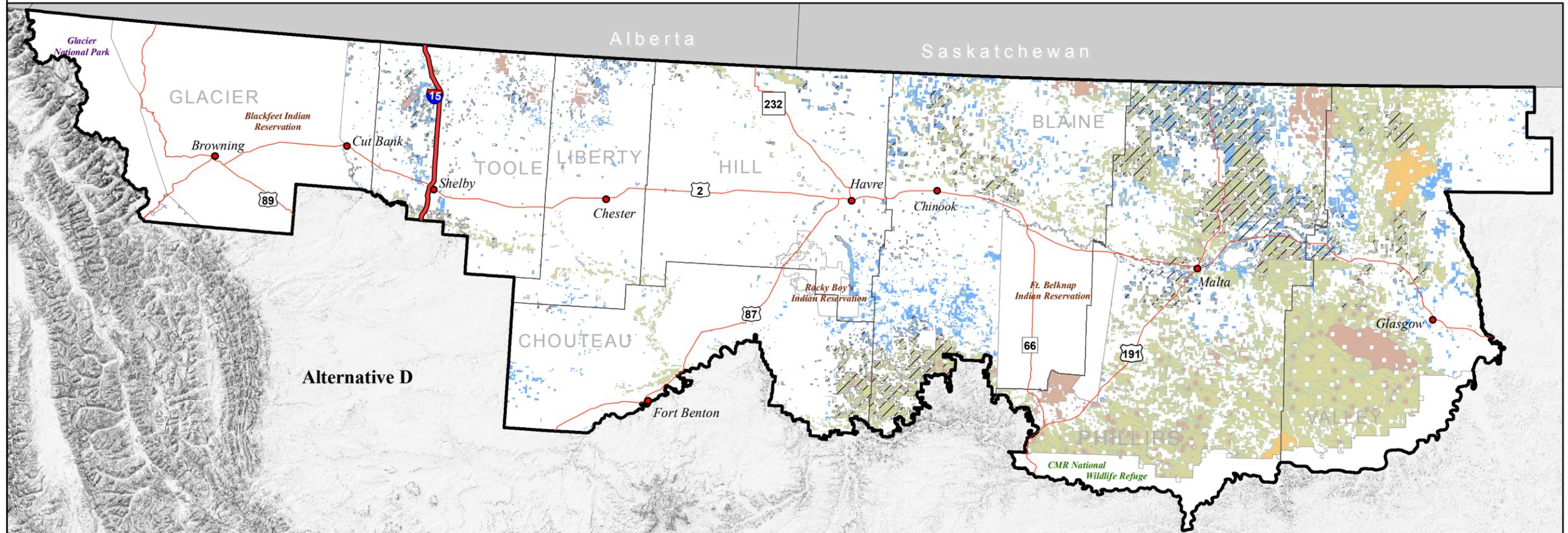
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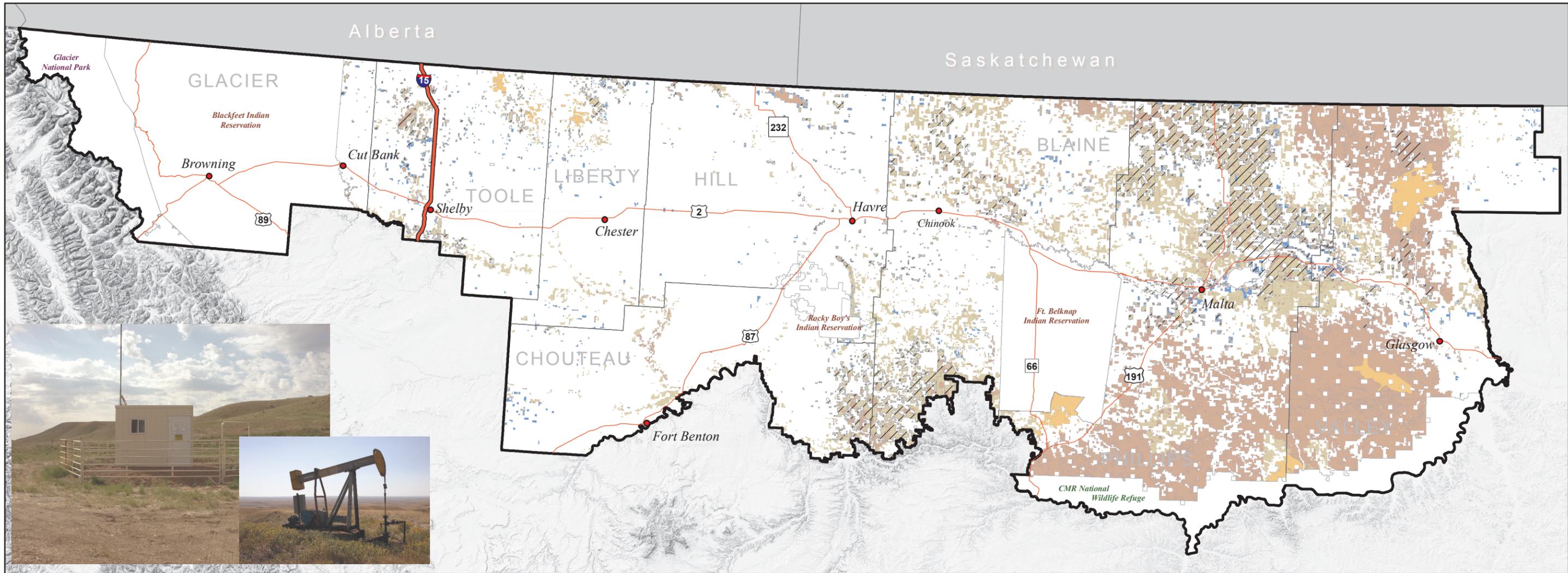
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**Map 2.4**

**Fluid Mineral Leasing Stipulations  
for Future Leasing  
Alternative E (Preferred)**

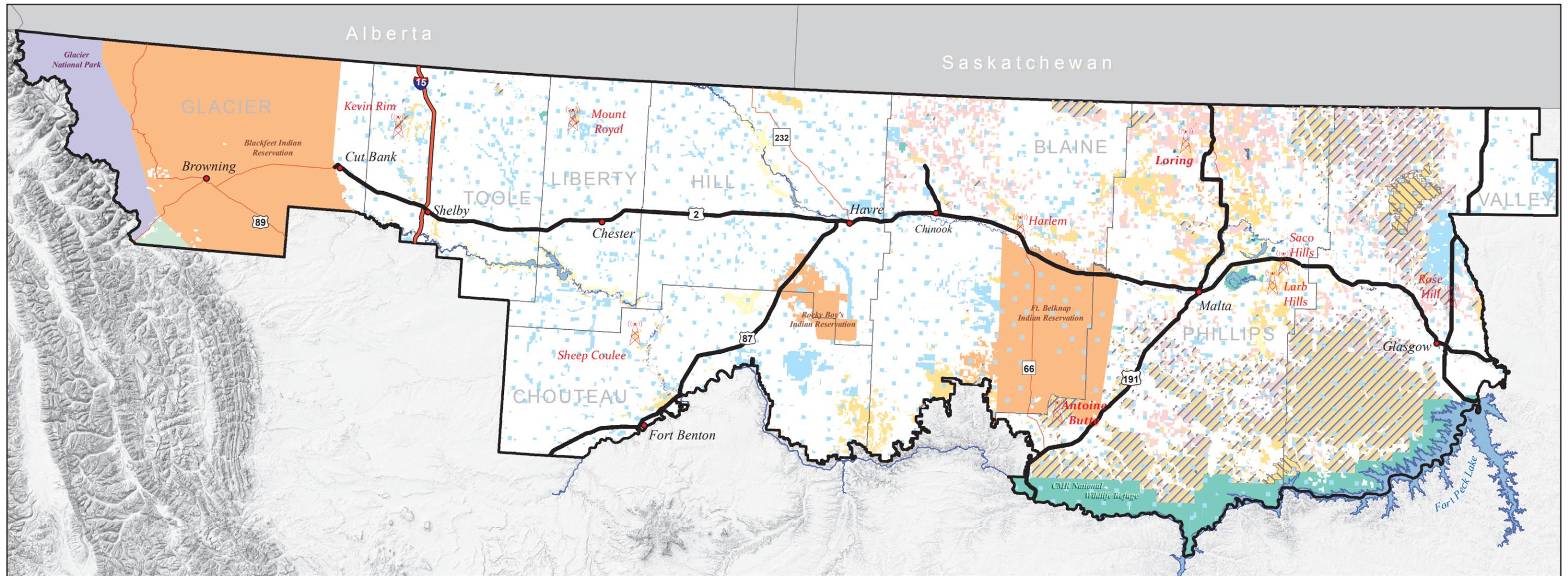
Map shows the Leasing Stipulations for Oil and Gas for Alternative E (Preferred). Stipulations apply only to minerals managed by the BLM.

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- Closed To Leasing
- No Surface Occupancy
- Standard Lease Terms Only
- Minor Constraints
- Existing Leases
- Not Analyzed
- Towns
- Interstate
- Highway or State Route
- RMP Boundary
- County







1:1,500,000 Albers Equal Area, NAD83, Meters

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Map 2.5

Rights-of-Way (ROW)  
Alternative E (Preferred)

Map shows the Transportation/Utility Corridors and Rights-of-Way Avoidance and Exclusion areas for Alternative E along with the existing Communication sites. Corridors are along roadways and extend out one-half mile on either side of the center line.

- Communication Sites
- Transportation/Utility Corridors
- ROW Avoidance Areas
- ROW Exclusion Areas
- RMP Boundary
- County
- Interstate
- Highway or State Route
- Town
- Bureau of Land Management (BLM)
- Bankhead-Jones Land Use Lands
- USDA Forest Service (USFS)
- National Park Service (NPS)
- Bureau of Reclamation
- Indian Reservation
- State
- Private
- US Fish and Wildlife Service (USFWS)
- Water



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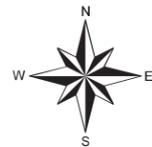


### Map 2.6

### Off-Highway Vehicle (OHV) Designations Alternatives A & E (Preferred)

Maps depict the existing OHV designations for Alternatives A and the proposed OHV designations for Alternative E.

Proposed designations apply only to BLM-administered lands.



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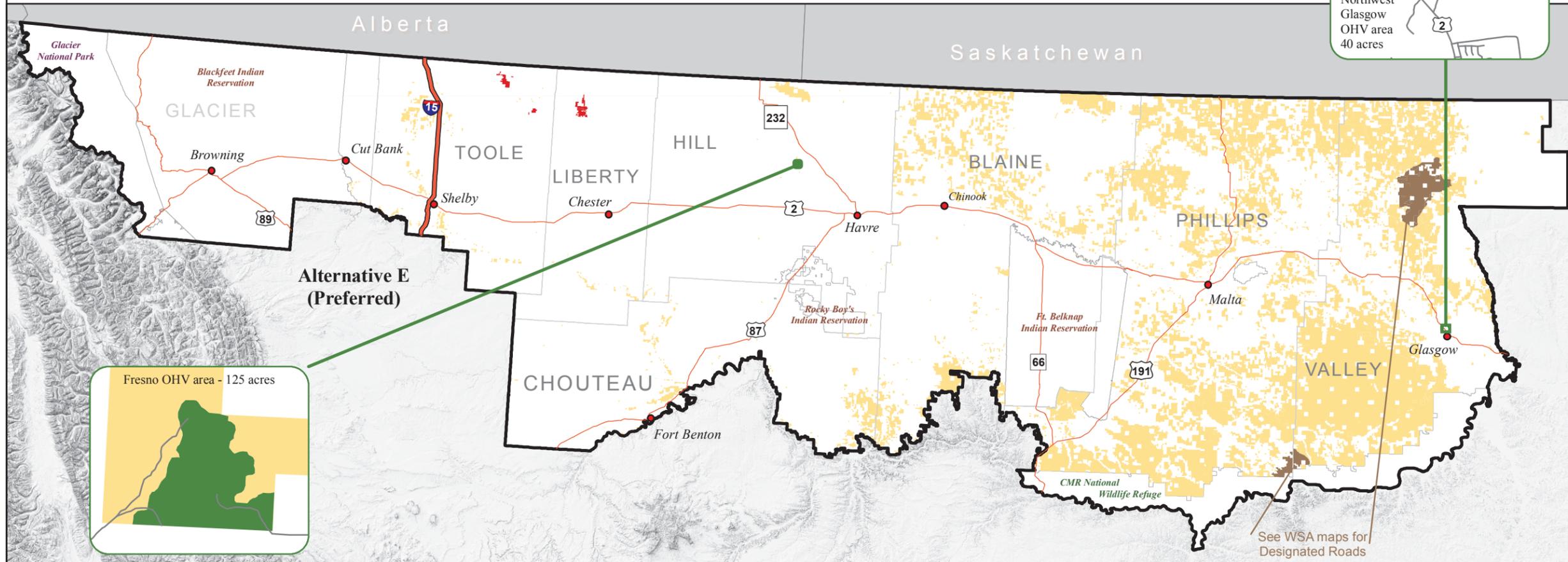
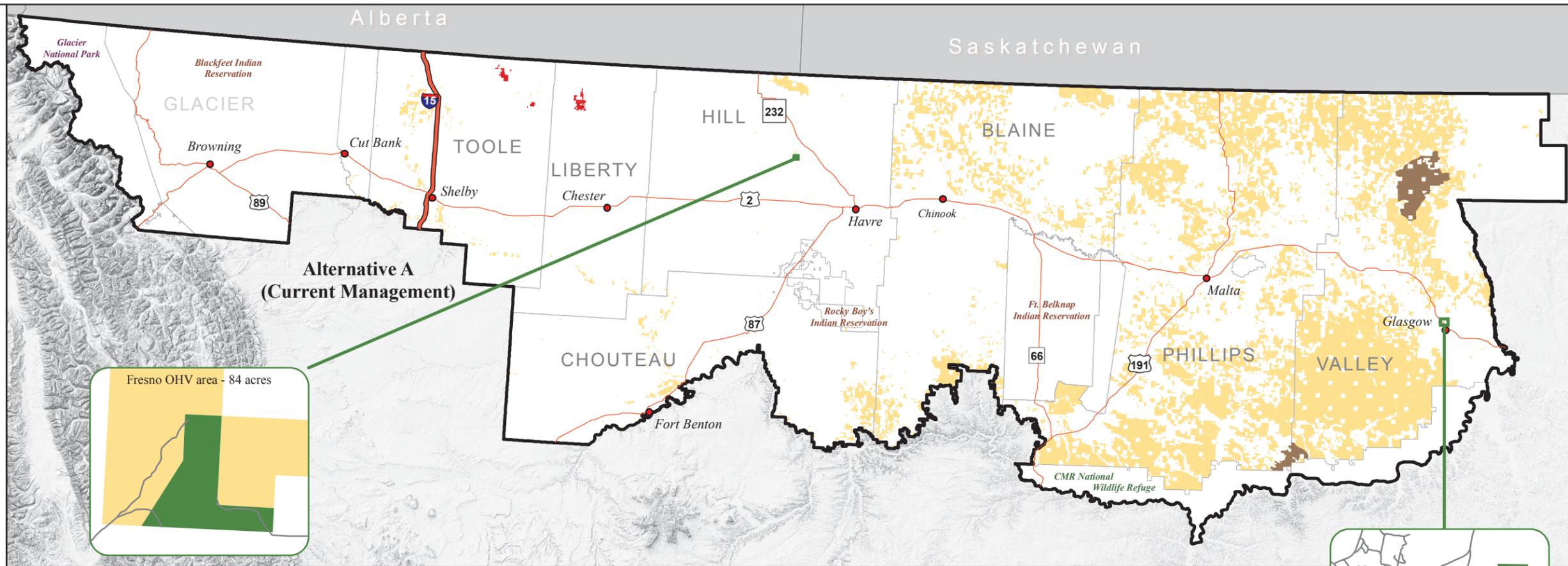
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- Open
- Limited, Designated
- Limited, Existing
- Closed
- RMP Boundary
- County
- Interstate
- Highway or State Route
- Towns

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See WSA maps for Designated Roads

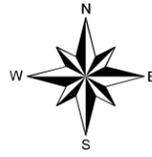


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**Map 2.7**

**Travel Management Areas (TMA)  
Alternatives A & E (Preferred)**

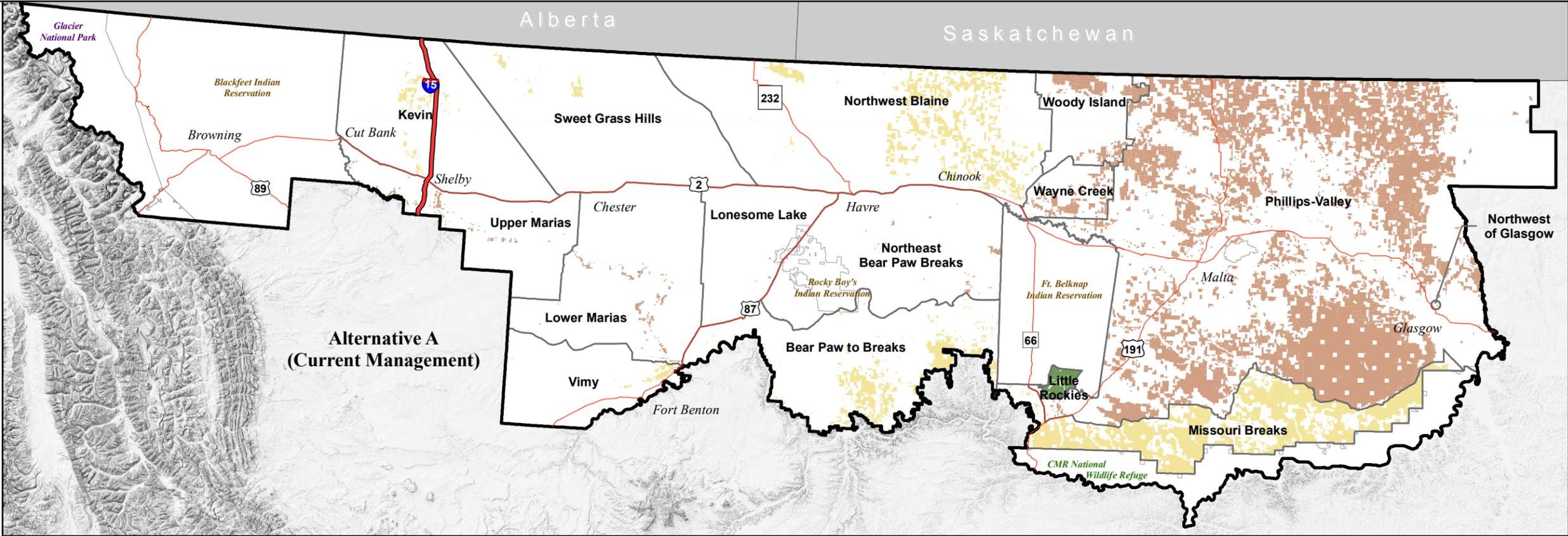


Maps show the Travel Management Areas for Alternatives A & E. Travel Management Areas are not intended to confer authority, responsibility, or jurisdiction over lands and waters that are not administered by the BLM.

**Travel Planning Priority**

- High
- Moderate
- Low
- TMA Boundary
- Interstate
- Highway or State Route
- Town

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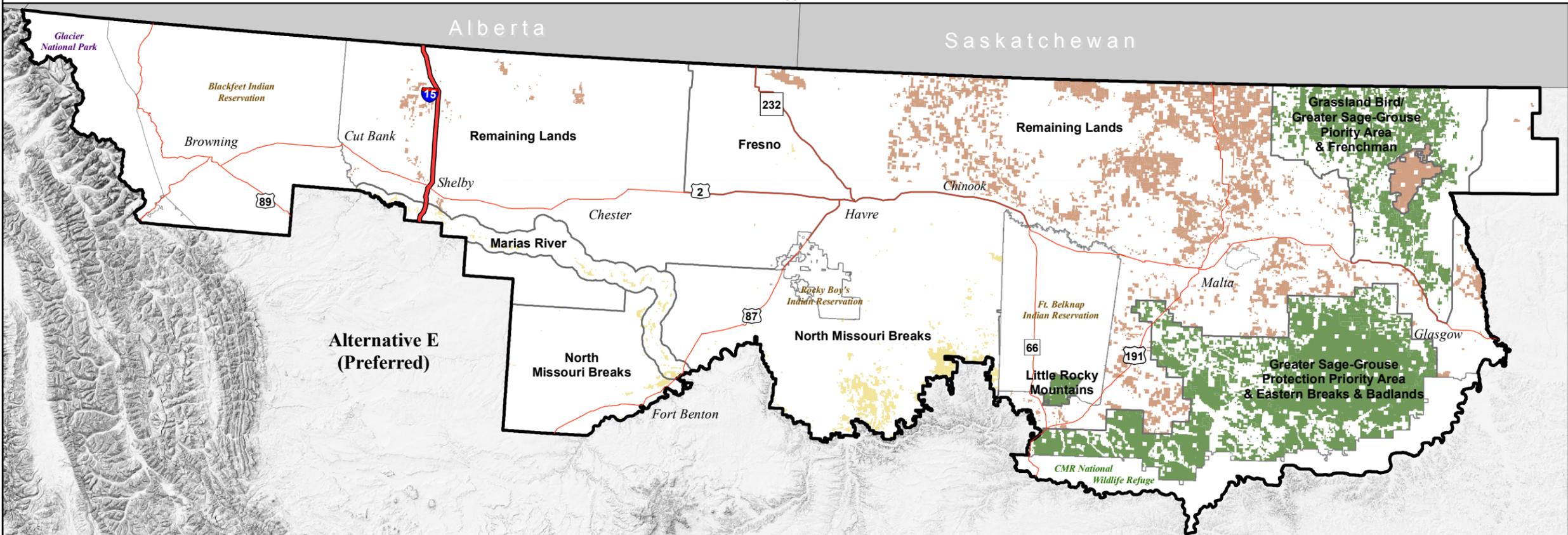


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**Map 2.8**

**Recreation Opportunity Spectrum (ROS) Classifications  
Alternatives A & E (Preferred)**

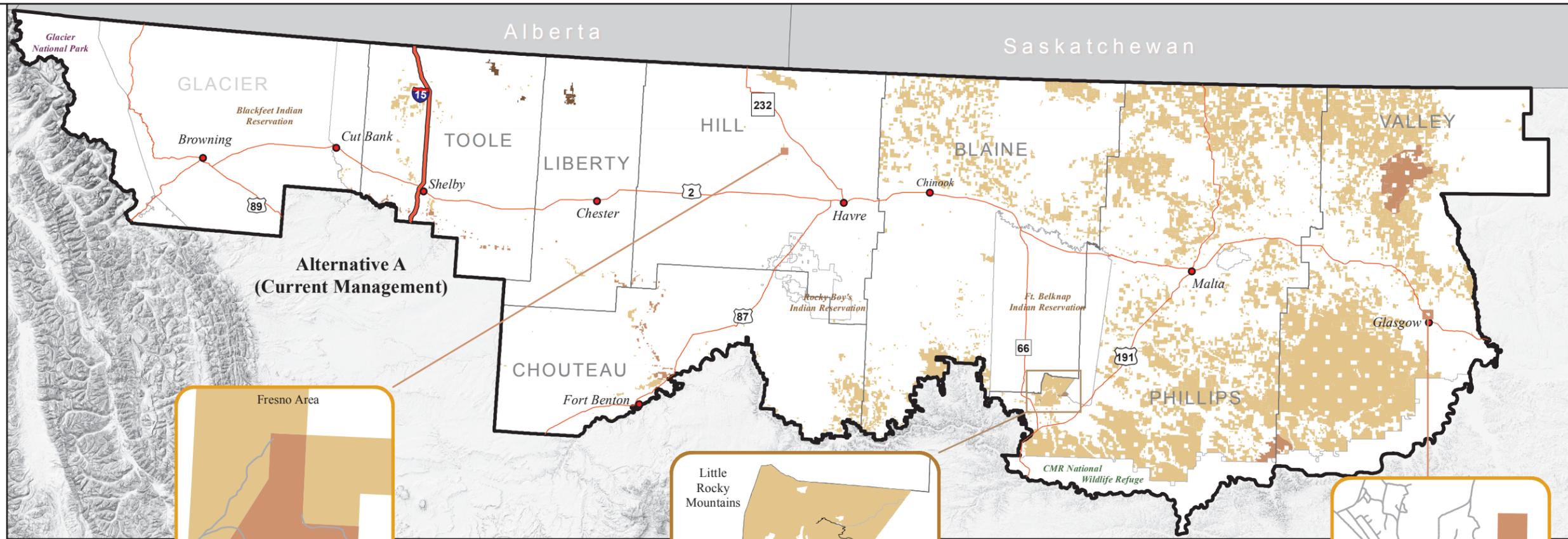
Maps depict the ROS classifications for Alternatives A & E. The classifications are not intended to confer authority, responsibility, or jurisdiction over lands and waters that are not administered by the BLM. Proposed classifications apply only to BLM-administered lands.



**ROS Classification**

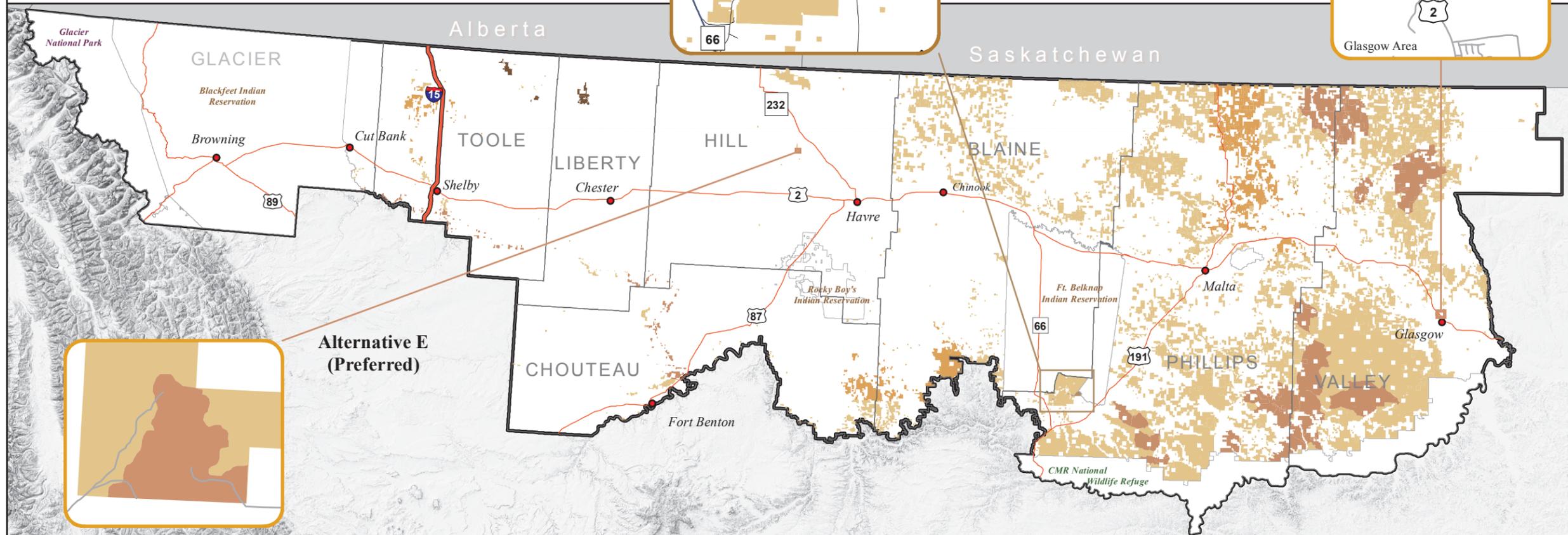
- Roded Natural
- Roded Modified
- Rural
- Semi-primitive Motorized
- Semi-primitive Non-Motorized
- RMP boundary
- County Line
- Interstate
- Highway or State Route
- Town

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### Map 2.9

#### Recreation Management Areas (RMA) Classifications Alternatives A & E (Preferred)

Maps depict the Recreation Management Areas by type, either a Special Recreation Management Area (SRMA), an Extensive Recreation Management Area (ERMA), or as Lands Not Designated (LND), for Alternatives A & E.

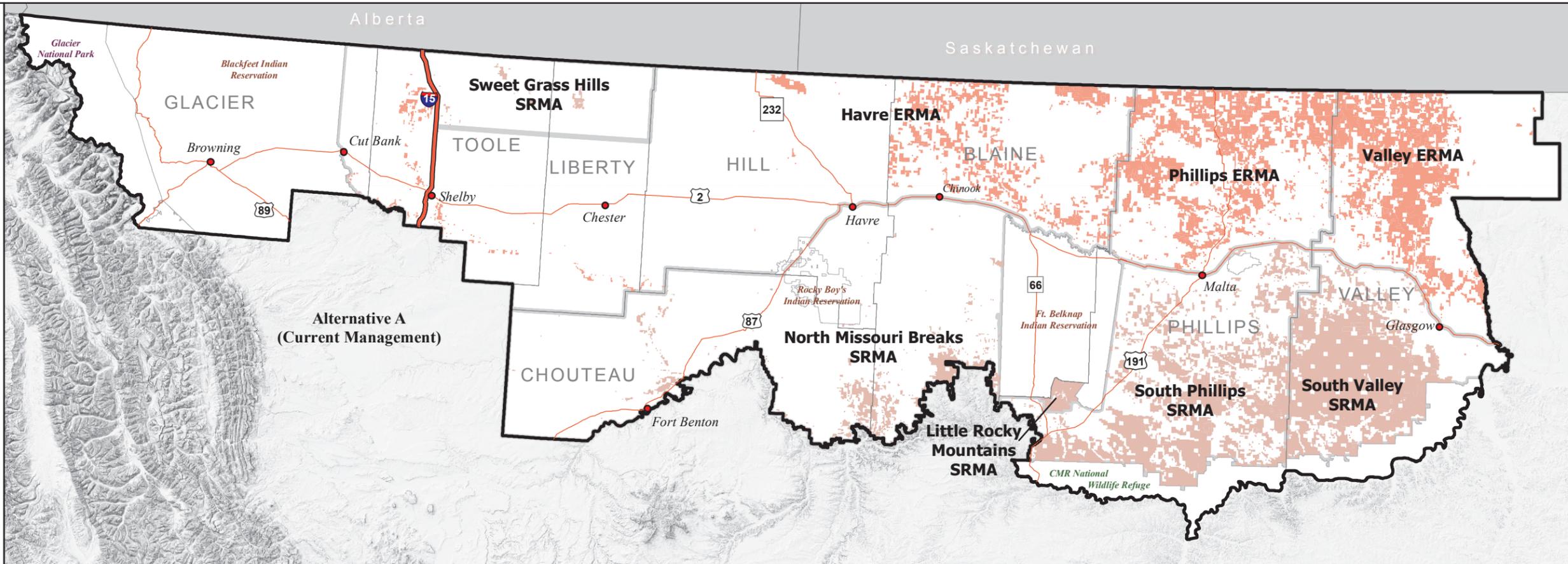
The classifications are not intended to confer authority, responsibility, or jurisdiction over lands and waters that are not administered by the BLM. Proposed classifications apply only to BLM-administered lands within those boundaries.



#### Type of RMA

- ERMA
- SRMA
- LND
- Management Area
- RMP Boundary
- County
- Interstate
- Highway or State Route
- Towns

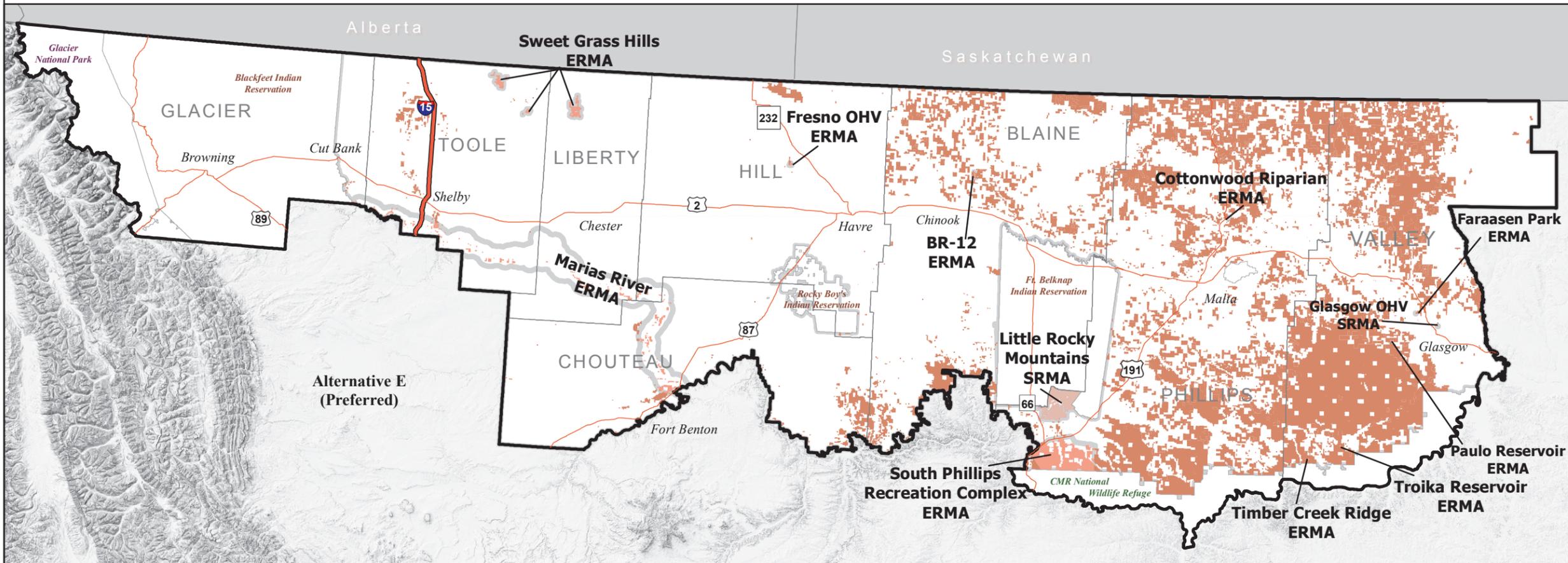
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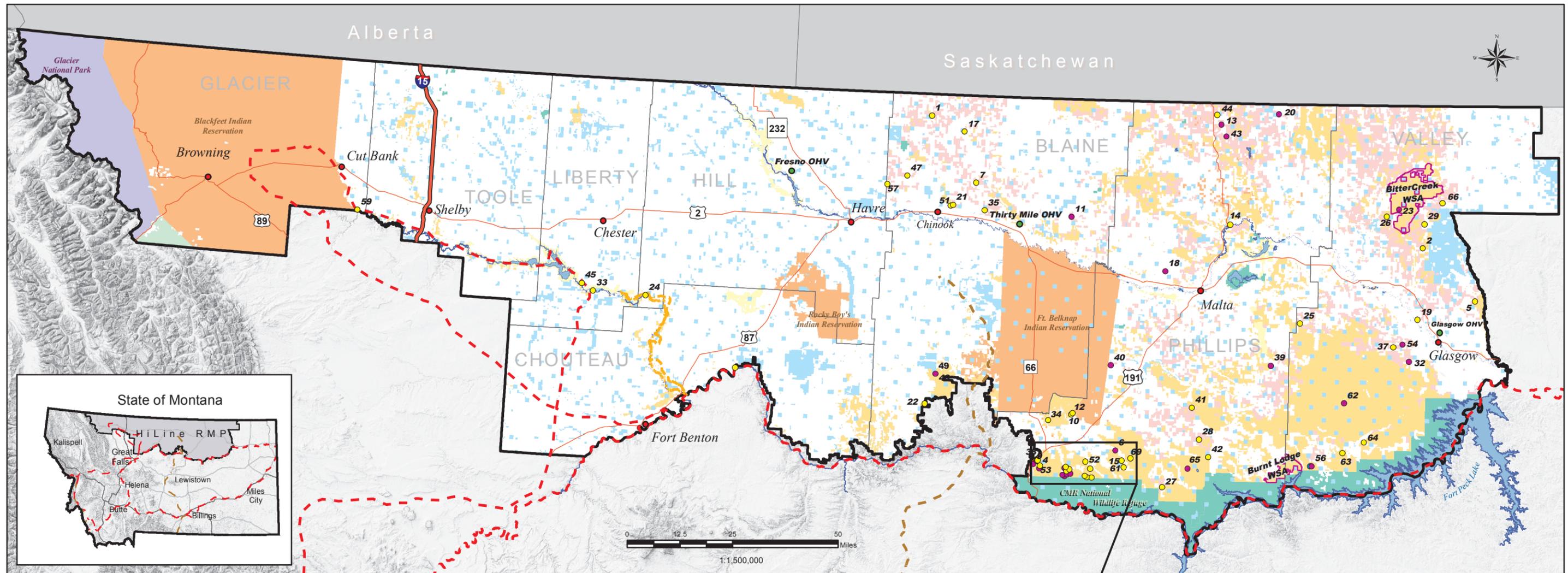
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Albers Equal Area, NAD83, Meters

Name	Description	Name	Description	Name	Description
1 Anita	Fishing Reservoir	24 Gauging Station	Boat Input/Take Out	47 Reser	Fishing Reservoir
2 Atlas	Fishing Reservoir	25 Helen	Fishing Reservoir	48 Ridge	Fishing Reservoir
3 Batosh	Fishing Reservoir	26 Hose	Fishing Reservoir	49 Rotator Cup	Fishing Reservoir
4 Bell Ridge	Fishing Reservoir	27 Karsten Coulee	Fishing Reservoir	50 Sagebrush	Fishing Reservoir
5 Big	Fishing Reservoir	28 King	Fishing Reservoir	51 Salmo	Fishing Reservoir
6 Bison Bone	Fishing Reservoir	29 Langen	Fishing Reservoir	52 Sentinel	Fishing Reservoir
7 BR-12	Wildlife Viewing Area	30 Lark	Fishing Reservoir	53 Shallow	Fishing Reservoir
8 Bresaylor	Fishing Reservoir	31 Loader	Fishing Reservoir	54 Shoot	Fishing Reservoir
9 Buddy	Fishing Reservoir	32 Lunch	Fishing Reservoir	55 Shoulder Blade	Fishing Reservoir
10 Buffington	Day Use Picnic Area	33 Moffat Bridge	Boat Input/Take Out	56 Snow	Fishing Reservoir
11 Bus	Fishing Reservoir	34 Montana Gulch	Camp Grounds	57 South Cassidy (BR-19)	Fishing Reservoir
12 Camp Creek	Camp Grounds	35 North Faber	Fishing Reservoir	58 Spanky	Fishing Reservoir
13 Compton	Fishing Reservoir	36 Paleface	Fishing Reservoir	59 Sullivan Bridge	Boat Input/Take Out
14 Cottonwood	Fishing Reservoir	37 Paulo	Fishing Reservoir	60 Taint	Fishing Reservoir
15 Current	Fishing Reservoir	38 Plutz	Fishing Reservoir	61 Thunder Cloud	Fishing Reservoir
16 Dogtown	Fishing Reservoir	39 PR-109A	Fishing Reservoir	62 Triple Crossing	Fishing Reservoir
17 Don	Fishing Reservoir	40 PR-16	Fishing Reservoir	63 Troika	Fishing Reservoir
18 Douchette (PR-132)	Fishing Reservoir	41 PR-18	Fishing Reservoir	64 Valley	Fishing Reservoir
19 Faraasen Park	Fishing Reservoir	42 PR-20	Fishing Reservoir	65 Wapiti	Fishing Reservoir
20 Flake	Fishing Reservoir	43 PR-22	Fishing Reservoir	66 Ward's Dam	Wildlife Viewing Area
21 Floyd Flynn	Fishing Reservoir	44 PR-54	Fishing Reservoir	67 Wedding	Fishing Reservoir
22 FR	Fishing Reservoir	45 Pugsley Bridge	Fishing Reservoir	68 Whiteface	Fishing Reservoir
23 Gay	Fishing Reservoir	46 Rebate	Fishing Reservoir	69 Wrangler	Fishing Reservoir

Sites shown in purple are for Alternative A only. Sites shown in yellow are in all alternatives.

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### HiLine District

### Map 2.10

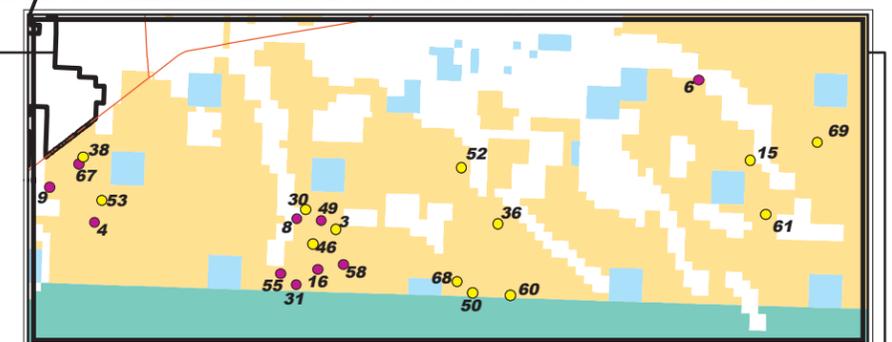
### Recreation Sites and Facilities Comparison of Alternatives

Map shows the general location of the HiLine District recreation sites and the National Historic Trails in the planning area.

Sites listed in purple are for Alternative A only, and sites in yellow are in all alternatives. The Timber Creek Ridge camping area is shown in blue and is for Alternatives D & E only.

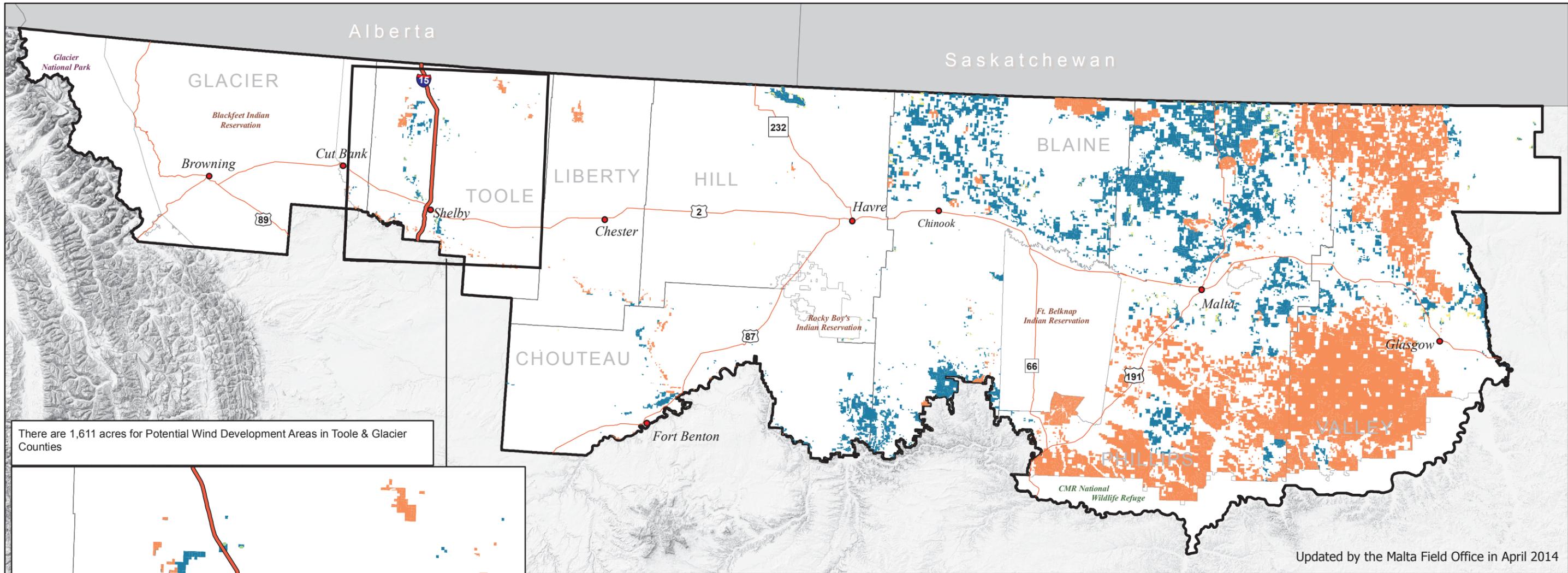
The Fresno and Glasgow OHV sites are open in Alternatives A, D, and E, while the Thirty Mile site is only open in Alternative D.

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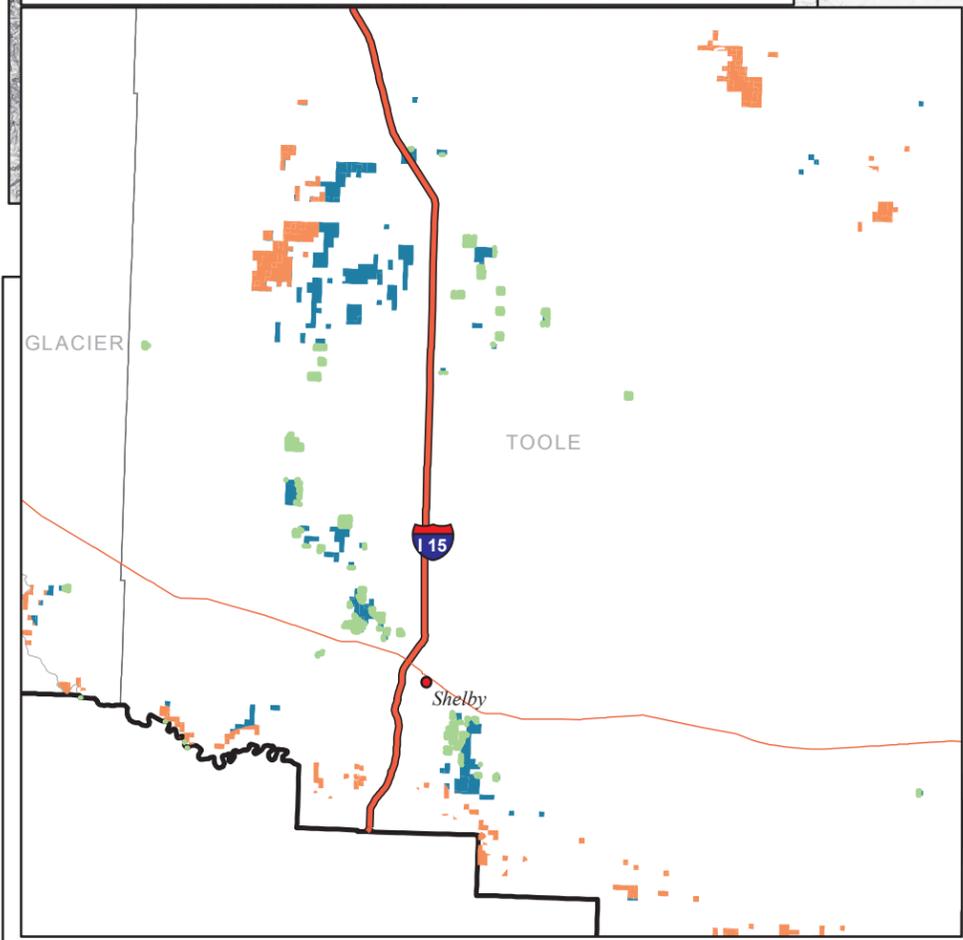


- Recreation Sites (Alternative A only)
- Recreation Sites (All Alternatives)
- Timber Creek Ridge (Alternatives D & E)
- OHV Sites
- Town
- Lewis and Clark National Historic Trail
- Nez Perce National Historic Trail
- Lewis Outbound on the Marias
- Interstate
- Highway or State Route
- WSA Boundary
- County
- RMP Boundary
- Bureau of Land Management (BLM)
- Bankhead-Jones Land Use Lands
- USDA Forest Service (USFS)
- National Park Service (NPS)
- Bureau of Reclamation
- Indian Reservation
- Military Reservation and Corps of Engineers
- State
- Private
- US Fish and Wildlife Service (USFWS)
- Water

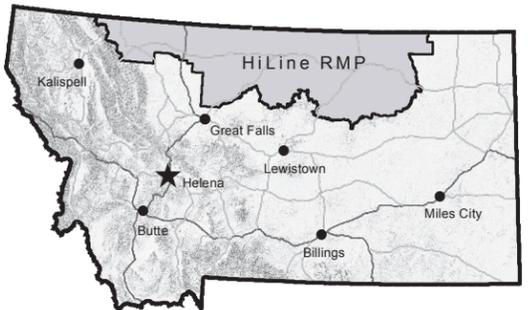




1:1,500,000 Albers Equal Area, NAD83, Meters



- Development Stipulations**
- Open
  - Avoidance
  - Exclusion
  - Potential Wind Development Areas
  - Not Analyzed
  - Towns
  - Interstate
  - Highway or State Route
  - RMP Boundary
  - County



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**Map 2.11**  
 Renewable Energy - Wind  
 Alternative E (Preferred)



Map shows the open, avoidance, and exclusion areas for development under Alternative E (Preferred). Proposed closures and restrictions apply only to lands administered by the BLM.

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HiLine District



### Map 2.12

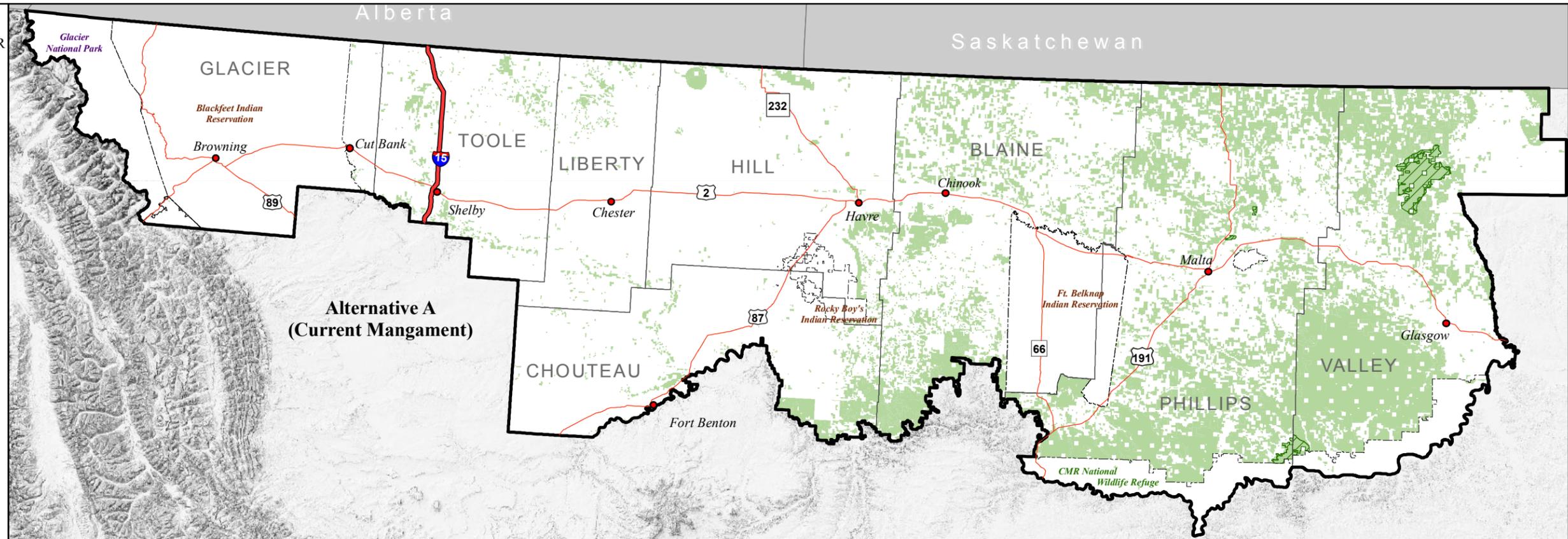
#### Leasable Solid Minerals Alternatives A & E (Preferred)

Map shows Leasable Mineral Estate and the areas that are closed to development under Alternatives A & E.

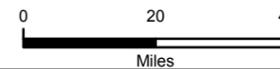


-  Closed To Leasable
-  Open To Leasable Mineral Estate
-  Not Analyzed
-  RMP boundary
-  County Line
-  Canada
-  Interstate
-  Highway or State Route
-  Towns

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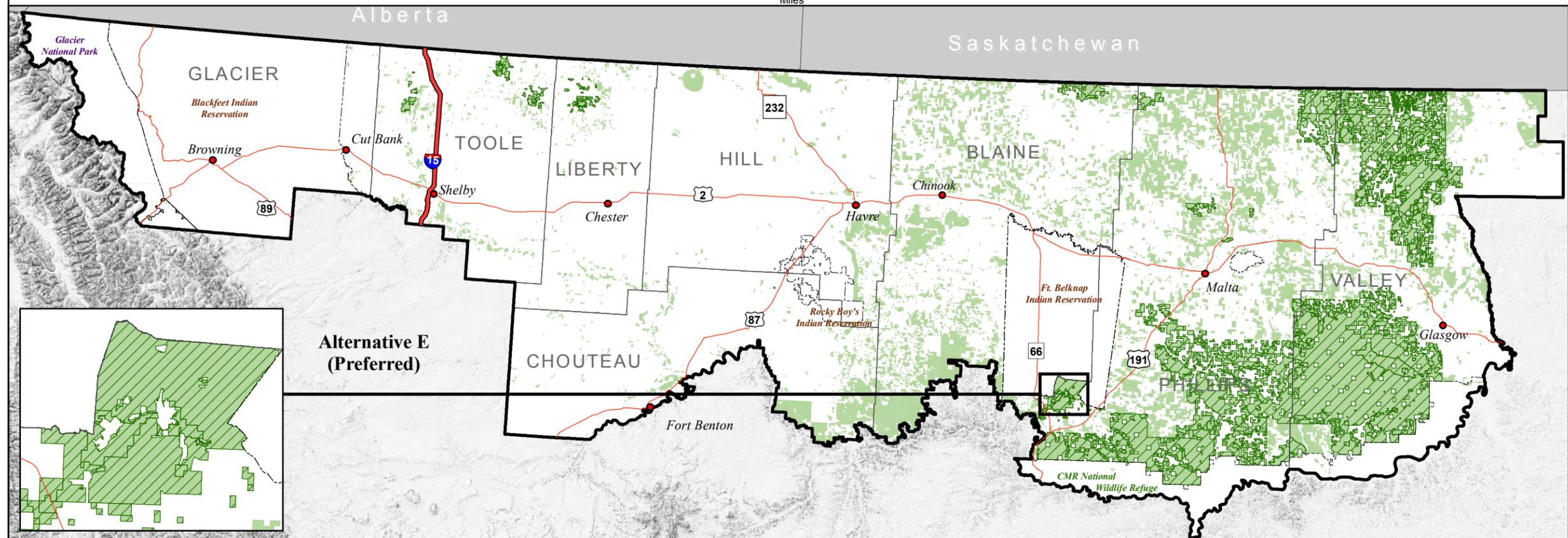


Updated by the Malta Field Office in April 2015



1:1,750,000

Albers Equal Area, NAD83, Meters







Map 2.13

Locatable Minerals  
Alternatives A & E (Preferred)

Maps show the Locatable Mineral Estate and the areas that are withdrawn from mineral entry under Alternative A and recommended for withdrawal under Alternative E.



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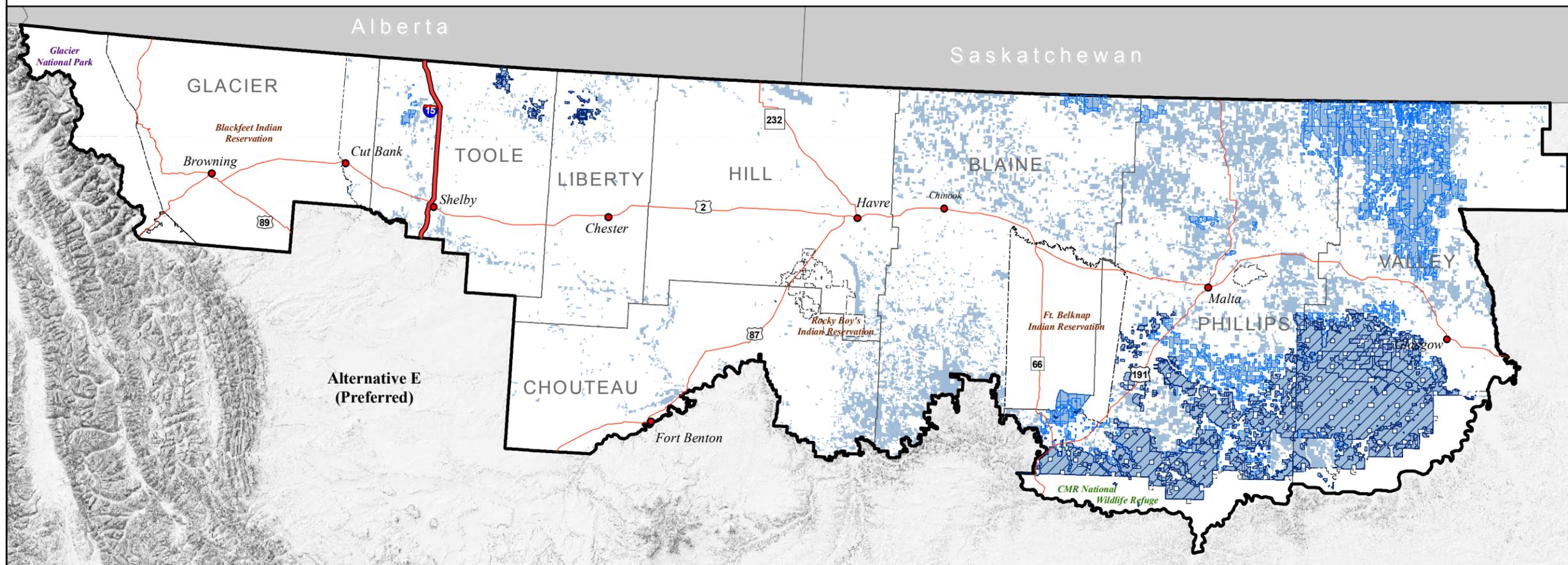
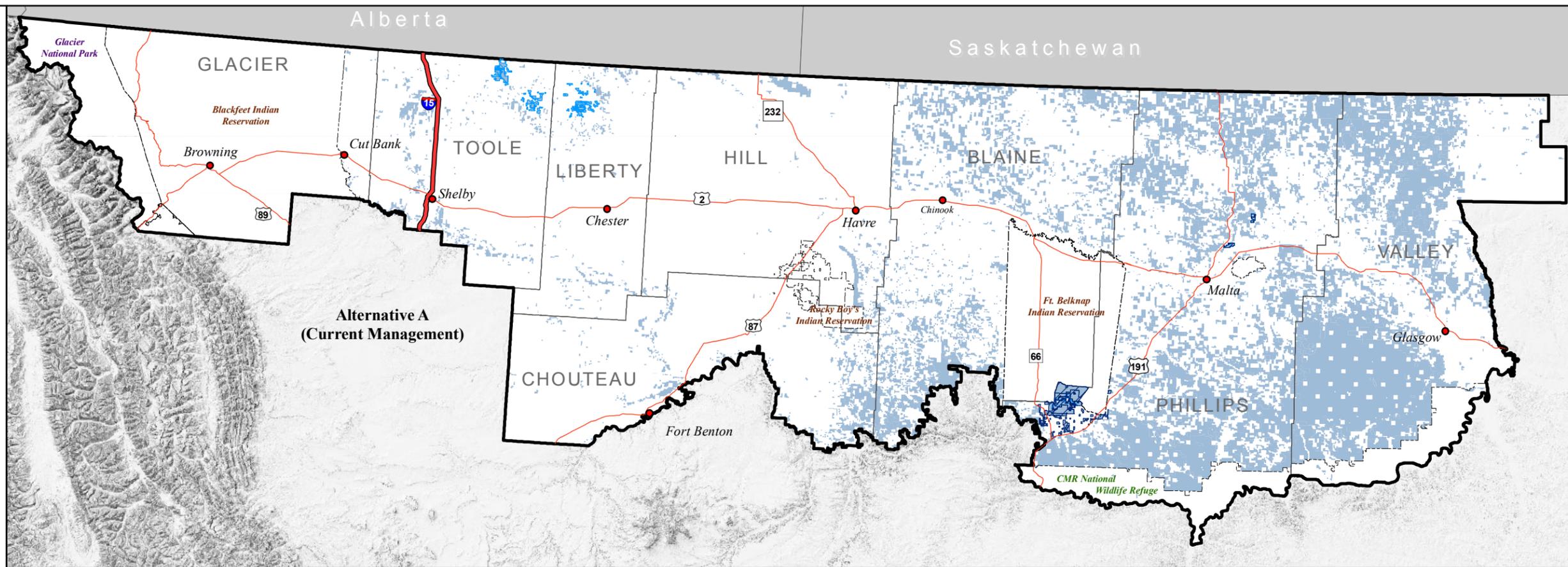
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Albers Equal Area, NAD83, Meters

- Restricted \*
- Withdrawal
- Expiring Withdrawal
- Locatable Mineral Estate
- Not Analyzed
- Interstate
- Highway or State Route
- RMP Boundary
- County
- Towns

\* Restricted lands remain open to operation of the mining laws and are available for mineral development, but because of special designations, special management stipulations apply.

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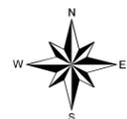




Map 2.14

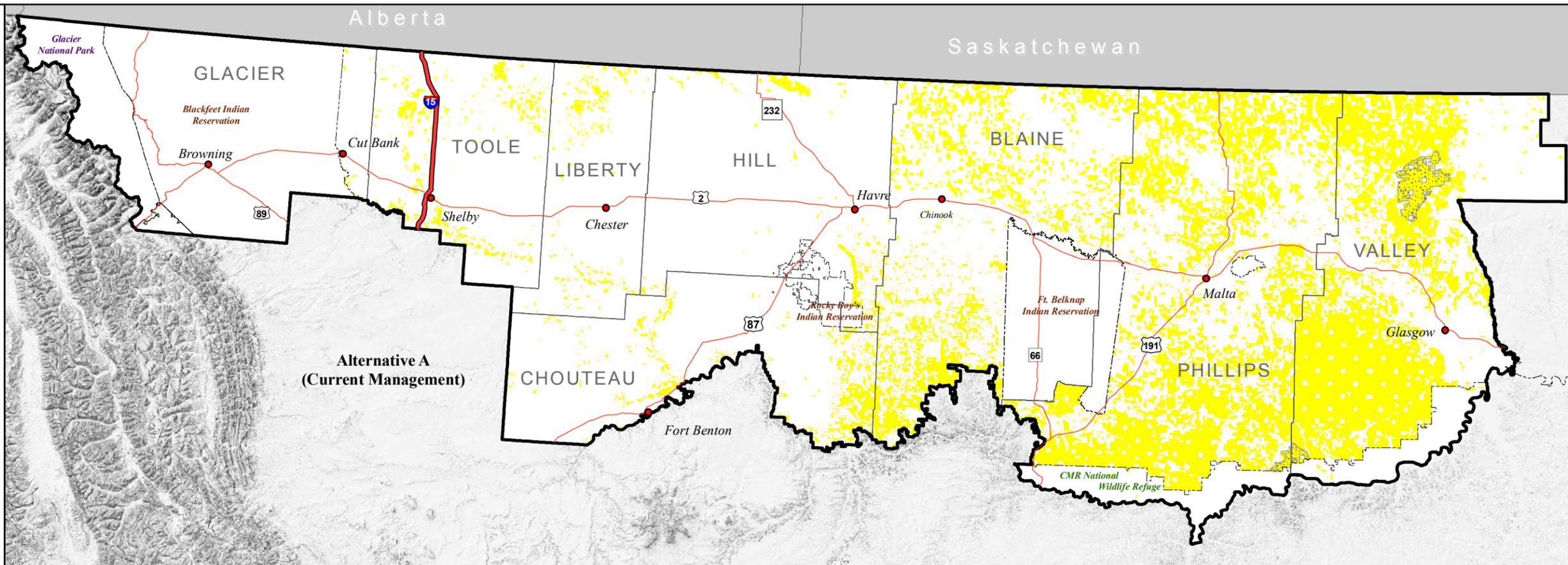
Salable Minerals  
Alternatives A & E (Preferred)

Maps show Salable Mineral Estate and Lands Closed under Alternatives A & E.



- Salable Mineral Estate - Open
- Salable Mineral Estate - Closed
- Not Analyzed
- RMP Boundary
- County Line
- Interstate
- Highway or State Route
- Towns

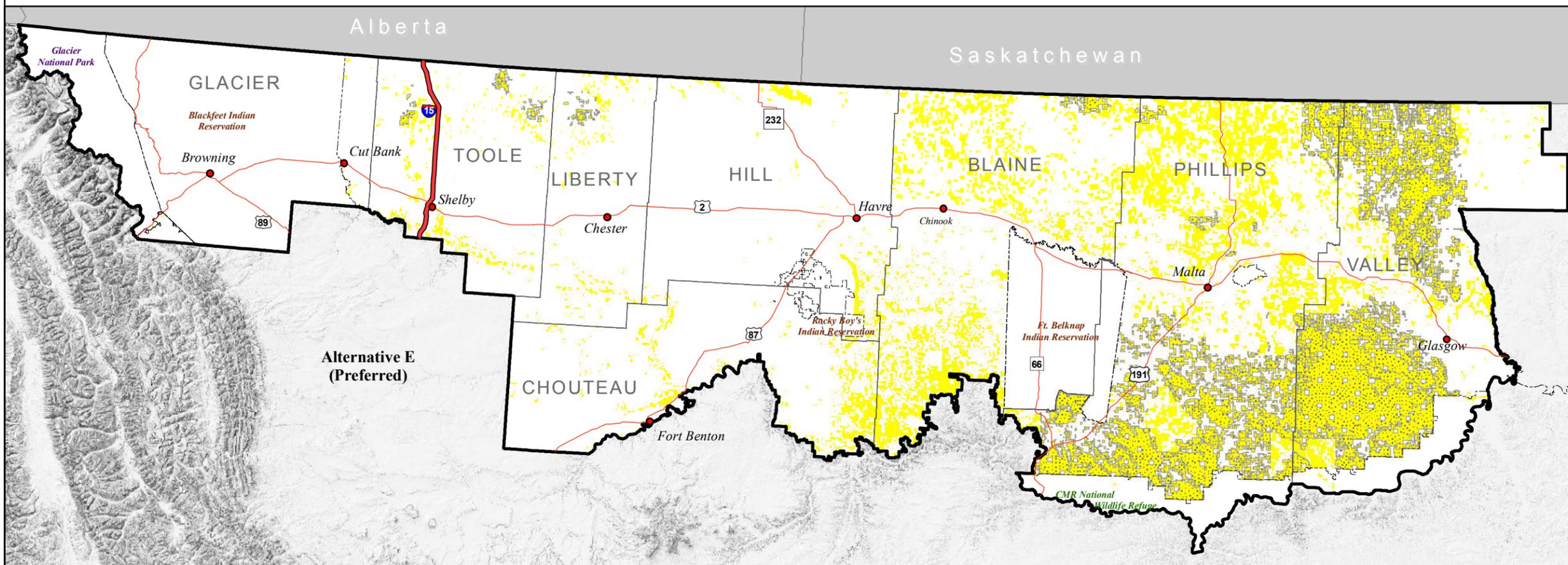
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Albers Equal Area, NAD83, Meters





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### Map 2.15

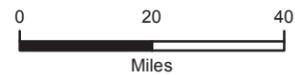
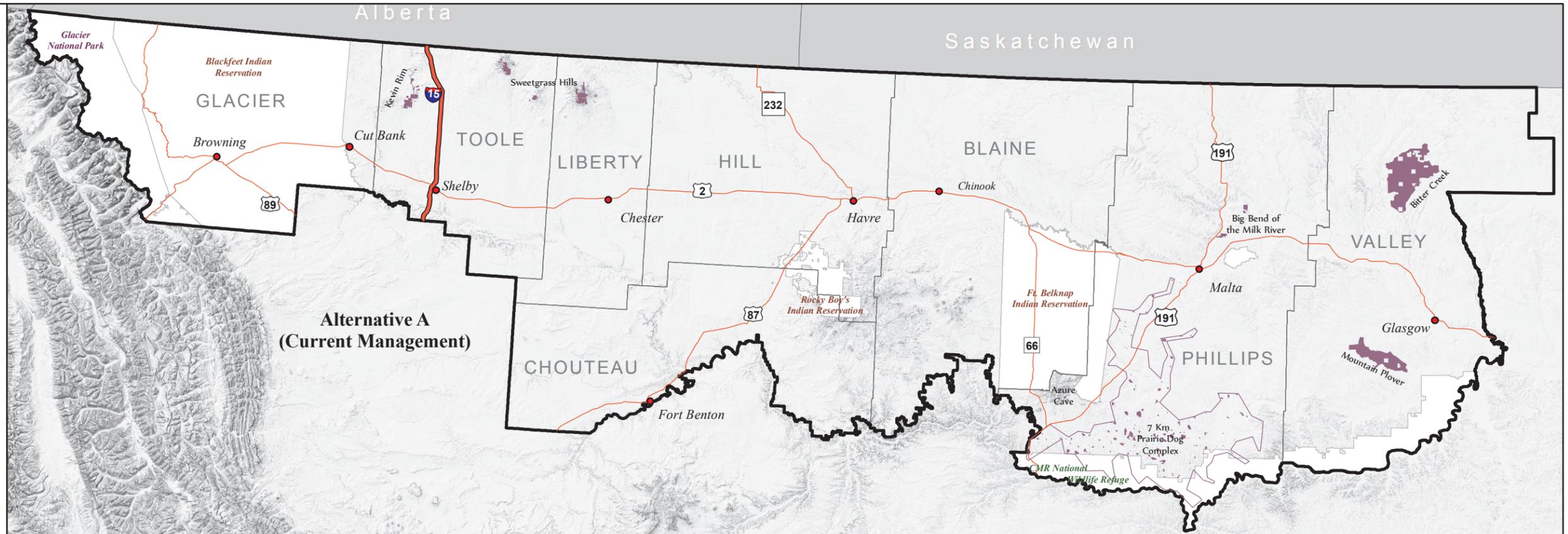
Areas of Critical Environmental Concern (ACECs)  
Alternatives A & E (Preferred)

Maps shows the Existing ACECs for Alternative A and the Existing and Proposed ACECs for Alternative E.



- Existing ACEC
- Proposed ACEC
- RMP Boundary
- County Line
- Interstate
- Highway or State Route
- Town

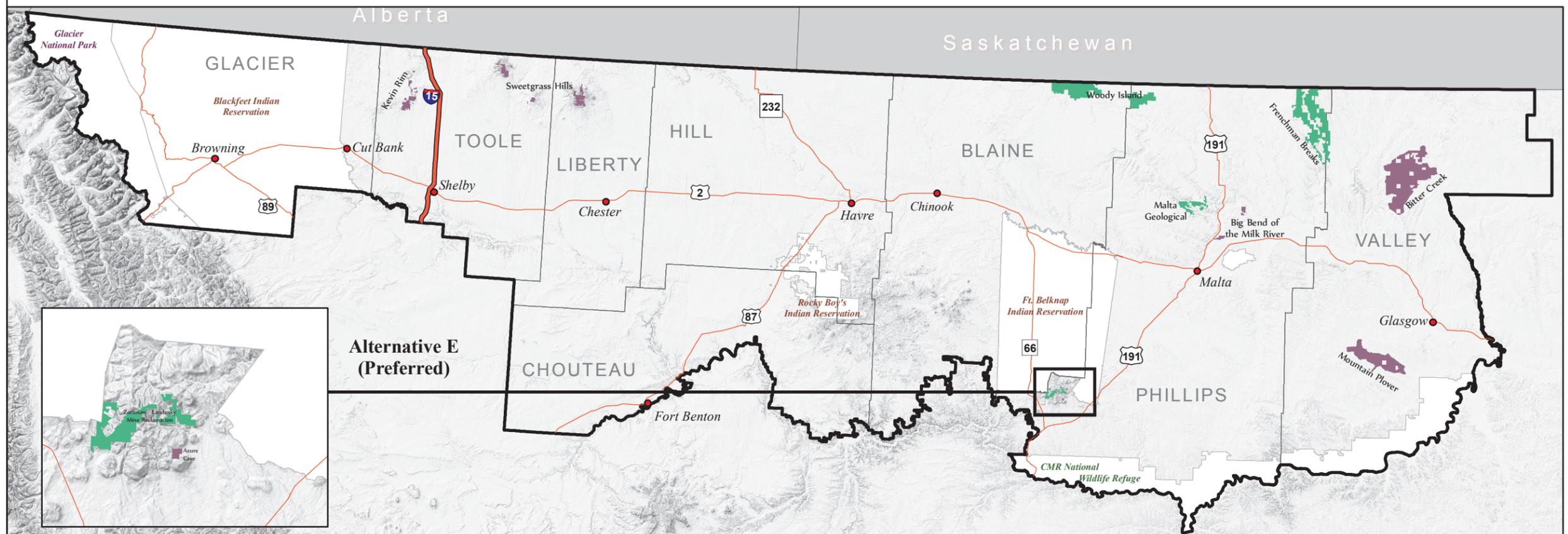
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**Map 2.16**

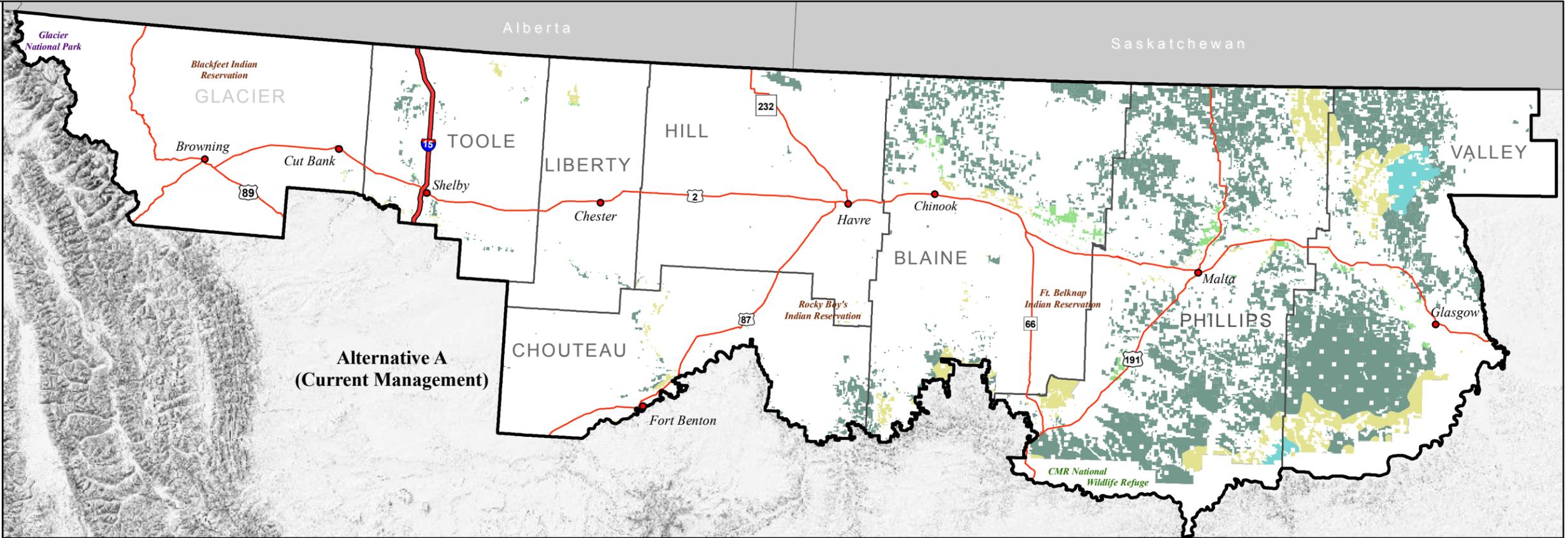
**Visual Resource Management  
Alternatives A & E (Preferred)**



Maps show the Visual Resource Management (VRM) Classes for Alternatives A & E.

- Non-Classified
- VRM Class 1
- VRM Class 2
- VRM Class 3
- VRM Class 4
- RMP Boundary
- County
- Interstate
- Highway or State Route
- Town

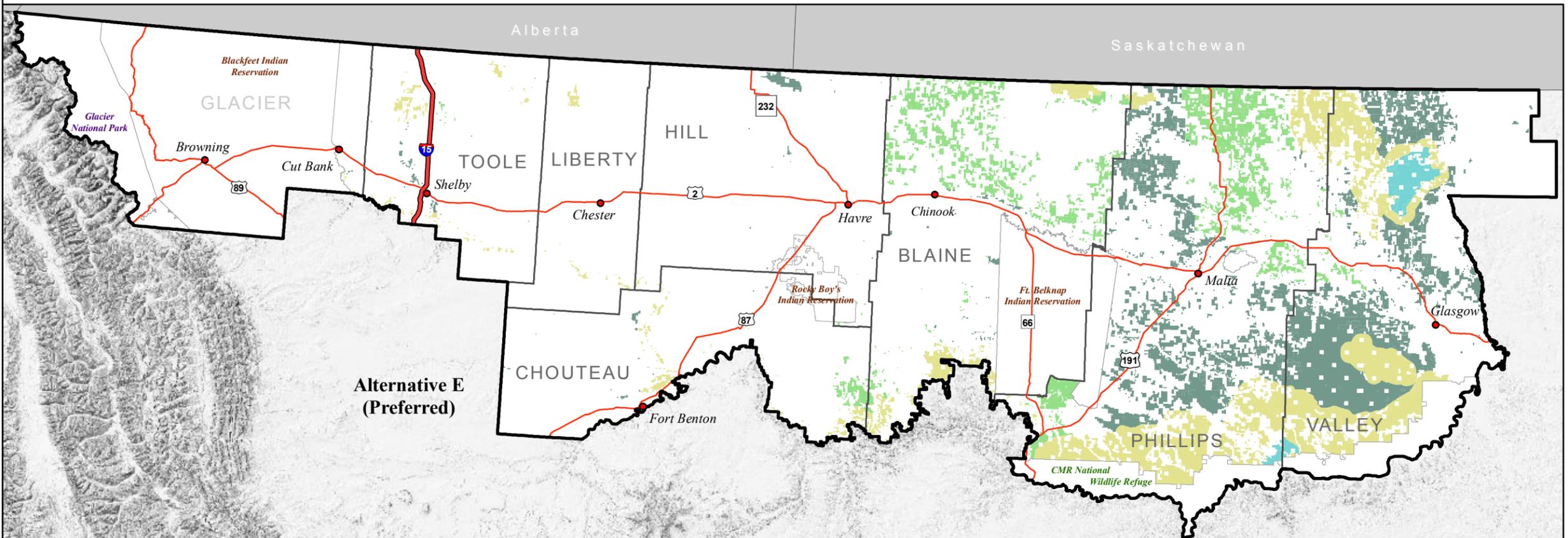
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### Map 2.17

### Greater Sage-Grouse & Grassland Bird Priority Areas Alternatives B & C

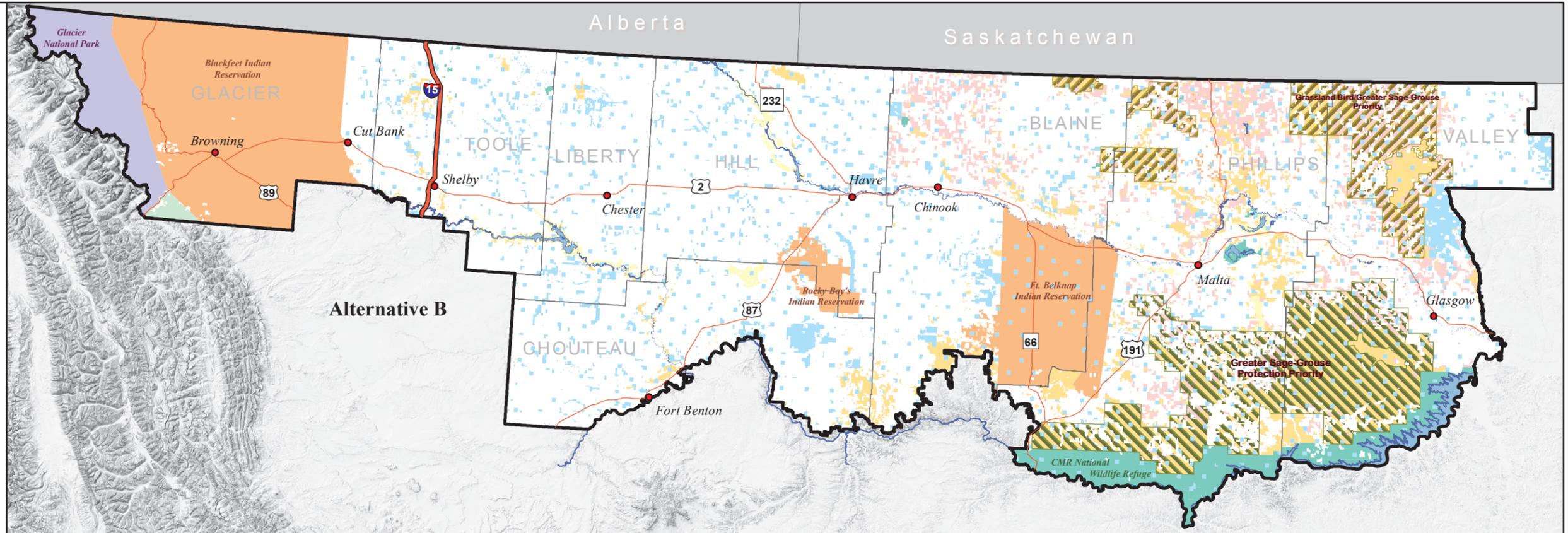
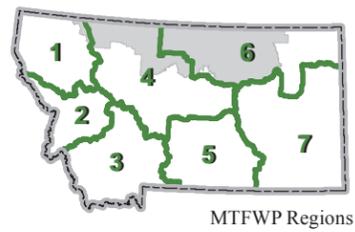


Maps show the proposed Priority areas for Greater Sage-Grouse and grassland birds under Alternatives B and C.

Habitat and conditions would allow wildlife and aquatic species movement between large blocks of habitat and between seasonal habitats on a localized and landscape scale.

- Grassland Bird/ Greater Sage-Grouse Priority
- Greater Sage-Grouse Protection Priority
- RMP Boundary
- County
- Interstate
- Highway or State Route
- Towns

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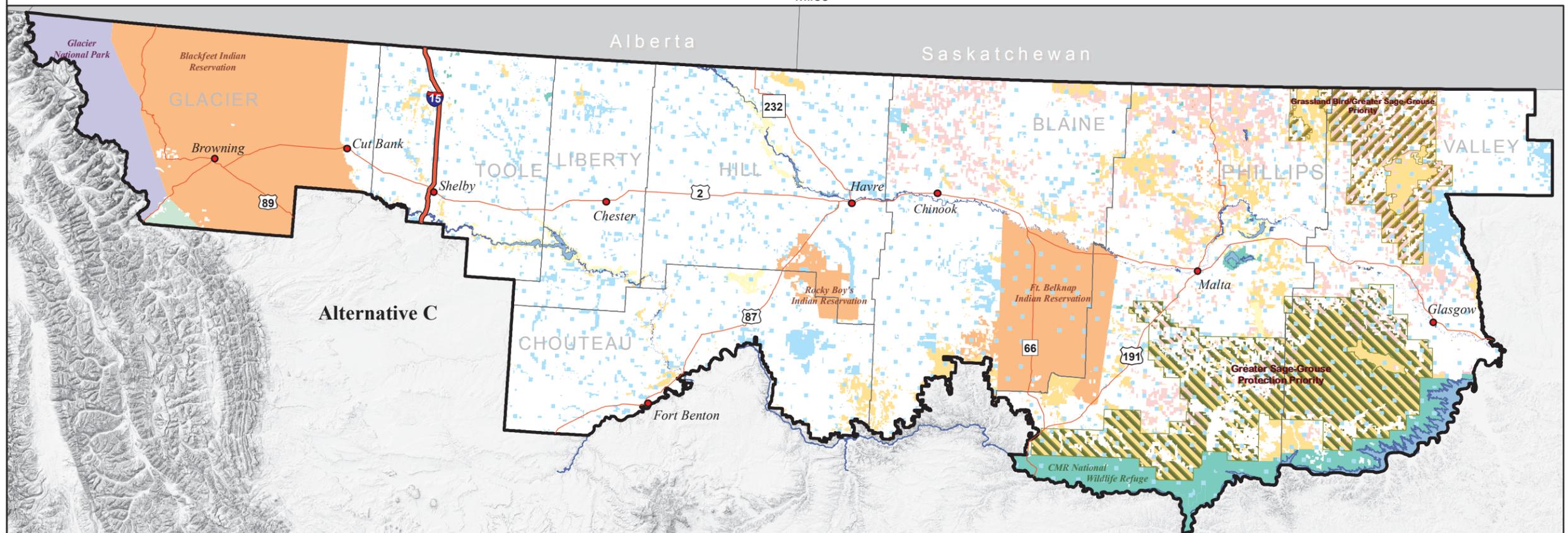


Updated by the Malta Field Office in April 2014

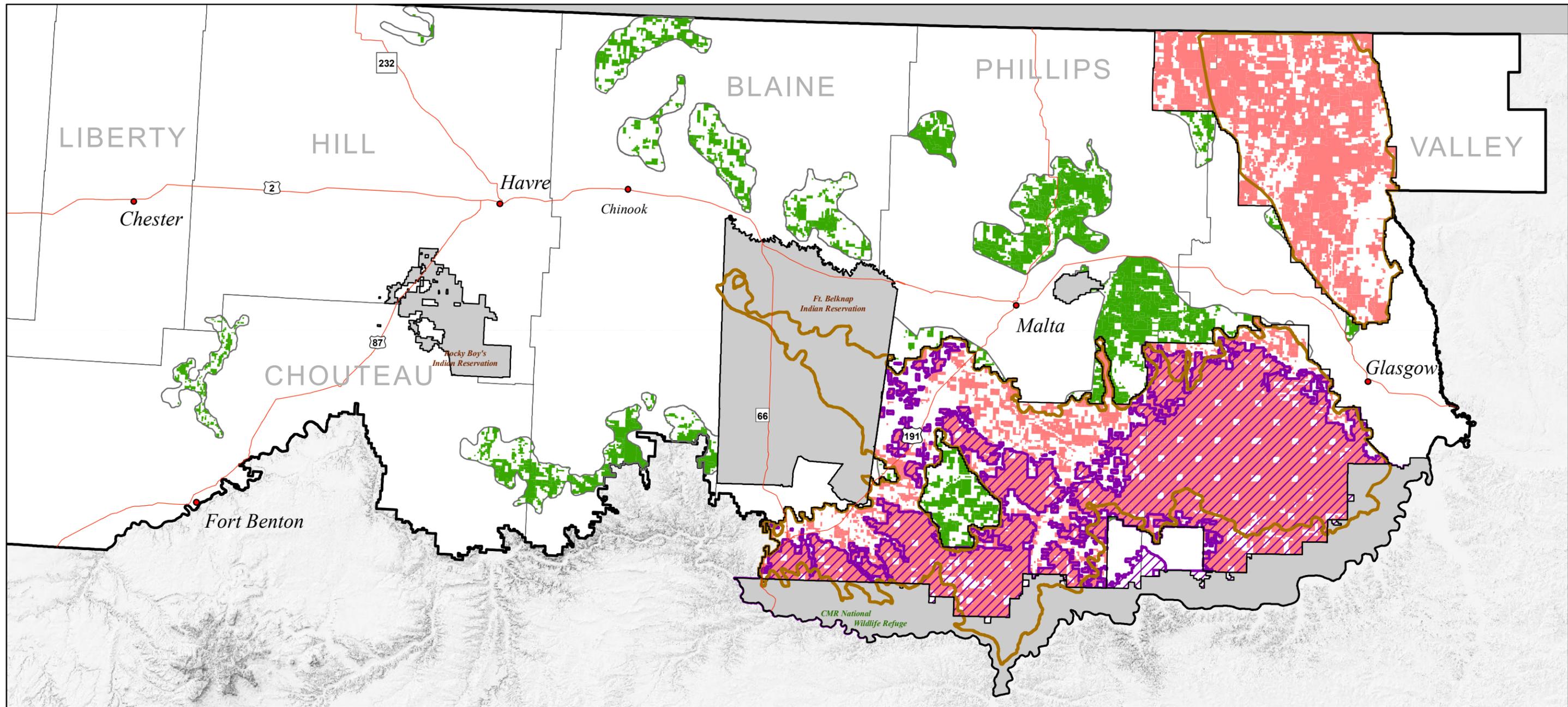


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Albers Equal Area, NAD83, Meters







Created by the Malta Field Office in April 2015

1:1,013,827 Albers Equal Area, NAD83, Meters

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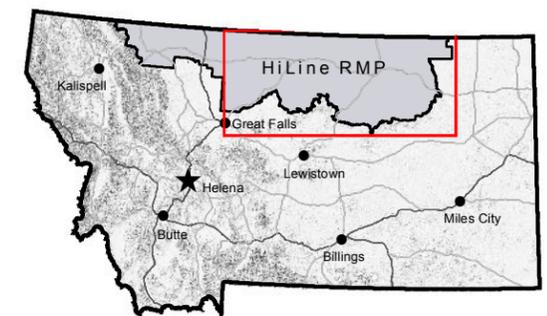
Map 2.18

Greater Sage-Grouse & Grassland Bird Habitat Management Areas  
Alternative E (Preferred)

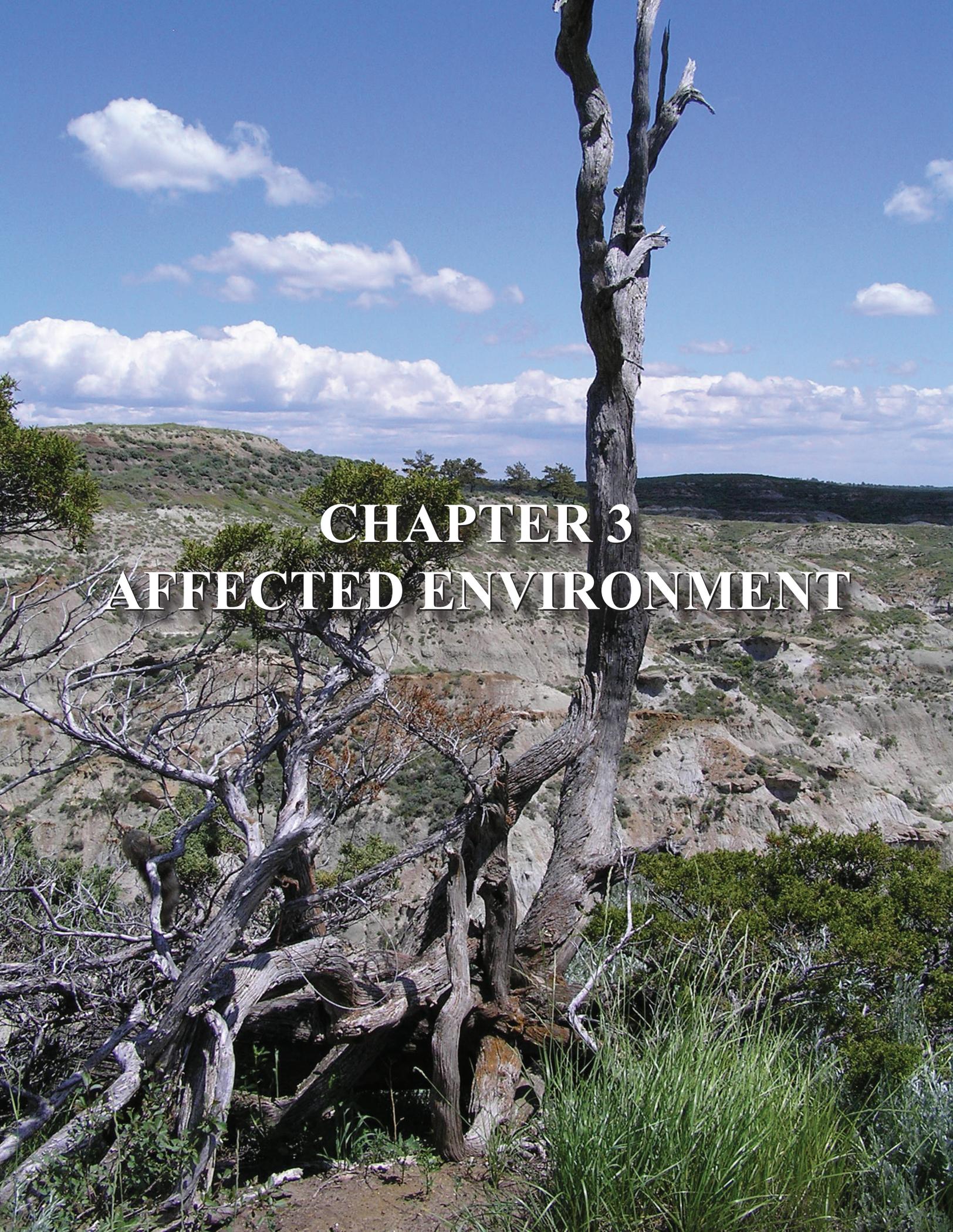
This map is intended for display purposes. No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data, or for purposes not intended by the BLM. This map may not meet National Map Accuracy Standards. This product was developed through digital means and information may be updated without notification.

Map shows the priority and general habitat management areas for Greater Sage-Grouse and the Sagebrush Focal Areas in the HiLine planning area. Management actions proposed for these habitats apply only to BLM managed lands, surface and mineral estate, within these areas.

- Priority Habitat Management Areas - BLM Managed Surface & Mineral Estate
- General Habitat Management Areas - BLM Managed Surface & Mineral Estate
- Sagebrush Focal Areas
- MFWP Core Areas/USFWS Priority Areas of Conservation
- Not Analyzed
- Highway or State Route
- RMP Boundary
- County
- Towns







**CHAPTER 3**  
**AFFECTED ENVIRONMENT**



# Chapter 3 Affected Environment

## Introduction

Chapter 3 contains a description of the physical, biological, cultural, economic and social conditions of the HiLine planning area. The Affected Environment serves as the baseline of existing conditions from which the impacts of the alternatives may be analyzed. In order to improve the readability of this document and to enable the reader to easily locate referenced tables/sections, the resource discussions are organized alphabetically. The resource sections are noted in the document footers, along with the chapter and page numbers.

## Air Resources and Climate Change

Regional air resources are influenced by the interaction of several factors, including weather, climate, the magnitude and spatial distribution of local and regional air pollutant sources, and the chemical properties of emitted air pollutants. Air resources include air quality and air quality related values (AQRVs), which include visibility and acid deposition to soils and lakes.

### Regional Winds

Wind is a critical component of ambient air quality because it disperses pollutants and transports them away from the point of origin. The prevailing wind direction for Great Falls, Montana is out of the southwest, with the exception of May to July, when wind typically comes from the north, as shown in Table 3.1. Winter conditions may produce moderate winds with individual days generating strong winds.

<b>Table 3.1</b>												
<b>Prevailing Wind Directions and Average Speeds (mph) for Great Falls, Montana</b>												
<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Annual</i>
SW	SW	SW	SW	N	N	N	SW	SW	SW	SW	SW	SW
13.3	12.3	11.8	11.2	11.3	10.2	9.6	9.2	10.4	11.9	13.2	13.8	11.5

Source: WRCC 2011a.

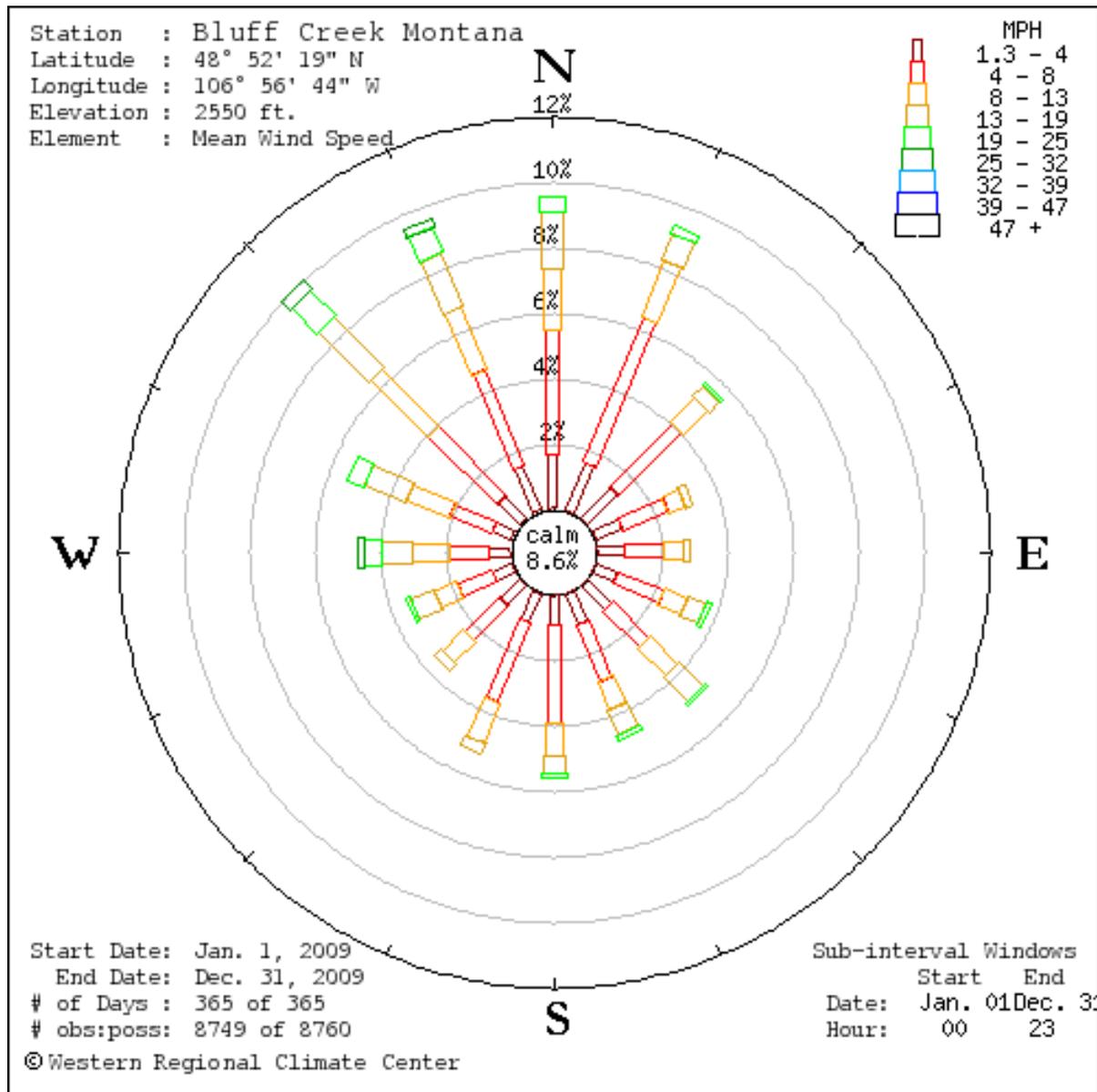
Wind varies considerably from one location to another. A wind rose for the Bluff Creek Remote Automated Weather Station (RAWS) in the northern portion of Valley County (northwest of Fort Peck Indian Reservation) indicates more northerly winds at this location. The 16 arms in Figure 3.1 indicate the frequency of wind blowing from the indicated direction. Longer arms indicate that the wind more frequently originates from the illustrated direction. Colored bands within each arm indicate the proportion of time that the wind blows with a given speed.



Sand Creek Area, Blaine and Chouteau Counties

Photo by Kathy Tribby

**Figure 3.1**  
**Wind Rose for Bluff Creek, Montana (2009)**



Source: WRCC 2011b.

### Criteria Air Pollutants

Criteria air pollutants are substances for which the US Environmental Protection Agency (EPA) established national health-based concentration standards under the National Ambient Air Quality Standards (NAAQS) program. Criteria air pollutants include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter with a diameter greater than or equal to 10 micrometers (PM<sub>10</sub>), particulate matter with a diameter greater than or equal to 2.5 micrometers (PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). Criteria air pollutant concentrations are compared to NAAQS and Montana Ambient Air Quality Standards (MAAQS). The NAAQS include both primary and secondary standards, as shown in Table 3.2. Primary standards protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards protect public welfare by preventing damage to buildings, infrastructure, and vegetation.

<b>Table 3.2 Federal and State Ambient Air Quality Standards</b>				
<i>Pollutant</i>	<i>Federal NAAQS<sup>1</sup></i>			<i>State MAAQS<sup>2</sup></i>
	<i>Averaging Time</i>	<i>Level</i>	<i>Standard Type</i>	<i>Level</i>
Carbon Monoxide (CO)	8-hour	9 ppm <sup>3</sup>	Primary	9 ppm <sup>12</sup>
	1-hour	35 ppm <sup>3</sup>	Primary	23 ppm <sup>12</sup>
Fluoride in Forage	Monthly	N/A	N/A	50 µg/g
	Grazing Season	N/A	N/A	35 µg/g
Hydrogen Sulfide	1-hour	N/A	N/A	0.05 ppm <sup>12</sup>
Lead (Pb)	3-month (rolling)	0.15 µg/m <sup>3 4</sup>	Primary, Secondary	N/A
	90-day	N/A	N/A	1.5 µg/g <sup>4</sup>
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	0.053 ppm <sup>4</sup>	Primary, Secondary	0.05 ppm <sup>13</sup>
	1-hour	0.100 ppm <sup>5</sup>	Primary	0.30 ppm <sup>12</sup>
Fine Particulate Matter (PM <sub>2.5</sub> )	Annual	12 µg/m <sup>3 6,7</sup>	Primary	N/A
	Annual	15.0 µg/m <sup>3,14</sup>	Secondary	N/A
	24 hour	35 µg/m <sup>3 5</sup>	Primary, Secondary <sup>8</sup>	N/A
Particulate Matter (PM <sub>10</sub> )	Annual	N/A	N/A	50 µg/m <sup>3 14</sup>
	24-hour	150 µg/m <sup>3 9</sup>	Primary, Secondary	150 µg/m <sup>3</sup>
Settleable Particulate	30-day	N/A	N/A	10 g/m <sup>2</sup>
Ozone (O <sub>3</sub> )	8-hour	0.075 ppm <sup>10</sup>	Primary, Secondary	N/A
	1-hour	N/A	N/A	0.10 ppm <sup>12</sup>
Sulfur Dioxide (SO <sub>2</sub> )	Annual	0.030 ppm <sup>4</sup>	Primary	0.02 ppm <sup>13</sup>
	24-hour	0.14 ppm <sup>3</sup>	Primary	0.10 ppm <sup>12</sup>
	3-hour	0.5 ppm <sup>3</sup>	Secondary	N/A
	1-hour	0.075 ppm <sup>11</sup>	Primary	0.50 ppm <sup>15</sup>
Visibility	Annual	N/A	N/A	3 x 10 <sup>-5</sup> /m <sup>16</sup>

<sup>1</sup> NAAQS are codified in Title 40 of the Code of Federal Regulations (CFR), Part 50.

<sup>2</sup> MAAQS are codified in Title 17, Chapter 8, Subchapter 2 of the Ambient Air Quality standards in the Administrative Rules of Montana (ARM).

<sup>3</sup> Not to be exceeded more than once per calendar year.

<sup>4</sup> Not to be exceeded.

<sup>5</sup> Based on a 3-year average of the 98<sup>th</sup> percentile of the daily maximum concentrations.

<sup>6</sup> Based on a 3-year average of the weighted annual mean from one or more community monitors.

<sup>7</sup> EPA proposed to revise the annual primary PM<sub>2.5</sub> standard to within a range of 12–13 µg/m<sup>3</sup>.

<sup>8</sup> EPA proposed a new secondary standard for PM<sub>2.5</sub> visibility of 28 or 30 deciviews (equivalent to 24 or 19 kilometers [15 or 12 miles] standard visual range).

<sup>9</sup> Not to be exceeded more than once per calendar year, based on a 3-year average of maximum 24-hour values.

<sup>10</sup> Based on the 3-year average of the fourth-highest daily maximum 8-hour concentrations per calendar year.

<sup>11</sup> Based on a 3-year average of the 99<sup>th</sup> percentile of the daily maximum concentrations.

<sup>12</sup> Not to be exceeded more than once over any 12 consecutive months.

<sup>13</sup> Arithmetic average not to be exceeded more than once over any 4 consecutive quarters.

<sup>14</sup> Not to be exceeded more than once per year on average over 3 years.

<sup>15</sup> Not to be exceeded more than 18 times in any 12 consecutive months.

<sup>16</sup> This standard applies only in certain Class I areas (Table 3.5).

Areas that do not meet federal standards are designated as nonattainment areas. Air quality within the planning area is good and all areas are designated as attainment areas that meet the NAAQS or as unclassifiable areas that are presumed to meet the NAAQS.

## Air Quality Monitoring

The Montana Department of Environmental Quality (MDEQ) performs regulatory monitoring of NO<sub>2</sub>, ozone, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> in order to determine compliance with NAAQS and MAAQS. Air pollutant concentration monitoring networks in Montana include the State and Local Air Monitoring Stations (SLAMS), a National Core (NCore) monitoring site, tribal monitoring networks, and the Clean Air Status and Trends Network (CASTNet). SLAMS are usually located in urban areas and measure criteria pollutants and the NCore site to determine long-term trends in a relatively pristine area. The MDEQ operates the SLAMS network within Montana to determine compliance with regulatory concentration standards. CASTNet and NCore stations are located in remote areas and measure concentrations of compounds that are of interest to ecosystem health. Air pollutant concentrations are usually reported on a volume basis as parts per million (ppm) or parts per billion (ppb) for gaseous substances and on a mass basis as micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) for solid substances such as PM<sub>10</sub> and PM<sub>2.5</sub>.

Monitors that provide information on AQRVs include the National Acid Deposition Program (NADP) network and the Interagency Monitoring of Protected Visual Environments (IMPROVE) network. A list of monitoring stations near the planning area is provided in Table 3.3.

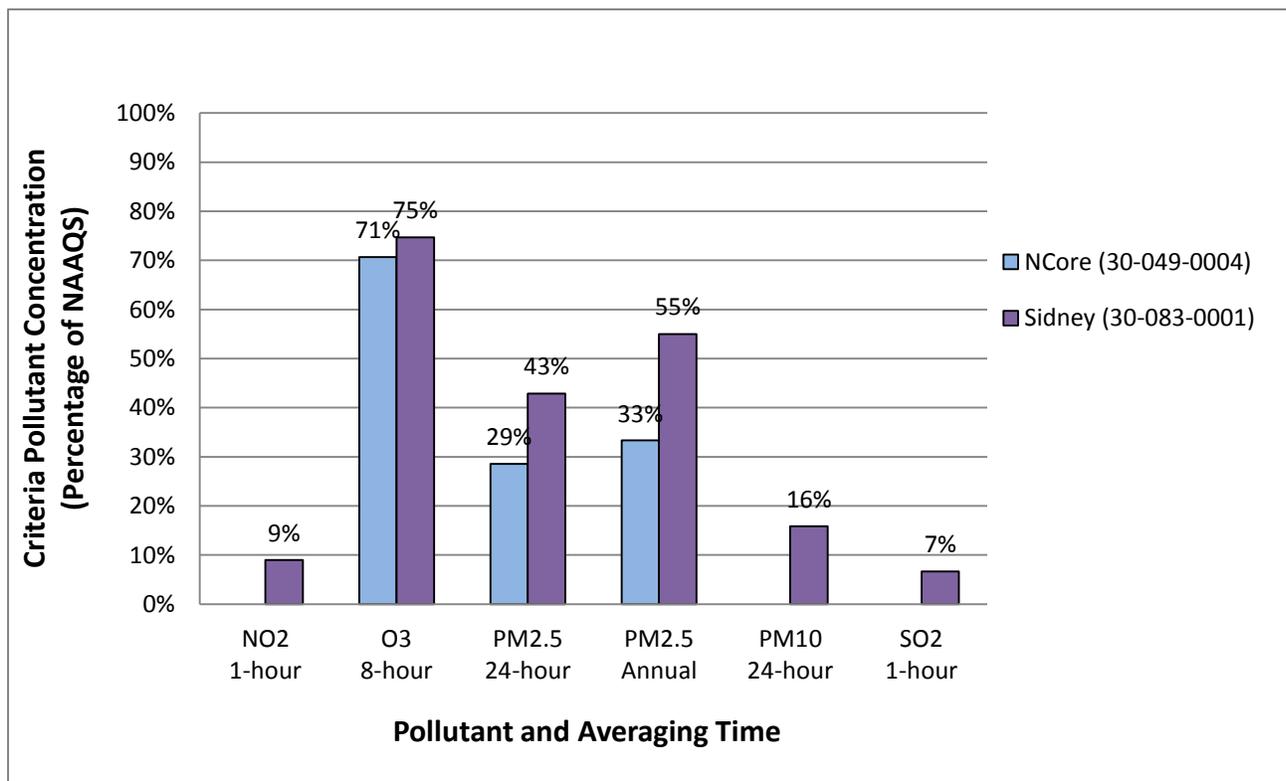
<i>Monitoring System</i>	<i>Station Identifier</i>	<i>Pollutant or AQRV</i>	<i>Location</i>	<i>Latitude</i>	<i>Longitude</i>
SLAMS	30-029-8001	O <sub>3</sub>	Glacier National Park	48.5103	-113.9956
	30-083-0001	NO, NO <sub>2</sub> , NO <sub>x</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub>	Sidney <sup>1</sup>	47.8034	-104.4856
NCore	30-049-0004	CO, NO, NO <sub>y</sub> , O <sub>3</sub> , SO <sub>2</sub> , PM <sub>2.5</sub> , PM <sub>Course</sub>	Sieben's Flat	46.8505	-111.9872
CASTNET	THR422	O <sub>3</sub> , SO <sub>2</sub> , Deposition	Theodore Roosevelt National Park (North Dakota)	46.8947	-103.3778
	GLR468	O <sub>3</sub> , SO <sub>2</sub> , Deposition	Glacier National Park	48.5103	-113.9956
NADP	MT98	Wet Deposition	Havre	48.5007	-109.798
	MT96	Wet Deposition	Poplar River	48.3149	-105.144
	MT05	Wet Deposition	Glacier National Park	48.5102	-113.997
IMPROVE	FOPE1	Visibility	Fort Peck Indian Reservation	48.308	-105.102
	MELA1	Visibility	Medicine Lakes Wilderness	48.487	-104.476
	ULBE1	Visibility	UL Bend	47.5823	-108.72
	GLAC1	Visibility	Glacier National Park	48.511	-113.997

Sources: MDEQ 2013; EPA 2012.

<sup>1</sup> On April 8, 2013, the EPA approved MDEQ's request to redesignate the Sidney monitor as a special purpose monitor producing non-regulatory data for PM<sub>10</sub> due to monitor siting near a gravel road. The location of this monitor does not meet monitor siting requirements for PM<sub>10</sub>.

The sources and effects of each criteria pollutant are explained below. Recent ambient air quality monitoring data are shown as the percentage of the monitored concentration compared to the NAAQS in Figure 3.2. Values shown in Figure 3.2 are based on the format of the NAAQS. For example, when a NAAQS allows one exceedance of a standard per year, the second highest monitored value is reported for comparison to the NAAQS. MDEQ-operated monitoring sites with three years of data are located outside of the planning area at Sidney and Sieben's Flat. In August 2012, new monitoring stations began operating near Malta within the planning area and south of the planning area in Lewistown. Due to insufficient operating time, data from these monitors are not reported.

**Figure 3.2**  
**Representative Air Pollutant Concentrations Near the HiLine Planning Area (2010-2012)**



Source: MDEQ 2013.

NO<sub>2</sub> 1-hour: 3-year average of 98<sup>th</sup> percentile  
 O<sub>3</sub> 8-hour: 3-year average of 4<sup>th</sup> highest daily maximum 8-hour average  
 PM<sub>2.5</sub> 24-hour: 3-year average of 98<sup>th</sup> percentile)  
 Annual: 3 year average weighted mean

PM<sub>10</sub> 24-hour: 3-year average of 2<sup>nd</sup> maximum  
 SO<sub>2</sub> 1-hour: 3-year average of the 99<sup>th</sup> percentile of 1-hour daily maximum concentrations

### Carbon Monoxide

CO can have significant effects on human health because it combines readily with hemoglobin and consequently reduces the amount of oxygen transported in the bloodstream. Effects on humans from exposure to high CO concentrations can include slight headaches, nausea, or death.

Motor vehicles and other internal combustion engines are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. CO is also created during refuse, agricultural, and wood-stove burning and through some industrial processes.

Carbon monoxide is not monitored within the planning area or in urban areas within Montana. Monitoring in prior years indicated extremely low CO concentrations and was discontinued by the MDEQ at its SLAMS monitors.

### Lead

The primary historical sources of lead emissions have been certain types of industrial sources and lead in gasoline and diesel fuel. However, since lead in fuels has decreased substantially, processing of metals containing trace amounts of lead is now the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters.

Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturing plants. The effects of lead exposure include brain and other nervous system damage; children exposed to lead are particularly at risk. Due to the lack of large lead emission sources, lead levels in the planning area are expected to be well below the NAAQS and MAAQS. No data are available to determine the trend in lead concentrations. However, decreasing lead levels in gasoline and diesel fuel indicate a likely decrease in lead levels within the planning area.

## Nitrogen Dioxide

Nitrogen oxides (NO<sub>x</sub>), including nitric oxide (NO) and NO<sub>2</sub>, are formed when naturally occurring atmospheric nitrogen and oxygen are combusted with fuel in automobiles, power plants, industrial processes, and home and office heating. At high exposures, NO<sub>2</sub> causes respiratory system damage of various types, including bronchial damage. Its effects are exhibited by increased susceptibility to respiratory infection and changes in lung function. Within the atmosphere, NO<sub>2</sub> contributes to visibility impacts and may be visible as reddish-brown haze. NO<sub>2</sub> and other forms of NO<sub>x</sub> form nitric acid (HNO<sub>3</sub>), a component of atmospheric deposition (e.g., acid rain).

Hourly NO<sub>2</sub> concentrations from the rural Sidney monitor within Richland County are provided in Figure 3.2. This monitor is located in an oil and gas activity area east of the planning area. Monitored 1-hour concentrations were 9% of the NAAQS during 2010-2012.

## Ozone

Ozone is not emitted directly into the atmosphere. Instead, it is formed by a photochemical reaction of precursor air pollutants, including volatile organic compounds (VOCs) and NO<sub>x</sub>. These precursors are emitted by mobile sources, stationary combustion equipment, and other industrial sources. Ozone is produced year-round, but due to greater sunlight and air temperatures, urban ozone concentrations are generally greatest during the summer. Elevated ozone concentrations may also occur during winter in snow-covered rural areas, particularly in areas with deep valleys.

Ozone is a severe eye, nose, and throat irritant. A potent oxidant, it increases susceptibility to respiratory infections and may cause substantial damage to vegetation (leaf discoloration and cell damage) and other materials (attacking synthetic rubber, textiles, paints, and other substances).

The 3-year averages of the fourth highest 8-hour ozone concentrations were 0.053 ppm at the NCore monitor and 0.056 ppm at the Sidney monitor during 2010-2012. These measured concentrations were 71% and 75% of the 8-hour 2008 primary and secondary NAAQS of 0.075 ppm.

## Particulate Matter

Particulate matter includes PM<sub>10</sub> and PM<sub>2.5</sub>. PM<sub>10</sub> impacts include health effects (because PM<sub>10</sub> is small enough to reach the lungs when inhaled), deposition on plants and surfaces (including soiling of snow which can contribute to climate change), localized reductions in visibility, and potential corrosion. PM<sub>10</sub> emissions are generated by a variety of sources including agricultural activities, industrial emissions, and road dust re-suspended by vehicle traffic. Within the planning area, primary sources of PM<sub>10</sub> include smoke from wildland fire, residential wood burning, street sand, physically disturbed soils, and dust from unpaved roads.

PM<sub>2.5</sub> poses greater health concerns than PM<sub>10</sub> because it can pass through the nose and throat and be trapped deep in the lungs. Fine particulate also contributes to reduced visibility in nationally important areas such as national parks and wilderness areas. PM<sub>2.5</sub> emissions are primarily generated by internal combustion diesel engines, soils with high silt and clay content, and secondary aerosols formed by chemical reactions in the atmosphere.

The three-year average second highest 24-hour PM<sub>10</sub> concentration was 23.8 µg/m<sup>3</sup> or 16% of the corresponding primary and secondary NAAQS in Sidney. The 3-year average 98th percentile 24-hour PM<sub>2.5</sub> concentration at the same location was 15.0 µg/m<sup>3</sup>, which was 43% of the corresponding primary and secondary NAAQS. The 3-year average weighted mean PM<sub>2.5</sub> annual concentrations at Sidney was 6.6 µg/m<sup>3</sup>, or approximately 55% of the corresponding primary NAAQS. PM<sub>2.5</sub> concentrations at the NCore monitor were less than those at Sidney.

## Sulfur Dioxide

SO<sub>2</sub> is a colorless gas with a pungent odor. Prolonged exposure to high levels of SO<sub>2</sub> can lead to respiratory failure, and SO<sub>2</sub> plays an important role in the aggravation of chronic respiratory illnesses such as asthma. SO<sub>2</sub> is emitted primarily from stationary sources that burn fossil fuels (i.e., coal and oil) containing trace amounts of elemental sulfur. Other human-caused sources of SO<sub>2</sub> include metal smelters and petroleum refineries. In the atmosphere, SO<sub>2</sub> converts to sulfuric acid, a component of atmospheric deposition (acid rain), and forms secondary aerosols, subsequently contributing to visibility impacts in nationally important areas.

The 3-year average 99th percentile 1-hour SO<sub>2</sub> concentration was 5.0 ppb at the Sidney monitor from 2010-2012. This concentration was 7% of the corresponding primary 75 ppb NAAQS.

## VOCs

VOCs include a variety of chemicals, some of which have adverse health effects. Concentrations of many VOCs are consistently higher indoors than outdoors. VOCs are emitted from equipment such as organic liquid storage tanks, leaking equipment, and from engines and other combustion equipment. In addition, thousands of products emit VOCs, including paints, cleaning supplies, pesticides, building materials, office equipment, glues, and permanent markers. VOCs are not subject to a NAAQS. However, since they react with NO<sub>x</sub> to form ground-level ozone, VOCs are a precursor to ozone and VOC emissions are regulated by EPA.

## Hazardous Air Pollutants

Hazardous air pollutants (HAPs) are pollutants that are known or suspected to cause cancer or other serious health problems, which include chronic respiratory disease, reproductive disorders, or birth defects. Of the 187 regulated HAPs, several are commonly emitted from planning area engines and other sources. Engine-emitted HAPs include formaldehyde, benzene, toluene, ethyl benzene, xylenes, and hexane (i.e., n-hexane). Potential concentrations of HAPs are compared to health-based thresholds to estimate the risk of health effects.

Mercury is a HAP whose emissions are largely associated with large coal-burning facilities, such as electric utilities. Ambient concentrations of mercury are not monitored within the planning area. During 2010, the average mercury concentration was 5.9 nanograms per liter (ng/L) in Glacier National Park. Total mercury deposition was approximately 91 ng per square meter (NADP 2011a). Mercury concentrations and total deposition at Glacier National Park are low compared to deposition in most other areas of the nation.

## Other Pollutants

Other air pollutants of interest include nitrogen and sulfur compounds because they contribute to acid deposition and regional haze. Nitrogen compounds include particulate nitrate (NO<sub>3</sub><sup>-</sup>), nitric acid, and ammonium (NH<sub>4</sub><sup>+</sup>), while sulfur compounds include particulate sulfate (SO<sub>4</sub><sup>-2</sup>) and SO<sub>2</sub>. Concentrations of HNO<sub>3</sub>, SO<sub>2</sub>, NH<sub>4</sub><sup>+</sup>, NO<sub>3</sub><sup>-</sup>, and SO<sub>4</sub><sup>-2</sup> within the planning area are low relative to concentrations across the United States (NADP 2011b).

## Criteria Pollutant Emissions

Current air quality reflects the impacts of emissions of existing sources of air pollution. Table 3.4 provides an EPA estimate of recent emissions within the planning area based on the 2008 National Emission Inventory (NEI). Emissions of greenhouse gases (GHGs) are not included in Table 3.4 because these emissions were not reported to EPA and the MDEQ for calendar year 2008. Due to recent implementation of a new federal air quality rule, many facilities within the planning area began reporting GHG emissions to EPA after 2010.

**Table 3.4**  
**HiLine Planning Area Criteria Pollutant Emissions by County**

County	Emissions (tons/year)					
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	SO <sub>2</sub>
Blaine	2,922	2,722	3,696	460	456	23
Chouteau	2,831	1,189	2,985	404	413	27
Glacier	3,281	1,840	4,787	583	583	24
Hill	4,045	2,060	4,151	552	637	31
Liberty	1,404	987	1,277	188	269	16
Phillips	2,104	1,271	2,783	347	443	18
Toole	3,593	1,831	1,319	217	544	23
Valley	3,286	2,018	2,712	385	612	31
Total	23,466	13,918	23,710	3,136	3,957	193

Source: EPA 2011a.

### Air Quality Related Values

AQRVs include visibility or a specific scenic, cultural, physical, biological, ecological, or recreational resource identified for a particular area. Air pollution can impact AQRVs through ambient exposure to elevated atmospheric concentrations, such as ozone effects to vegetation, through impairment of scenic views by pollution particles in the atmosphere, and through deposition of air pollutants, such as sulfur and nitrogen compounds, on the earth’s surface through precipitation or dry deposition. AQRVs on federal lands are identified and managed within the respective jurisdictions of several land management agencies, including the US Forest Service (USFS), National Park Service (NPS), US Fish and Wildlife Service (USFWS), and the BLM. Class I areas are afforded specific AQRV protection under the Clean Air Act. Under NEPA, Class II areas may be analyzed to assess AQRV impacts if they are identified as sensitive Class II areas.

Table 3.5 summarizes Class I and sensitive Class II areas in or near the planning area. Portions of Glacier National Park and the UL Bend Wilderness are Class I areas located within the planning area. The Fort Peck Indian Reservation is adjacent to the eastern boundary of the planning area, while the Medicine Lake Wilderness is approximately 100 km east of the planning area and the Great Bear Wilderness is near the southwest corner of the planning area. Sensitive Class II areas include two Indian Reservations within the planning area and the Bear Paw Battlefield and several National Wildlife Refuges (NWRs).

**Table 3.5**  
**Class I and Sensitive Class II Areas In or Near the HiLine Planning Area**

Area Name	Jurisdictional Agency
<b>Class I Areas</b>	
Glacier National Park	NPS
UL Bend Wilderness	USFWS
Great Bear Wilderness	USFS
Fort Peck Indian Reservation	Tribal
Medicine Lake Wilderness	USFWS
<b>Sensitive Class II Areas</b>	
Bear Paw Battlefield	NPS
Bowdoin NWR	USFWS
Charles M. Russell NWR	USFWS
Creedman Coulee NWR	USFWS
Fort Belknap Indian Reservation	Tribal
Lake Thibadeau NWR	USFWS
Medicine Lake NWR	USFWS
Rocky Boys Indian Reservation	Tribal
U.L. Bend NWR	USFWS

NWR = National Wildlife Refuge.

## Deposition

Atmospheric deposition refers to the processes by which air pollutants are removed from the atmosphere and deposited on terrestrial and aquatic ecosystems. Deposition is reported as the mass of material deposited on an area in a given period (e.g., kilogram per hectare per year [kg/ha-yr]). Wet deposition refers to air pollutants deposited by precipitation, such as rain and snow. One expression of wet deposition is precipitation pH, a measure of the acidity or alkalinity of the precipitation. Dry deposition refers to gravitational settling of particles and adherence of gaseous pollutants to soil, water, and vegetation. Total deposition refers to the sum of airborne material transferred to the Earth's surface by both wet and dry deposition. Total nitrogen deposition is calculated by summing the nitrogen portion of wet and dry deposition of nitrogen compounds, and total sulfur deposition is calculated by summing the sulfur portion of wet and dry deposition of sulfur compounds.

The normal range of precipitation pH is 5.0–5.6 (Seinfeld 1986). At the Havre Agricultural Research Station, 2010 annual average precipitation pH was approximately 5.49 (NADP 2011a). The planning area has low nitrate wet deposition (2 kg/ha kilograms per hectare [kg/ha]) and ammonium wet deposition (0.9 kg/ha) compared to the rest of the United States, which has nitrate deposition values from 1–12 kg/ha and ammonium deposition values of 0.2–7.1 kg/ha (NADP 2011b).

Total nitrogen deposition at the Glacier National Park station was 1.67 kg/ha-yr in 2009 (CASTNet 2011). The planning area has low nitrate and ammonium deposition compared to the rest of the United States (NADP 2011b). With regard to total sulfur deposition, approximately 0.8 kg/ha-yr of sulfate was deposited at Glacier National Park during 2009 (CASTNet 2011). High elevation ecosystems in the park are particularly sensitive to nitrogen deposition because high elevation areas receive greater amounts of snow and rain and short growing seasons and shallow soils limit the capacity of soils and plants to absorb nitrogen. Nitrogen deposition can also contribute to nitrogen enrichment, which can potentially change the species composition of sensitive terrestrial and aquatic communities.

Atmospheric deposition can also cause acidification of lakes and streams. One expression of lake acidification is the change in acid neutralizing capacity, the lake's capacity to resist acidification from atmospheric deposition. Acid neutralizing capacity is expressed in units of micro-equivalents per liter ( $\mu\text{eq/L}$ ). Lakes with acid neutralizing capacity values of between 25 to 100  $\mu\text{eq/L}$  are considered to be sensitive to atmospheric deposition, lakes with acid neutralizing capacity values of between 10 to 25  $\mu\text{eq/L}$  are considered to be very sensitive, and lakes with acid neutralizing capacity values of less than 10 are considered to be extremely sensitive (Fox, et al. 1989).

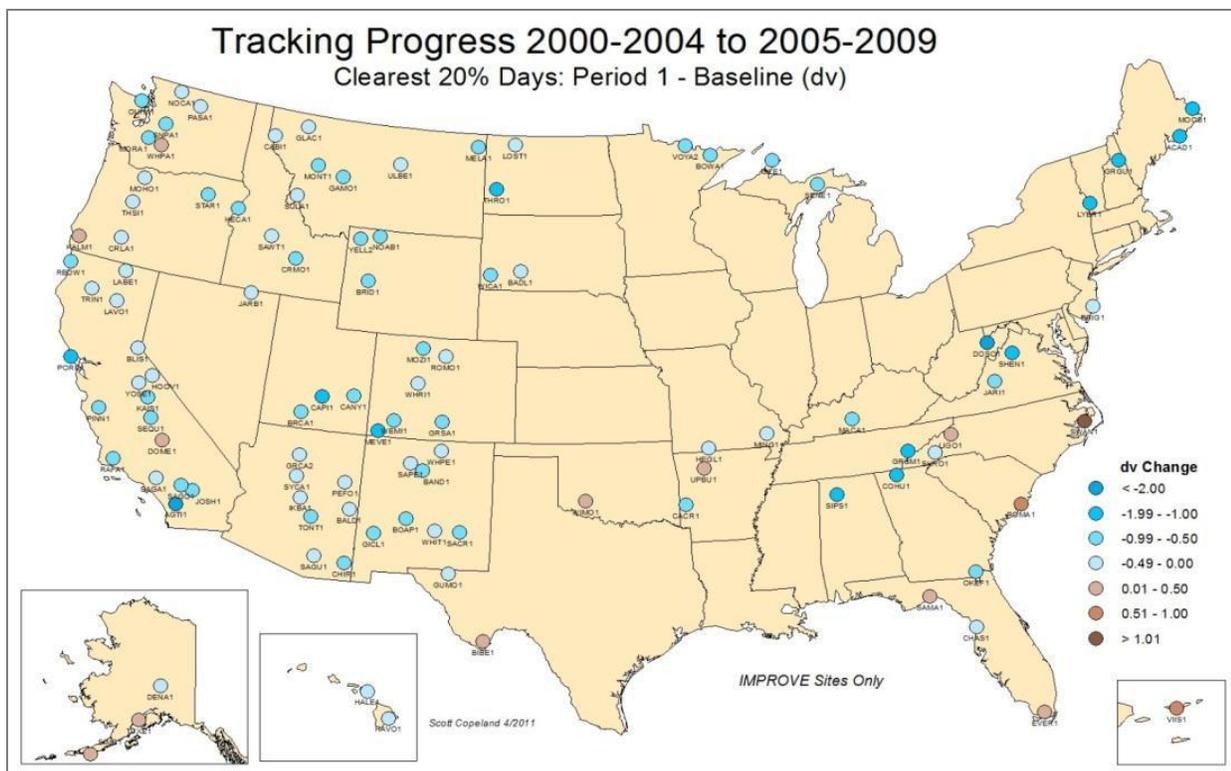
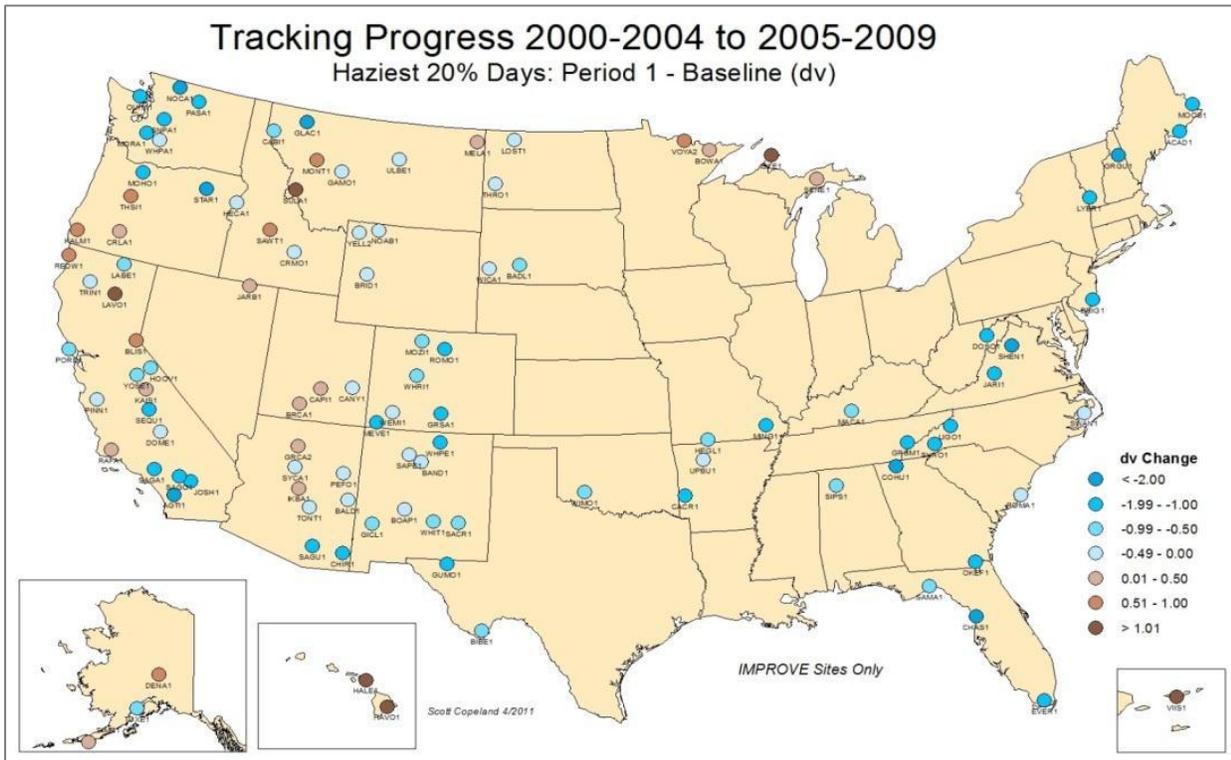
## Visibility

Visibility is a measure of how far and how well an observer can see a distant and varied scene. Pollutant particles in the atmosphere can impair scenic views, degrading the contrast, colors and distance an observer is able to see. Light extinction is used as a measure of visibility and is calculated from the monitored components of fine particle mass (aerosols) and relative humidity. Light extinction is expressed in terms of deciviews, a measure for describing perceived changes in visibility. One deciview is defined as a change in visibility that is just perceptible to an average person, which is approximately a 10-percent change in light extinction. To estimate potential visibility impairment, monitored aerosol concentrations are used to estimate visibility conditions for each monitored day. Aerosol species affecting visual range include ammonium sulfate, ammonium nitrate, organic mass, elemental carbon, soil elements, and coarse mass.

Daily visibility values are ranked from clearest to haziest and divided into three categories to indicate the mean visibility for all days (average), the 20% of days with the clearest visibility (20% clearest), and the 20% of days with the worst visibility (20% haziest). Visibility can also be defined by standard visual range (SVR), which is the farthest distance at which an observer can see a black object viewed against the sky above the horizon; the larger the SVR, the cleaner the air. Since 1980, the Interagency Monitoring of Protected Visual Environments (IMPROVE) network has measured visibility in national parks and wilderness areas.

Visibility trends at Class I areas in or near the planning area are shown in Figure 3.3. On the 20% worst visibility days, visibility improved significantly at Glacier National Park, improved slightly at UL Bend Wilderness, and degraded slightly at Medicine Lakes Wilderness. When the 20% best visibility days are considered, visibility improved slightly to moderately at all three sites.

**Figure 3.3**  
**Visibility Trends on Hazeiest and Clearest Visibility Days (2005-2009)**



Source: IMPROVE 2011.

## Smoke Management

Smoke contains large quantities of CO and particulate matter. The MDEQ regulates prescribed fire activity under the authority of the Montana Open Burning Regulations (ARM Title 17, Section 8, Subchapter 6). The MDEQ issues open burn permits and, along with several counties, operates a Major and Minor Open Burning Smoke Management Program under the authority of MDEQ’s Open Burning Regulations. In cooperation with the MDEQ, smoke management for prescribed fire activity is managed by the Montana/Idaho Airshed Group. Prescribed burns would be completed in a manner that is consistent with procedures established by the Montana/Idaho Airshed Group and the associated permit conditions of the Major Open Burning Permit and the rules addressing Minor Open Burning pursuant to the MDEQ Open Burning Regulations.

## Climate

The topography of the state plays an important role in Montana’s climate and creates a variable climate in the planning area. The Continental Divide exerts a marked influence on the climate of adjacent areas. West of the Divide the climate might be termed a modified northern Pacific coast type, while to the east, climatic characteristics are decidedly continental and much of the planning area is in the rain shadow of the Rocky Mountains. The continental climate of northcentral and northeastern Montana is characterized by light precipitation totals, abundant sunshine, low relative humidity, and a relatively large annual and diurnal temperature range. A climate summary for Havre, Montana is presented in Table 3.6.

<i>Period of Record: 2/1/1961 to 12/31/2008</i>													
	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Annual</i>
Average Max. Temperature (F)	25.6	33	43.3	57.2	67.9	76.5	85.3	84.1	71.5	59.1	41.5	29.9	56.2
Average Min. Temperature (F)	4.2	10.7	19.8	30.7	41	49.2	53.8	52.2	41.8	31	18.4	7.9	30.1
Average Total Precipitation (in.)	0.45	0.33	0.56	0.92	1.67	2.14	1.48	1.12	1.06	0.56	0.4	0.45	11.14
Average Total Snow Fall (in.)	8.5	5.9	6.8	5.3	1.1	0	0	0	0.3	1.7	4.8	7.3	41.7
Average Snow Depth (in.)	4	3	1	0	0	0	0	0	0	0	1	2	1

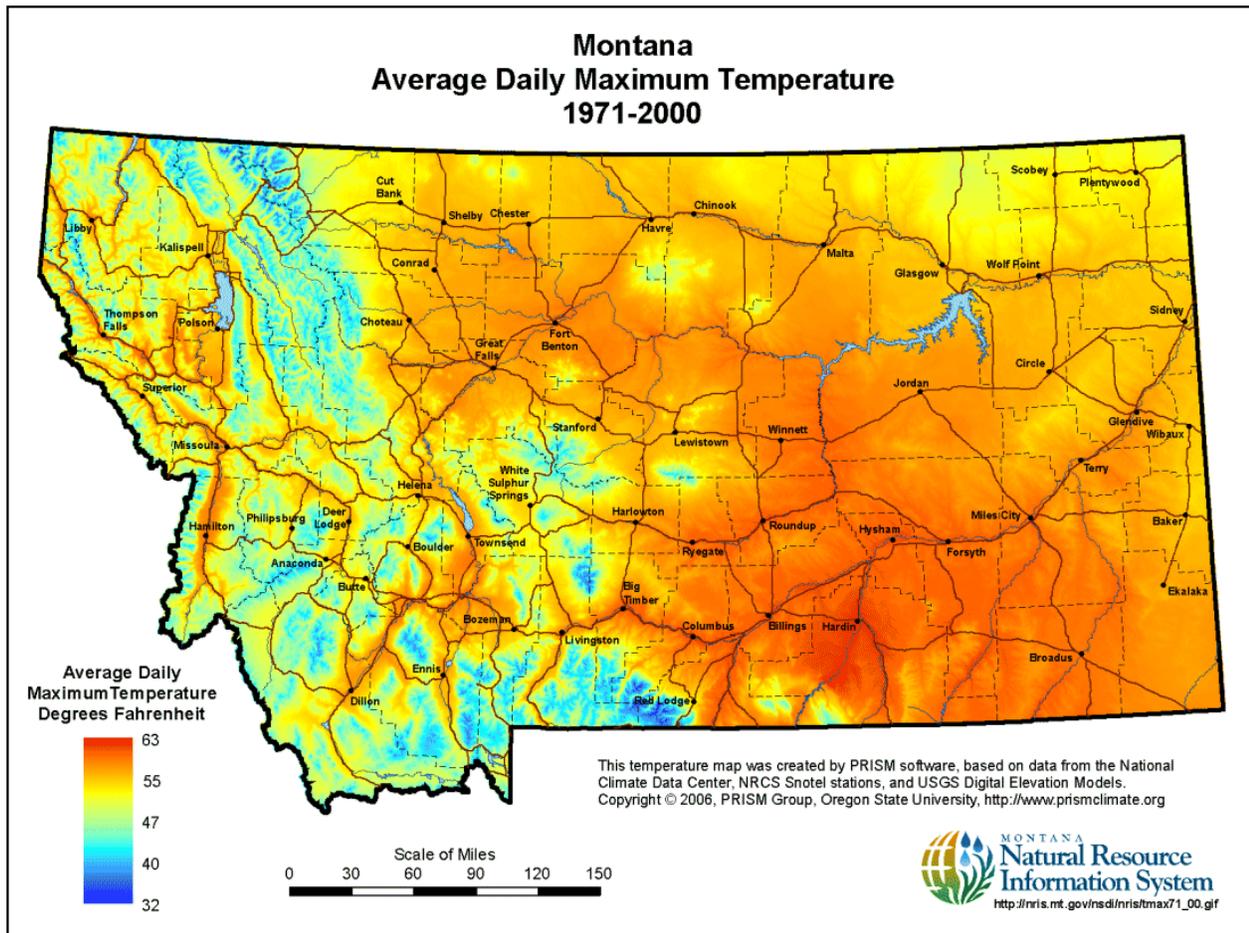
Source: Western Regional Climate Center, 2010.

## Temperature

January is also the coldest month, with average daytime high temperatures in the mid to low 20s, and average night time low temperatures near zero. Overnight lows below zero are common during winter, and record low temperatures for all six of the cooler season months from October through March are below 0°F.

During the summer, hot weather occurs fairly often in northern Montana. July and August are the warmest months with average daytime highs in the mid-80s. This midsummer warmth is fairly steady, seldom severe, and is tempered by normal night time temperatures in the 50s. Generally, adequate moisture permits rapid plant and crop development during most growing seasons. Figure 3.4 shows statewide average daily maximum temperature.

**Figure 3.4**  
**Montana Average Daily Maximum Temperature**



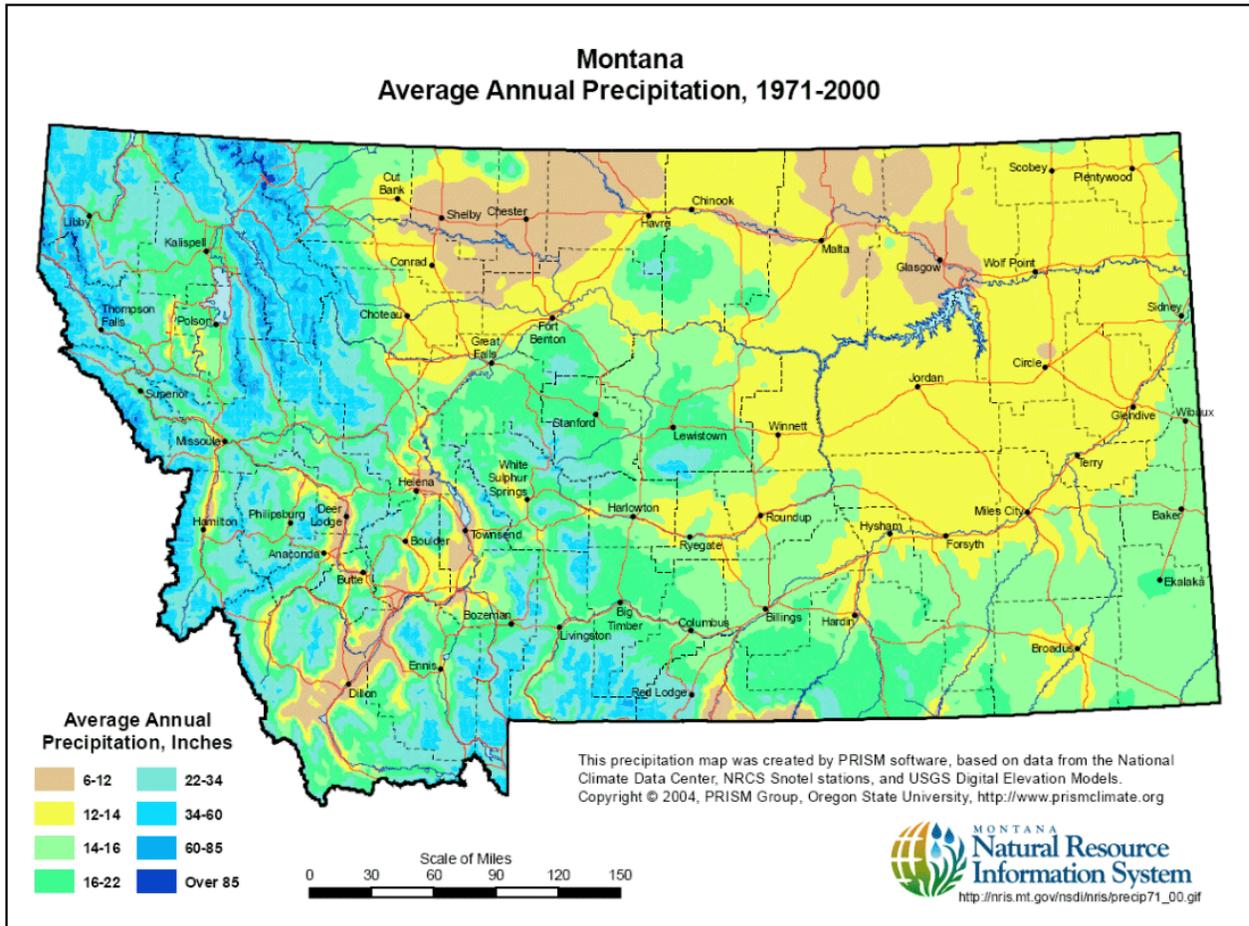
Source: NRIS 2011.

## Precipitation

Precipitation varies widely and seasonally, and over the mountainous areas depends largely on topographic influences. Areas on the windward side of mountain ranges are generally the wettest. In the planning area, May and June are the two rainiest months. Most annual precipitation comes as rain, and daily total precipitation seldom exceeds one inch. During the spring, precipitation events are associated with larger scale weather systems that bring widespread snow and rain to the eastern plains. Summer rains fall almost entirely during brief, but frequently intense thunderstorms. Figure 3.5 depicts the statewide average annual precipitation.

Annual snowfall is approximately 25 inches in Malta and Glasgow and 42 inches in Havre. Most snow falls during November through April. The greatest volume of flow of Montana's rivers occurs during the spring and early summer months with the winter snowpack melt. Heavy rains falling during the spring thaw can constitute a serious flood threat. Ice jams may occur during the spring breakup, usually in March, and cause backwater flooding. Flash floods, although restricted in scope, are probably the most numerous and result from locally heavy rainstorms in the spring and summer.

**Figure 3.5**  
**Montana Average Annual Precipitation**



Source: NRIS 2011.

### Other Climatic Features

Severe storms of various types occur in northern Montana; however the most troublesome are hailstorms that cause crop and property damage. Tornadoes develop infrequently (approximately two per year) and occur more frequently in the eastern part of the planning area. Local but severe windstorms can occur from a few to several times a year. Drought in its most severe form is not common, but dry years do occur. All parts of the state rarely suffer from dryness at the same time.

In spite of figures that indicate cold winters, growing seasons (freeze-free periods) are four months or more in much of the agricultural area. In lower elevation areas of the planning area, the freeze-free period is 115-140 days, allowing time for growing many crops (MSU 2011).

### Climate Change

Climate is the combination of temperature, humidity, atmospheric pressure, wind, rainfall, sunshine, cloudiness, and other meteorological characteristics in a given region over a long period of time. Climate differs from weather, which is the present condition of these characteristics and their variations over shorter periods. Climate change involves long-term trends indicating a noticeable shift in climate.

Primary climate indicators that can be monitored include ambient air temperature, atmospheric pressure, wind, relative humidity, precipitation amounts and timing, annual snow pack levels, stream flow volume and timing, and solar radiation.

The Intergovernmental Panel on Climate Change (IPCC) concluded “warming of the climate system is unequivocal” and “most of the observed increase in globally average temperatures since the mid-20th century is very *likely* due to the observed increase in anthropogenic greenhouse gas concentrations.” Chapter 9 of Working Group I of the 2007 IPCC Report (IPCC 2007) addressed the causes of climate change. Some of the conclusions included: 1) human-induced warming of the climate system is widespread, 2) “it is *likely*” that there has been a substantial anthropogenic contribution to surface temperature increases since the mid-20th century, and 3) surface temperature extremes have “*likely*” been affected by anthropogenic forcing. As with any field of scientific study, there are uncertainties associated with the science of climate change. This does not imply that scientists do not have confidence in many aspects of climate change science. Some aspects of the science are known with virtual certainty because they are based on well-known physical laws and document trends (EPA 2008).

The temperature of the planet’s atmosphere is determined by the amount of solar radiation absorbed by the earth and its atmosphere. GHGs (primarily carbon dioxide [CO<sub>2</sub>], methane, and nitrous oxide [N<sub>2</sub>O]) increase the earth’s temperature by reducing the amount of solar energy that re-radiates back into space. In other words, more heat is trapped in the earth’s atmosphere when atmospheric concentrations of GHGs are greater. While GHG emissions have occurred naturally for millennia and are necessary for life on earth, increased atmospheric concentrations of GHGs as well as land use changes are contributing to an increase in average global temperature. This warming is associated with climatic variability that exceeds the historic norm and is known as climate change. Extensive explanations of climate change causes and effects are provided in the *Climate Change Supplementary Information Report: Montana, North Dakota, and South Dakota Bureau of Land Management* (BLM 2010a), IPCC Fourth Assessment (IPCC 2007), *Climate Change Indicators in the United States* (EPA 2011b), and *Global Climate Change Impacts in the United States* (USGCRP 2009).

Annual GHG emissions for Montana, the United States, and the world are summarized in Table 3.7. Annual emissions of GHGs are usually quantified in units of metric tons (mt). A metric ton is equivalent to approximately 2,005 pounds (1.102 short tons). The combined effect of emissions of multiple GHGs is reported in terms of carbon dioxide equivalent (CO<sub>2</sub>e), which is calculated by multiplying emissions by a global warming potential (GWP) number that takes into account each gas’ atmospheric longevity and its heat-trapping capability. The GWP of CO<sub>2</sub> is set at 1. EPA determined other GHGs’ relative climate change potentials over a 100-year time period. In EPA regulations effective as of November 1, 2013, global warming potentials for methane and nitrous oxide are 21 and 310, respectively. The EPA proposed to revised these global warming potentials to 25 (methane) and 298 (nitrous oxide). CO<sub>2</sub>e emissions given in this document are based on global warming potential values of 21 and 310 because data referenced for comparison purposes are based on these values.

<i>Entity</i>	<i>Data Year</i>	<i>CO<sub>2</sub>e Emissions (10<sup>6</sup> mt)</i>
Montana <sup>2</sup>	2007	50.4
United States <sup>3</sup>	2011	6,702
Global <sup>4</sup>	2004	49,000

<sup>1</sup> Emissions exclude GHG emissions and sequestration due to land use and land use changes.

<sup>2</sup> World Resources Institute Climate Analysis Tool (WRI 2011).

<sup>3</sup> Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013 (EPA 2013a).

<sup>4</sup> Climate Change 2007: Synthesis Report (IPCC 2007).

Other organizations, such as the IPCC, have set different GWPs and these vary depending on the time frame being analyzed. For example, estimates of methane’s global warming potential over a 20-year period range from 72 to 105. The BLM uses the methane global warming potentials that are specified in EPA regulations and are used for GHG emission reporting under 40 *Code of Federal Regulations* Part 98 as of November 1, 2013. This approach allows for consistent comparisons with state and national GHG emission inventories. The BLM also provides estimated methane and nitrous oxide emission quantities in Chapter 4, which allow the public to use other global warming potentials to calculate CO<sub>2</sub>e, if desired.

GHG emission sources within the planning area include combustion equipment such as heaters and engines, oil and gas development and production, coal mining, fire events, motorized vehicle use (construction equipment, cars and trucks, and off-highway vehicles), livestock grazing, facilities development, and other equipment exhaust and fugitive emissions. Contributions to climate change also result from land use changes (conversion of land to less reflective surfaces that absorb heat, such as concrete or pavement), changes in vegetation, and soil erosion (which can reduce snow's solar reflectivity and contribute to faster snowmelt). Emission controls on some sources can reduce GHG emissions.

Global atmospheric concentrations of GHGs are determined by the quantity of GHGs emitted to and removed from the atmosphere. Global concentrations of CO<sub>2</sub>, methane, and N<sub>2</sub>O in 2009 were 387 parts per million (ppm), 1,744 parts per billion (ppb), and 323 ppb, respectively (EPA 2011b). More recently, the CO<sub>2</sub> concentration monitored at the Manua Loa Observatory in Hawaii surpassed 400 ppm for the first time in May 2013. Atmospheric concentrations of CO<sub>2</sub> can be reduced by carbon storage in forests, woodlands, and rangelands, as well as in underground carbon sequestration projects. Vegetation management can provide a source of CO<sub>2</sub> (e.g., prescribed burns) or it can provide a sink of CO<sub>2</sub> through vegetation growth. The net storage or loss of carbon on rangelands and grasslands in northern Montana is generally small and difficult to estimate or measure. Most soils within the northern Montana contain relatively little organic matter compared to forest soils and forests and woodlands make up approximately 7% of the total acres on public lands in the planning area.

## Climate Change Trends

Climate change trends include two types of trends: historic and predicted. Historic trends describe climate changes that have already been observed. Predicted climate change indicates modeled future changes based on assumptions of future global GHG emissions and resulting environmental effects. Climate change will continue into the future even if GHG emissions remain at current levels or decrease. Long lag times are associated with the massive thermal energy stored in oceans, which can take decades, or even centuries, to adjust to climate changes (EPA 2010b). In addition, the long lifetimes of many GHGs contribute to committed climate change. For example, CO<sub>2</sub> typically remains in the atmosphere for 50–200 years, depending on how long it takes CO<sub>2</sub> molecules to be absorbed by plants, land, or the ocean. N<sub>2</sub>O is also long-lived; it remains in the atmosphere for approximately 120 years. In contrast, methane has a shorter lifetime and remains in the atmosphere for approximately 12 years (EPA 2010b). Additional types of GHGs also contribute to climate change, but their impact is substantially less due to their relatively small concentrations in the atmosphere.

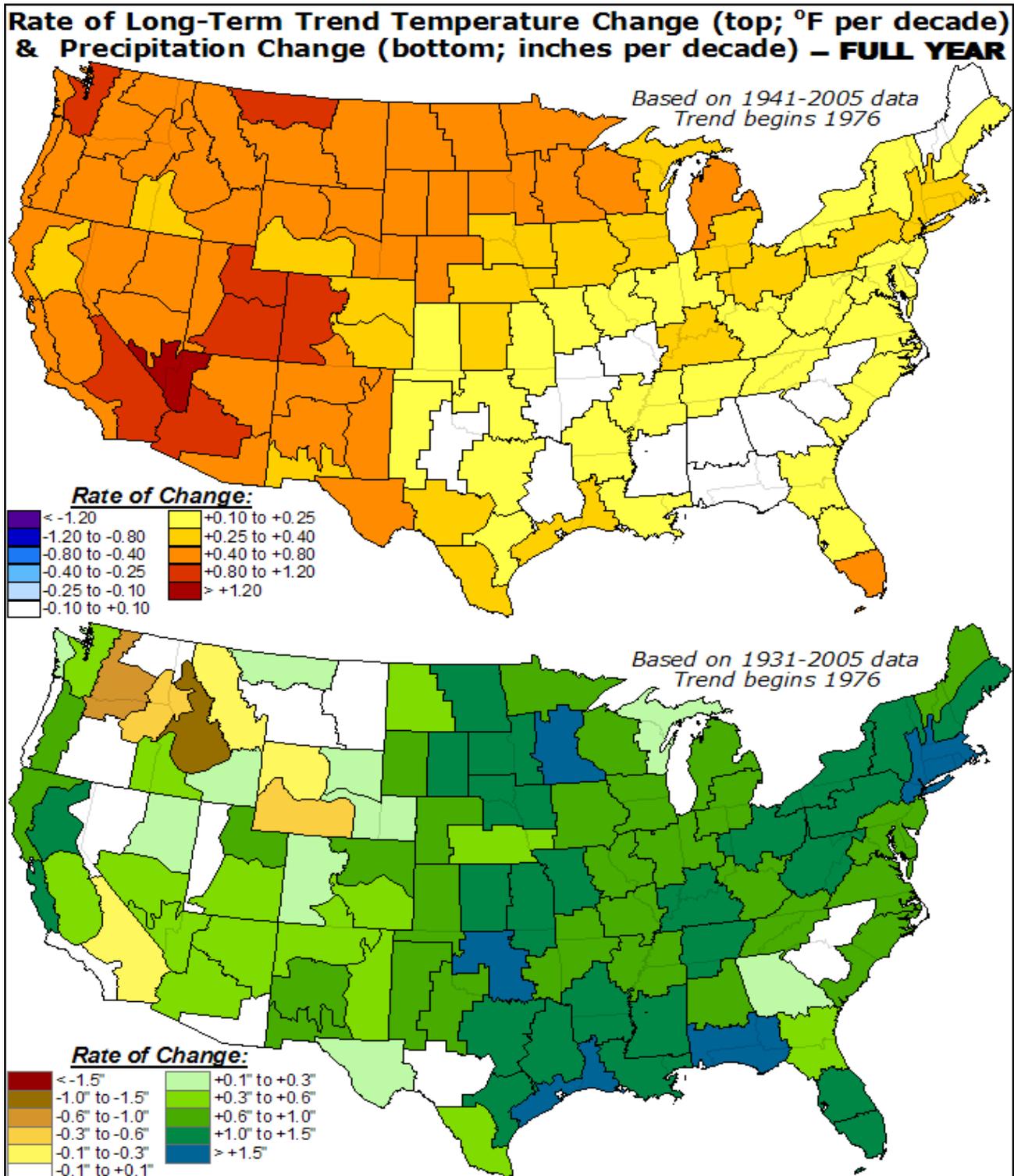
## Temperature and Precipitation

Historical global mean surface temperatures have increased nearly 1.3°F from 1906 through 2008 (GISS and Sato 2010). Northern latitudes (above 23.6 through 90.0° N) have exhibited greater temperature increases of nearly 2.1°F since 1900, with nearly a 1.8 °F increase since 1970 alone (GISS and Sato 2010). In northern Montana, data from 1941 through 2005 indicate a long-term temperature increase between 0.40–1.20 °F per decade since 1976, as shown in Figure 3.6. With regard to precipitation, data from 1931 through 2005 indicate little change or up to a 0.3” inch increase in total annual precipitation in northern Montana since 1976.

Predictions of future temperature changes compared to a 1961–1979 baseline indicate that temperatures in northern Montana may increase 2–3°F by 2010–2029, as shown in Figure 3.7. Along with generally increasing temperatures, more days are predicted to have maximum temperatures greater than 100°F (USGCRP 2009). Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures is more likely than increases in daily maximum temperatures. Rising temperatures would increase water vapor in the atmosphere, and reduce soil moisture, increasing generalized drought conditions, while at the same time enhancing heavy storm events.

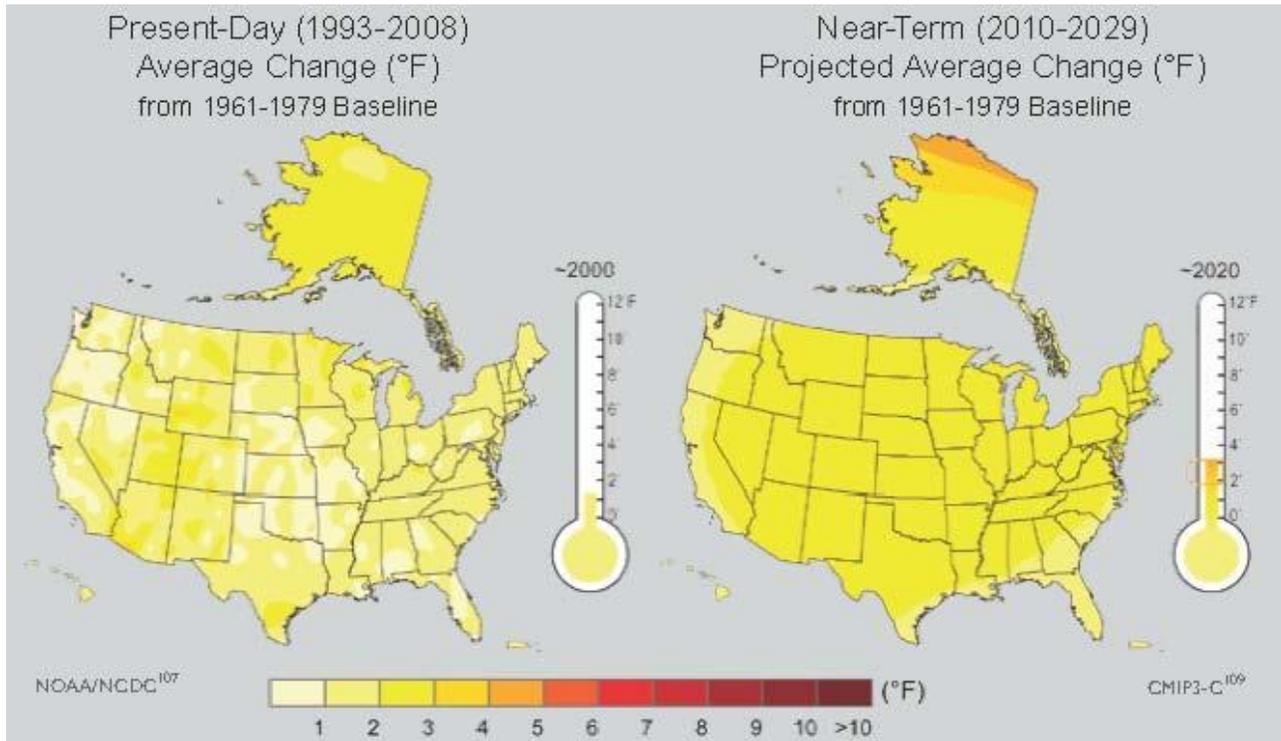
In addition to temperature and total precipitation changes, predicted climate changes include changes in precipitation timing by season and an increase in extreme rainfall events and other extreme weather events. Due to warming temperatures melting glaciers and thermal expansion within the seawater, ocean levels are expected to rise. These changes will affect a broad array of ecosystems and affect food supplies and human health.

Figure 3.6  
Long-Term Historical Temperature and Precipitation Trends



Source: NOAA, 2011.

**Figure 3.7**  
**Near-Term Predicted Temperature Increases**



Source: USGCRP 2009.

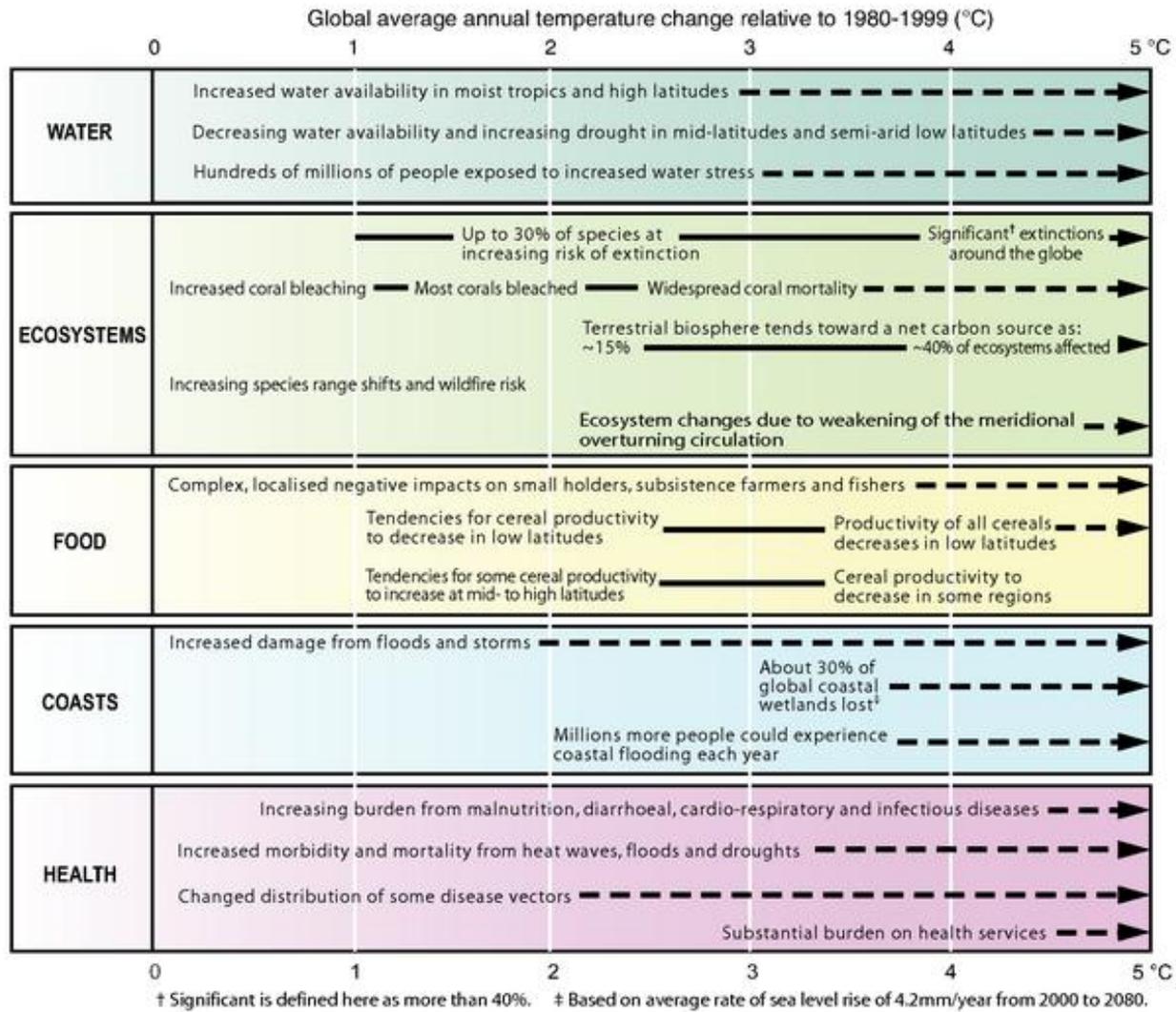
## Climate Change Effects on Resources

Climate change affects nearly all resources at local, regional, and global levels. The effects of climate change are so widespread that they cannot all be described in this RMP. To illustrate the effects of global temperature change, Figure 3.8 provides broad examples of climate change impacts. As global temperatures increase, effects on resources become more significant.

Temperature and precipitation changes could directly affect air quality. Air quality would be improved if increased precipitation reduces wind-blown dust, but would be degraded if dry periods cause increased particulate emissions. Ground-level ozone may also be affected. High temperatures are a contributing factor in ground-level ozone formation, which is also highly dependent on NO<sub>x</sub> and VOC concentrations.

Climate change will affect water quality in northern Montana. Increasing temperatures are likely to contribute to increased evaporation, drought frequencies, and declining water quantity. The warming of lakes and rivers will adversely affect the thermal structure and water quality of hydrological systems, which will add more stress to water resources in the region (IPCC 2007). Northern Montana depends on temperature-sensitive springtime snowpack to meet demand for water from municipal, industrial, agricultural, recreational uses and BLM-authorized activities. The USGS notes that mountain ecosystems in the western United States are particularly sensitive to climate change. Higher elevations, where much of the snowpack occurs, have experienced three times the global average temperature increase over the past century (USGS 2010). Higher temperatures are causing more winter precipitation to fall as rain rather than snow, which contributes to earlier snowmelt. Additional declines in snowmelt associated with climate change are projected, which would reduce the amount of water available during summer (USGCRP 2009). Rapid spring snowmelt due to sudden and unseasonal temperature increases can also lead to greater erosive events and unstable soil conditions.

**Figure 3.8**  
**Examples of Resource Impacts Due to Climate Change**



Source: IPCC, 2007, Summary for Policy Makers

Increases in average summer temperatures and earlier spring snowmelt in northern Montana are expected to increase the risk of wildfires by increasing summer moisture deficits (USGCRP 2009). Studies have shown that earlier snowmelts can lead to a longer dry season, which increases the incidence of catastrophic fire (Westerling, et al. 2006). Together with historic changes in land use, climate change is anticipated to increase the occurrence of wildfire throughout the western United States. Predicted climate change impacts to wildfires show large increases in the annual average acreage burned. Based on modeling that assumed a 1°C (1.8°F) increase in global average temperature, a 393% increase in acreage burned in wildfires is predicted in northern Montana (NRC 2011). Air quality, ecosystem, and economic impacts from wildfires are extensive. Wildfires also release large quantities of CO<sub>2</sub> that would increase atmospheric GHG concentrations.

There is evidence that recent warming is affecting terrestrial and aquatic biological systems (IPCC 2007). Warming temperatures are leading to earlier timing of spring events such as leaf unfolding, bird migration, and egg-laying (IPCC 2007). The range of many plant and animal species has shifted poleward and to higher elevation, as the climate of these species' traditional habitat changes. As future changes in climate are predicted to be even greater than past changes, there will likely be even larger range shifts in the coming decades (Lawler, et al. 2009). Warming temperatures are also

linked to earlier vegetation growth in the spring and longer thermal growing seasons (IPCC 2007). In aquatic habitats, increases in algal abundance in high-altitude lakes have been linked to warmer temperatures, while range changes and earlier fish migrations in rivers have also been observed (IPCC 2007). Climate change is likely to combine with other human-induced stress to further increase the vulnerability of ecosystems to additional pests, additional invasive species, and loss of native species. Climate change is likely to affect breeding patterns, water and food supply, and habitat availability to some degree. Sensitive species in the planning area, such as the Greater Sage-Grouse, which are already stressed by declining habitat, increased development, and other factors, could experience additional pressures due to climate change.

More frequent flooding events, erosion, wildfires, and hotter temperatures pose increased threats to cultural and paleontological sites and artifacts. Heat from wildfires, suppression activities and equipment, as well as greater ambient daytime heat can damage sensitive cultural resources. Similarly, flooding and erosion can wash away artifacts and damage cultural and paleontological sites. However, these same events may also uncover and lead to discoveries of new cultural and paleontological localities.

Climate change also poses challenges for many resource uses on BLM-administered land. Increased temperatures, drought, and evaporation may reduce seasonal water supplies for livestock and could impact forage availability. However, in non-drought years, longer growing seasons resulting from thermal increases may increase forage availability throughout the year. Shifts in wildlife habitat due to climate change may influence hunting and fishing activities, and early snowmelt may affect winter and water-based recreational activities. Drought and resulting stress on vegetation is likely to increase the frequency and intensity of mountain bark beetle and other insect infestations, which further increases the risk of fire and reduces the potential for sale of forest products on BLM-administered lands.

## National Actions to Reduce GHGs

United States GHG emissions are expected to decline due to EPA's listing of GHGs as a regulated air pollutant and implementation of several recent GHG regulatory programs. Facilities with large emissions of GHGs must report these emissions to EPA and new facilities with large expected GHG emissions must obtain air quality permits and potentially limit GHG emissions. With regard to oil and gas activities, EPA regulations in 40 *Code of Federal Regulations (CFR)* Part 60, Subpart OOOO require emission controls or reductions on hydraulically fractured gas wells, oil and condensate storage tanks, gas venting, and equipment leaks that are predicted to reduce national methane emissions by 1 million tons per year. These regulations became effective on October 15, 2012.

The EPA also requires facilities that emit more than 25,000 metric tons per year (mtpy) of CO<sub>2</sub>e to report emissions on an annual basis. Regulations for this reporting program were promulgated under the Greenhouse Gas Mandatory Reporting Rule in 40 *CFR* Part 98. While most types of sources began reporting emissions for calendar year 2010, onshore oil and gas sources began reporting emissions for calendar year 2011. The EPA's Facility Level Information on GreenHouse Gases Tool (FLIGHT) website provides public access to the data and became operational in April 2013 (EPA 2013a). The BLM obtained data in June and September 2013 and assessed emissions and emission sources for calendar year 2011.

No coal mines on BLM surface or mineral estate within the planning area reported GHG emissions under the EPA Mandatory Reporting Rule (EPA 2013a). Because only underground mines are required to report, it is possible that some surface mines could have had emissions exceeding 25,000 mtpy CO<sub>2</sub>e and were not required to report.

One oil and gas company reported activities within the planning area that contributed to emissions exceeding the 25,000 mtpy reporting threshold (EPA 2013b). EPA regulations require that onshore oil and gas facilities report total GHG emissions for each oil and gas basin in which they operate. Based on EPA's FLIGHT map, the western portion of the Williston Basin included Valley and Phillips counties within the planning area. No companies reported emissions within other portions of the planning area. The company reporting emissions in Phillips and Valley County also included emissions from operations in the Miles City Field Office (MCFO) and in North Dakota. A method to separate HiLine-specific emissions from MCFO and North Dakota emissions was not available.

Within the Williston Basin as a whole, including the planning area and portions of the MCFO, North Dakota, and South Dakota, CO<sub>2</sub> accounted for 85 percent of CO<sub>2</sub>e emissions, while methane accounted for 15 percent of CO<sub>2</sub>e emissions. Table 3.8 provides a summary of the largest source types for CO<sub>2</sub> and methane emissions.

**Table 3.8  
Oil and Gas Greenhouse Gas Emission Sources within the Williston Basin**

<i>Oil and Gas Source Type</i>	<i>Percentage of Total CH<sub>4</sub> Emissions</i>	<i>Percentage of Total CO<sub>2</sub> Emissions</i>	<i>Percentage of Total CO<sub>2</sub>e Emissions</i>	<i>Is Source Subject to Regulation That Will Reduce Future CH<sub>4</sub> Emissions?</i>
Associated gas venting and flaring	28%	38%	37%	Yes
Gas well completions and workovers	27%	2%	6%	Yes
Gas from produced oil sent to atmospheric tanks	19%	10%	12%	Yes
Other equipment leaks	9%	<0.1%	1%	Yes
Natural gas pneumatic devices	6%	<0.1%	1%	Yes
Flare stacks	6%	24%	21%	No
Other sources	3%	4%	1%	---
Natural gas distribution combustion equipment	2%	24%	21%	No
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	

Source: Derived from GHG emissions reported for calendar year 2011 under the EPA GHG Mandatory Reporting Rule for the entire Williston Basin. Reported emissions include oil and gas companies with 25,000 mtpy or more CO<sub>2</sub>e emissions within the Williston Basin. (EPA 2013a).

The following types of oil and gas methane emission sources accounted for less than 1 percent of CO<sub>2</sub>e emissions based on Williston Basin FLIGHT data (EPA 2013a):

- acid gas removal (zero methane emissions);
- blowdown vent stacks (zero methane emissions);
- centrifugal compressors (zero methane emissions);
- dehydrators;
- enhanced oil recovery injection pump blowdown (zero methane emissions);
- flare stacks;
- natural gas pneumatic pumps;
- natural gas pneumatic devices;
- reciprocating compressors;
- transmission tanks (zero methane emissions);
- well testing venting and flaring; and
- well venting and liquids unloading.

A trade-off exists between methane and CO<sub>2</sub> emissions. Combustion of methane contained in natural gas decreases methane emissions while increasing CO<sub>2</sub> emissions. Flaring of natural gas is an example of this trade-off. Natural gas produced during oil production is known as associated gas. Flaring and venting of associated gas is the largest source of methane emissions in the oil-producing portions of the Williston Basin. Much of this gas can be captured and sold if infrastructure, such as pipelines, is available to transport the gas to natural gas plants and end users. Due to rapid development in the Williston Basin and long distances to areas with large populations, pipelines and other infrastructure have not kept pace with associated gas produced from oil wells in the Bakken Field within the Williston area. Slower oil and gas development rates within the HiLine, primary natural gas production, and availability of established pipelines mean that associated gas flaring and venting would be less frequent within the planning area than in eastern portions of the Williston Basin.

Within the U.S. Department of the Interior (USDI), several initiatives have been launched to improve the ability to understand, predict, and adapt to the challenges of climate change. The Secretary of the Interior signed Secretarial Order 3289 on February 22, 2010, establishing a Department-wide, scientific-based approach to increase understanding of climate change and to coordinate an effective response to impacts on managed resources. The order reiterated the importance of analyzing potential climate change impacts when undertaking long-range planning issues, and also established several initiatives including the development of eight Regional Climate Science Centers. Regional Climate

Science Centers would provide scientific information and tools that land and resource managers can apply to monitor and adapt to climate changes at regional and local scales (USDI 2010). The North Central Climate Science Center, which includes the planning area, was established in 2011.

Given the broad spatial influence of climate change, which requires response at the landscape-level, the USDI also established Landscape Conservation Cooperatives, which are management-science partnerships that help to inform management actions addressing climate change across landscapes. These Cooperatives are formed and directed by land, water, wildlife and cultural resource managers and interested public and private organizations, designed to increase the scope of climate change response beyond federal lands.

Rapid ecoregional assessments are one of the tools the BLM uses to monitor and respond to the effects of climate change. Ecoregional assessments are geospatial landscape evaluations that are designed to identify areas of high ecological value within an ecoregion that may warrant conservation, adaptation, or restoration. These assessments can help to identify resources that are being impacted by climate change and provide information to facilitate the subsequent development of an ecoregional conservation strategy for plants, wildlife and fish communities on public lands. Ecoregional assessments can identify areas, species, and ecological features and services that are sensitive to ecosystem instability and changes in climatic conditions. One of the objectives of the BLM rapid ecoregional assessments is to provide guidance for adaptation and mitigation planning in response to climate change.

In addition to efforts being undertaken to better respond and adapt to climate change, other federal initiatives are being implemented to mitigate climate change. The Carbon Storage Project was implemented to develop carbon sequestration methodologies for geological (i.e., underground) and biological (e.g., forests and rangelands) carbon storage. The project is a collaboration of federal agency and external stakeholders to enhance carbon storage in geologic formations and in plants and soils in an environmentally responsible manner. The Carbon Footprint Project is a project to develop a unified GHG emission reduction program for the USDI, including setting a baseline and reduction goal for the Department's GHG emissions and energy use. More information about USDI's efforts to respond to climate change is available from <http://www.doi.gov/whatwedo/climate/cop15/index.cfm>.

## Cultural Resources

Cultural and archaeological resources in the planning area consist of artifacts, features, spiritual and ceremonial areas, and sites representing occupation of the area by Native Americans and early Euro-Americans.

### Introduction and Overview

As of July 2007, a total of 9,827 cultural sites were recorded in the planning area; of those sites, 7,689 were prehistoric sites and 2,138 were historic sites (Walker-Kuntz and Walker-Kuntz 2007, 47). Evidence indicates that occupation of the area began with Ice Age hunters approximately 12,000 years ago, but most of the prehistoric aboriginal remains date from the last 3,000 years. Tipi rings, cairns (stone piles), lithics (stone tools), buffalo jumps, and other features related to subsistence or religious activities are typical prehistoric remains. Among these recorded sites are the locations that tribes consider to be Traditional Cultural Properties (TCPs). TCP sites are significant both culturally and historically to a community. The sites are considered important to contemporary Indian religious beliefs and several are located within the planning area. Other sensitive locations are burial sites and historic trails (e.g., the Nez Perce Trail).

The historic period begins with early 19th century explorers and fur trappers who explored along the Missouri and Marias Rivers. Several fur trade posts were built along the Missouri River and steamboats operated on the river somewhat later. During the 1800s, development was influenced by a variety of occupations (e.g., gold seekers, fur traders, settlers, and businessmen). The area was also influenced by several historically important events such as the Indian conflicts, construction of a railroad, and the discovery of oil. In the late 1880s, the construction of the Great Northern Railway from Minot, North Dakota, to Helena, Montana, changed the entire character of the study area. Many new communities sprang up along the railroad line. The railroad also paved the way for the homestead boom. Most of the historic remains originate from the homesteading period of 1910-1925.

## Prehistoric Overview

Based on archaeological evidence from the surrounding Northwestern Plains, it is believed that Ice Age hunters arrived in the region approximately 12,000 years ago in search of big game such as mammoth and giant bison. The hunter's chief weapon was a thrusting spear tipped with a large stone point. Approximately 4,000 years later (8,000 years ago) the hunting technology had changed and their descendants were using an atlatl, a lever device and a short spear tipped with a smaller stone point. Big game animals were still hunted, but the species were modern in appearance by then. Wild plant foods such as roots and berries were also harvested. Approximately 1,500 years ago, the hunting technology changed again and the inhabitants of the region were using bows and arrows in their hunting practices.

Most groups were organized into small bands of hunters and gatherers who were heavily dependent upon the naturally occurring resources in their environment. Subsistence was based on resource availability and campsites were generally located near important, exploitable resources. For the Plains tribes, the most important resource was the bison. The subsistence practices and settlement patterns of these tribes tended to reflect the nomadic nature of the bison.

Horses were acquired by the native inhabitants of the region around A.D. 1700-1750. The acquisition of the horse radically changed the life ways of the region's inhabitants. No longer was survival dependent on the immediate territory in which they lived; the horse allowed them the mobility to efficiently exploit new territories. Thus, even the hunting and gathering cultures evolved into specialized bison hunters by A.D. 1800.

When the first Europeans arrived in the study area, they encountered a variety of indigenous communities that shared many cultural characteristics, including a subsistence based primarily on bison hunting, nomadic settlement patterns, tribal organization, and a standardized sign language. The native groups inhabiting the region during the 19th century include the Piegan (Blackfeet), Atsina (Gros Ventre), River Crow, Sioux, and Assiniboine. Frequent visitors to the study area were the Mountain Crow, Shoshoni, Flathead, and Nez Perce; most of the visits were for hunting. From the late 1700s until the early 1880s, the Metis culture regularly crossed the Canadian border along a corridor between the present day towns of Malta and Chinook on their annual southward trek in pursuit of buffalo.

## Prehistoric Site Types

The prehistoric sites in the planning area are classified into four functional types – habitation, procurement, industrial, and ritual – as determined from features, artifacts, and other cultural remains present.

Habitation sites consist of features/materials which indicate everyday domestic activities including, but not limited to, clothing construction and food preparation. Examples of such sites are debris scatters (middens or trash scatters), hearths, cairns (stone piles), and tipi rings.

Procurement sites consist of features representing specific subsistence activities such as hunting bison, deer, or pronghorn, and gathering wild plants. Buffalo jumps, traps, and impoundments (with associated processing areas) are the most common procurement sites in the resource area. Such sites are characterized by large deposits of bones at the base of bluffs and cliffs or in steep coulees.

Industrial sites are generally represented by scatters of stone waste debris (debitage), hammer stones, rough or damaged tools, and chunks of fine-grained stone and quartzite. The best source material can be found in Valley and Phillips Counties.

Ritual or ceremonial sites include rock art panels, burials, medicine wheels, intaglios, cairns, and rock or wooden vision quest structures.

## Archaeological Site Density and Distribution

The average site density for prehistoric sites in the study area has been calculated at one site per 66 acres (Walker-Kuntz and Walker-Kuntz 2007, 49). This site density figure is misleading because the sites are not randomly distributed across the landscape, but are more numerous in some areas than in others. Furthermore, the term “site” is ambiguous in the glaciated prairie region because it does not specify site size or the number of features in an average site. This

complicates distributional analyses because the sites in certain areas (along the Milk River and in glacial moraine or pothole areas) can be exceedingly large and complex, and thus difficult to define boundaries. The practice of either lumping several small sites over a rather wide area to create one large site, or splitting up features that are relatively close to accommodate a project within a given area, further complicates distributional analyses. The splitting of features into two or more sites is very apparent in the existing inventory records.

The archaeological site distribution pattern of the glaciated prairie in Phillips and Valley Counties is considered quasi-random in nature; that is, sites are distributed randomly across large portions of the landscape, without regard to general landform types or environmental zones, but there are also certain areas where sites are concentrated. The random distribution pattern occurs in the undifferentiated uplands of the glaciated prairie or rolling hinterlands; the sites found here are invariably small habitation and industrial types (tipi rings, cairns, and lithic scatters).

The concentrated pattern occurs along the principal drainages or in moraine areas; these areas contain large numbers of small and large habitation sites, as well as most procurement and ritual/ceremonial sites. Also, site densities appear to vary with respect to ecological zones (sagebrush/grass plains, river breaks, forested escarpments and plains, and forested mountains and foothills), and sites tend to be concentrated on major topographical features (ridges, buttes, escarpments, stream terraces, toe slopes, etc.)

## Historic Overview

Recorded history in the study area begins with the written records of early 19th century Euro-American explorers. The Lewis and Clark Expedition camped at numerous locations along the Missouri River in 1805 and 1806. Part of the expedition's mission was to identify the plants and animals found along their journey and expedition members were responsible for naming many of the landforms and features in the area.

### Fur Trade

In the early 1800s, organized fur trade enterprises such as the Rocky Mountain Fur Company, American Fur Company, and smaller companies followed the Lewis and Clark Expedition into the Missouri River country. The Hudson's Bay Company undoubtedly had operated in the study area prior to this time, but there are no known records of its exploits. After 1829, the year the American Fur Company established Fort Union at the mouth of the Yellowstone River, several trading posts or "forts" were built in or near the study area, including Fort Piegan and Fort McKenzie near the mouth of the Marias River, and Fort Campbell and Fort Lewis near the present city of Fort Benton. Competition and Indian conflicts often required the posts to be relocated to more favorable locations.

By the 1850s, the heyday of the fur trade was beginning to wane due to changes in international textile markets and near extirpation of many fur-bearing animals in western North America. Buffalo hides, whiskey, and Indian annuities soon replaced beaver skins as the main items of trade on the Upper Missouri. In addition to the American Fur Company, several other trading companies began operating out of Fort Benton during this time.

In 1865, the firm of Smith, Hubbell, and Hawley bought the American Fur Company from Pierre Chouteau, Jr. Through its western affiliate, Durfee and Peck, the new company established a number of small trading posts in the region soon afterward. These included Fort Peck near the mouth of the Milk River, Fort Hawley near the mouth of the Musselshell River, Fort Turnay (Janeaux's Post) on upper Frenchman Creek, and Fort Browning on the Milk River near Dodson. Several smaller companies had trading posts along the Milk River in Valley County (e.g., Hammell's houses near Vandalia and Tom Campbell's houses near Hinsdale).

### Military Posts and the Indian Conflict

With the influx of fur traders, hide hunters, gold seekers, businessmen, and settlers into the region, conflicts arose with the native tribes. During the mid-1800s, Blackfeet, Gros Ventre, and Sioux war parties raided outlying settlements and wagon trains with considerable frequency. In order to quell the white settlers' fears about Indian attacks, military posts were established throughout Montana. In 1879, Fort Assiniboine, located near Havre, was the largest fort in the area. Army garrisons were also occasionally stationed at Indian agencies, trading posts, and steamboat landings.

In 1876, the Sioux and Cheyenne tribes that participated in the Battle of the Little Bighorn crossed the Missouri River near Fort Peck on their way to Canada. In September-October 1877, the Nez Perce under Chief Joseph were defeated by troops under the command of Colonel Nelson Miles at the Battle of the Bear Paw Mountains, near present-day Chinook, ending their epic 1,500 mile attempted retreat to Canada. Following the battle nearly 300 Nez Perce managed to escape and make their way 40 miles north into Canada where they joined Sitting Bull near Fort Walsh. In 1879, a party of Sitting Bull's Sioux followers left their temporary home in Canada and engaged a cavalry unit near the Milk River and present-day Saco. The conflict continued between Native Americans and the Euro-American settlers in northern Montana until 1882, when army troops concluded a campaign to remove Canadian Indians and Metis from U.S. soil.

Northern Montana held the last of America's large buffalo herds. After reducing the buffalo populations in Texas and other southern states/territories, market hunters turned their attention to the northern herd during the years 1876 to 1883. After the decimation of the buffalo, trade with the Indians abruptly ceased. The trading companies then shifted their focus to supplying military posts, mining camps, and ranching communities both in and adjacent to the region.

## **Native American Treaties and Tribal Lands**

Beginning in the middle of the 19th century, the U.S. Government initiated the first of several treaties with the Plains Indians, first to facilitate exploration and trading by delineating tribal territories and discouraging intertribal warfare, and later to open up former tribal lands to settlement for purposes of farming, ranching, and mining. The Fort Laramie Treaty of 1851 gathered all the Plains tribes together and "mapped out the domain of each tribe and obligated each tribe to respect the lands of its neighbors" (Malone and Roeder 1976). The Blackfeet and Gros Ventre were recognized as the occupants of the northcentral region of Montana, east of the continental divide. The Fort Laramie treaty served as the first in a series of negotiations which included the 1855 Blackfeet Treaty Council. The 1855 Council included representatives from Piegan, Blood, Blackfeet, Gros Ventre, Flathead (Salish), Upper Pend d' Oreille, Kootenai, Nez Perce, and Cree Tribes. During the negotiations intertribal warfare was declared illegal and the Blackfeet and Gros Ventre were restricted to the northcentral region of Montana. The remaining tribes were granted access to the common bison hunting grounds east of the Rocky Mountain front (Walter 1982). As a direct result of the efforts of then Superintendent of Indian Affairs Isaac I. Stevens a vast Indian reserve was created.

In 1887, the Northwest Commissioners negotiated the formation of separate Blackfeet, Fort Belknap, and Fort Peck Reservations for the region's Indian inhabitants. This was in large part based upon Agent W. L. Lincoln's perception that the Indian Reserve established in 1855 was too large for its Indian proprietors, and pressure from white miners, ranchers, and businessmen to open the northern part of the Reserve to white settlement. The Gros Ventre and Assiniboine insisted that the Little Rocky Mountains remain within their boundaries.

BLM lands within the HiLine District are aboriginal lands that have been ceded back to the Government by the tribal groups in the area through various treaties. These treaties reserved rights to the tribes. These rights consist of the use of the ceded lands to hunt, fish, gather plants and for religious/ceremonial use. Areas specifically used for religious purposes are the Sweet Grass Hills and the Little Rocky Mountains. The BLM will continue to consult with tribal groups to identify areas of importance and access to them.

## **Transportation Industry**

Steamboats, which had been in use on the Lower Missouri River for 28 years, were finally able to reach Fort Benton in 1859, due to the development of shallow draft vessels. Although not actually in the planning area, the establishment of a port at Fort Benton was one of the most important historic events for central and northern Montana because almost all immigration, commerce, and communication to and from the outside world came through there (Malone, Roeder, and Lang 1991). The last steamboat traffic between Bismarck, North Dakota and Fort Benton occurred in 1891.

In 1887, the construction of James J. Hill's St. Paul, Minneapolis, and Manitoba Railroad across the HiLine changed the entire character of the region. With the railroad came new settlements like Malta, Glasgow, Saco, Hinsdale, and Vandalia, as well as cheaper and more efficient transportation of products and supplies. The completion of the Montana Central Railroad and its subsequent merger with Hill's company to form the Great Northern Railway in 1889 virtually eliminated steamboat traffic on the Missouri River. Subsequently, the towns along the river like Carroll, Rocky Point,

and Kerchival were abandoned. A branch line of the Great Northern Railway was completed from Saco to Whitewater, Loring, Chapman, Turner, and Hogeland in 1928.

## **Farming and Ranching**

Although the northern portion of the study area was officially Indian reservation land, a number of adjoining ranches grazed sheep and cattle there during the late 1870s and early 1880s. The big cattle outfits trailing their cattle through the Milk River country at this time were the Neidringhaus Brothers from Canada; the Davis, Hauser, and Stuart Ranch (DHS) from the Judith Basin; Harry Rutter from Hinsdale; and Conrad Kohrs from the Sun River country.

The practice of grazing very large cattle herds on the open range worked well enough during a period of abundant rainfall and relatively mild winters. The “Hard Winter” of 1886-1887 proved disastrous to the open range cattle industry and alternative methods of raising cattle had to be developed. Since extended grazing was not legal on the reservation, the cattlemen sent T.C. Power and Joseph K. Toole to Washington to lobby Congress to open the reservation lands to settlement. The 1888 Act of Congress created three smaller reservations (Blackfeet, Fort Belknap, and Fort Peck) for the region’s Indian inhabitants and ceded 17.5 million acres back to the U.S. Government. Shortly afterward, ranchers moved into the more productive areas like the Milk River bottoms.

A number of developments followed the completion of the railroad and ushered in the Homestead Boom of 1910-1918. These developments included the availability of larger homestead tracts, the development of new dryland farming techniques, the production of new mechanized farm equipment, and the creation of the Milk River Irrigation Project. Homesteaders came by the thousands and the region was quickly settled by Germans and Scandinavians from the Midwest, as well as by eastern European immigrants. Times were good during the boom period because the climate was abnormally favorable and the war in Europe kept the demand and prices for farm products high. By the end of World War I, a severe drought had begun and food prices had fallen drastically. These conditions lasted for several years. By 1925, one out of every two homesteaders had lost or abandoned his farm and half the banks in the region had failed. Many of the homestead lands in the study area fell into disuse and disrepair.

## **Energy Development**

The search for oil and gas began shortly after Euro-Americans moved into Montana. Some of the earliest energy development activity began between the late 1880s and early 1900s in the Flathead-Glacier Park area (Passmann 1992). Oil was noted in the Kevin Rim area in 1912, when oil was found during water well drilling on the Miller Ranch (Passmann 1992). Drilling began in 1921, but did not result in a producing well until June 1922. The Kevin-Sunburst oil field created opportunities for locals and non-locals alike, and at one point, the towns of Kevin and Sunburst were relatively bustling. However, the decline began in the 1930s due to new conservation measures that were implemented by the federal government. These conservation measures made it more difficult for the oilmen to get their product to market (Passmann 1992). The oil field itself has become an historic property, as some of the equipment and infrastructure are still standing.

Oil and gas development occurred similarly in the eastern part of the planning area. The Bowdoin Gas Field near Malta was producing gas for Saco by 1916, and upon completion of a pipeline, for Malta and Glasgow by 1929.

## **The Great Depression and Federal Relief Programs**

During the Great Depression, the federal government implemented work relief programs all over the country. The Works Progress Administration, Civilian Conservation Corps, Resettlement Administration, and a variety of other programs provided relief to people/families who had been hit hardest by the Great Depression. These programs provided a stipend of food, clothing, shelter, and medical care in exchange for hard work. The stipend was typically divided so that some went home to the worker’s family and the worker retained a small percentage, thus allowing the worker to support his family. Many of the national parks, forests, and rangelands have these federal works programs to thank for their infrastructure and administrative sites.

In 1936, the Works Progress Administration began constructing the Fort Peck Dam. At the same time, the Resettlement Administration initiated the Malta Plan to move destitute upland farmers to irrigated lands in the Milk River Valley. The lands acquired by the Resettlement Administration would eventually be managed for grazing.

The Taylor Grazing Act of 1934 was the first federal effort to regulate grazing on federal public lands. It establishes grazing districts and a permitting system to manage livestock grazing in the districts to improve rangeland conditions and regulate their use. In 1937, Congress passed the Bankhead-Jones Act, which authorized the government to buy homesteaded lands and rehabilitate them for grazing use; these are now called land utilization or “LU” lands and are managed by the BLM.

### Historic Site Types and Distribution

Historic sites in the study area consist primarily of structural remains from the homesteading period from 1910 to 1925. Historic sites are classified into homesteads or farmsteads, town sites, railroad sidings, rural schools, and rural churches. Other related features are refuse dumps, fences, field clearings, corrals, wells, and graffiti. Historic sites may contain stone, wood, and concrete buildings in various states of preservation; rectangular stone, concrete, and earthen foundations; cellars, outhouses, cisterns, and well depressions; and other manufactured materials. Standing structures are rare on LU lands since one of the provisions of the Bankhead-Jones Act required all improvements to be removed prior to government acquisition.

The area also contains historic sites from the early 1800s, but most are located on private lands or other federal and state lands. These include Lewis and Clark campsites, trading posts, military posts, steamboat landings and woodhawk cabins, U.S. Army and Indian battle sites, old and new Indian agencies, gold mines and associated features, mining town sites, and early ranching sites.



Sweet Grass Hills

Photo by Kathy Tribby

Historic trails once passed through the area, including the Carroll Trail, the North Overland Road, and the Nez Perce National Historic Trail. Most of the historic sites and trails are noted mainly in the historical literature; few have ever been documented and evaluated on the ground. Other historic sites likely to be found on BLM lands in the planning area are those related to gold mining, notably in the Little Rocky Mountains. These sites consist of the remnants of mines, adits, tramways, kilns, cabins, dumps, and equipment. The larger sites, such as mills and mining towns (Zortman and Landusky) are located on private land.

A total of 284 historic sites (13.3% of the currently recorded sites) are located in the Glasgow Field Office area, 611 historic sites (28.6%) in the Malta Field Office area, and 1,243 historic sites (58.1%) in the Havre Field Office area (Walker-Kuntz and Walker-Kuntz 2007, 47). The variation in the number of sites primarily reflects the amount of inventory conducted in the field office management areas.

The distribution of historic sites on BLM lands coincides primarily with the distribution of LU lands in the planning area. Since the LU lands are formerly homestead lands, the overwhelming majority of historic sites on LU lands are homestead-related. Homestead sites are also located on public domain lands, due to the failure of some homesteaders to “prove up,” but they are few in number.

As mentioned previously, the homestead sites consist mainly of foundations and depressions which are the remnants of land restoration practices related to the Bankhead-Jones Act. Because of their poor condition, most of these sites are not considered significant. The Malta and Glasgow Field Office areas have considerable quantities of LU lands; however, most of those in the Glasgow Field Office management area are located north of the Milk River.

Gold mining in the Little Rocky Mountains began in 1884, when Pike Landusky developed the first placer mines and founded the town of Landusky. He and others patented the richest mine, the August, in 1893. With other patents, mining in the Little Rocky Mountains expanded. By 1903, the town of Zortman was established with a cyanide mill in Alder Gulch. Mining in the Little Rocky Mountains continued on and off over the decades until 1979, when a modern surface mining operation opened. The Zortman/Landusky Mine continued to operate until the late 1990s and is now being reclaimed.

Mining also occurred in the Sweet Grass Hills in the past, but was sporadic and not as intensive as in the Little Rocky Mountains.

## Cultural Resources of Special Importance or Concern

Four locations in the planning area are important due to either the density and significance of their archaeological sites or their traditional cultural and religious significance to the tribes. These locations are the Big Bend of the Milk River Area of Critical Environmental Concern (ACEC), Sweet Grass Hills ACEC, Lonesome Lake, and the Kevin Rim ACEC.

The Big Bend of the Milk River ACEC contains an abundance of archaeological sites with unique characteristics and scientific values which warrant special attention. The ACEC consists of two large sites adjacent to the Milk River and includes the Henry Smith and Beaucoup site complexes, both of which contain bison kills and ceremonial and habitation sites. Both complexes are characterized by unique stone surface features and multiple occupation episodes. Other important, but lesser known sites nearby are unnamed bison kills, drive lines, meat processing sites, petroglyph boulders, and tipi ring concentrations.

The Sweet Grass Hills ACEC is located in the northwestern portion of the study area. The Sweet Grass Hills were accorded ACEC status because of their unique cultural resources and their cultural/historical significance to the tribes.

### LU/Public Domain Lands

**LU Lands (also referred to as Acquired Lands or Bankhead-Jones Lands):** Under Title III of the Bankhead-Jones Farm Tenant Act of July 22, 1937, the Department of Agriculture was authorized to purchase submarginal farm lands in the Great Plains region for purposes of reclamation, conservation, etc. Approximately two million acres were acquired and are termed “Bankhead-Jones Lands.” These lands are now under the administration of the BLM, are in the class of federal lands called “acquired lands” and are not subject to entry or disposal under the general public land laws.

**Public Domain Lands:** Vacant, unappropriated, and unreserved public lands, or public lands withdrawn by Executive Order 6910 of November 26, 1934, as amended, or Executive Order 6964 of February 5, 1935, as amended, and not otherwise withdrawn or reserved, or public lands within grazing districts established under Section 1 of the Act of June 28, 1934 (45 Stat. 1269), as amended, and not otherwise withdrawn or reserved.

The ACEC is part of a larger study area which has been determined eligible for the National Register of Historic Places as a Traditional Cultural Property (Figure 2.1 in Chapter 2), based on “significance derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices.”

Lonesome Lake contains over 1,000 stone circles along with other stone features and prehistoric sites. Based on this and other inventory information, the Lonesome Lake Complex has been evaluated as an Archaeological District, eligible for entry on the National Register of Historic Places.

The Kevin Rim ACEC has recently undergone a Class III Cultural Resource Inventory. Seventy-one new sites were recorded in the ACEC; and five sites and one historic district were previously recorded. These sites reflect an extensive representation of stone feature sites as well as a historic oil drilling district.

Other important cultural sites on BLM lands include the Beaver Creek bison kill sites (24PH1206 and 1324, 24PH8), and the Indian Lake Medicine Rock (24PH1005). These sites have been recorded, but have not been thoroughly researched. Each site may provide further information about past life ways.



Tipi Ring on Kevin Rim

Photo by Josh Chase

## Traditional Cultural Properties

The Little Rocky Mountains and the Sweet Grass Hills have been determined eligible for the National Register of Historic Places because each location is associated with the traditional beliefs of a Native American group about its origins, cultural history, and the nature of the world; a location where Native American religious practitioners have historically gone and are known to go today to perform ceremonial activities in accordance with traditional cultural rules of practice; and a location where an identifiable community has carried out economic, artistic, and other cultural practices important in maintaining its historical identity.

The Little Rocky Mountains were designated a Traditional Cultural Property (TCP) in 1994 through a Memorandum of Understanding with the BLM, Bureau of Indian Affairs, and Fort Belknap Community Council. The TCP was designated to protect cultural resources and values located in the Little Rocky Mountains and is shown on Figure 2.1 in Chapter 2.

The Sweet Grass Hills were designated a TCP in 1995 by the BLM in consultation with the Montana State Historic Preservation Office, and the Assiniboine, Blackfeet, Chippewa-Cree, and Gros Ventre Tribes and the Confederated Salish and Kootenai Tribes of the Flathead Nation. The TCP was designated to protect cultural resources and values located in the Sweet Grass Hills and is shown on Figure 2.1 in Chapter 2.

## Current Demand and Use of Cultural Resources

The demand for cultural resources derives from two sources: The public is interested in protecting and interpreting cultural resources as reminders of its heritage; and scientists, teachers, and/or academic institutions utilize cultural resources for research and educational purposes. Currently, the BLM has the resources to adequately meet the demand from both sources.

At the present time, very little active use of cultural resources is occurring in the planning area. Occasionally, BLM personnel will provide educational field trips to selected sites for school children or professional societies. Some historic sites, such as old schoolhouses, are being used for rural community meetings and as museums. For example, the BLM provided land for the Snake Creek schoolhouse some years ago, and Congress appropriated the Landusky School to the town of Landusky.

## Tribal Consultation

Previous consultation with tribes indicated that they use certain areas for religious and cultural purposes. Certain types of archaeological sites have cultural and religious significance. These include vision quest sites, monumental/anthropomorphic/zoomorphic rock features, rock art sites, burials, habitation sites with special purpose ceremonial structures, and ceremonial and/or dance grounds. These areas include the Sweet Grass Hills and the Little Rocky Mountains, which are designated Traditional Cultural Properties.

## Economics

The planning area consists of approximately 2.4 million surface acres of BLM land distributed across eight contiguous counties: Glacier, Toole, Liberty, Hill, Chouteau (north of the Missouri River), Blaine, Phillips, and Valley. The majority of these BLM surface lands are located in Phillips County (31%), Valley County (32%), and Blaine County (11%). BLM lands account for approximately 14% of the total land area and BLM mineral estate accounts for 28% of the mineral estate in the eight counties (see Table 3.25, BLM Surface and Subsurface Acres, in the Lands and Realty section). Much of the economic activity is confined to these eight counties because the area is remote and no major population or business centers exist near the boundaries to the east, north, or west. Major business centers to the south include Great Falls (approximately 90 miles south of Shelby and 110 miles southwest of Havre); Lewistown (approximately 100 miles southeast of Fort Benton); and Billings (approximately 200 miles south of Malta). Economic activity is further restricted by the following factors:

- Of the eight border crossings along the 300 mile border with Canada, only one (Port of Sweetgrass) is open 24 hours per day.
- Only one major highway (Highway 2) goes to the west over the Rocky Mountains to Kalispell (approximately 156 miles west of Shelby).
- Only one major highway (Highway 2) goes to the east (approximately 145 miles from Glasgow to Williston, ND and 229 miles to Bismarck, ND).
- Only four highways cross the Missouri River along the 270 mile southern border.

During the last century, ranching, farming, mining, natural gas development, the railroad, construction of Fort Peck Dam in the late 1930s, the establishment and subsequent closure of Glasgow Air Force Base in the late 1970s, and the Zortman/Landusky Mines (closed in the late 1990s) have all been important factors in the social and economic history of the area. More recently, outdoor recreation, tourism, and the growing presence of the U.S. Border Patrol have been

contributors to the local economies. Long-term economic trends have also been characterized by gradual population loss.

Agriculture played a dominant role in the region's initial post-European settlement and economic expansion. The development of the railroad across northern Montana in the late 1880s and the subsequent opening of the area to homesteading in the early 20th century ushered in an era of accelerated European settlement. Agriculture and other natural resource production helped spur the development of additional transportation infrastructure and the emergence of Havre, Malta, and Glasgow as regional trade and service centers for northcentral Montana. In more recent times, the establishment and subsequent closure of Glasgow Air Force Base, and federal water and wildlife management projects and programs have played pivotal roles in the region's economic development. Mineral and energy resource development, primarily in the form of mining and natural gas, have also shaped the area's economic history. Mining and oil and gas industries have also been important contributors to the regional economic base through their fiscal support for local government and education. The Cultural Resources section provides additional information on the history of the area.

Certain defining features of every area heavily influence and shape the nature of local economic activity. Principal among these are the size of the area's population, the presence of or proximity to large cities or regional population centers, types of longstanding industries such as oil and gas development and agriculture, and predominant land and water features and unique area amenities.

## Economic Characteristics and Trends

The following summary of economic trend information for the planning area is followed by a description of the key land uses in the planning area that could be affected by BLM management actions. These are: (1) oil and gas exploration, development, and production; (2) travel, tourism and recreation; (3) livestock grazing and production; (4) government; (5) ecosystem restoration; and (6) other mineral exploration, mining, and reclamation. BLM lands provide areas for hunting and fishing, hiking, camping, and general sightseeing, as well as providing important habitat for area fish and wildlife that spend time both on and off BLM lands.

Potential economic effects associated with this proposed RMP include changes in employment, income, public revenues, economic dependency, economic stability, and quality of life. The information contained in this section is presented to help clarify economic issues, describe relevant economic trends, and provide context for potential changes to economic indicators that may be predicted in the environmental analysis in Chapter 4.

Montana is one of the least densely populated states in the country, with an average population density of 6.8 persons per square mile compared to a national average of about 87.4 persons per square mile. The 8-county planning area had an average population density of 2.5 persons per square mile, with county population densities ranging from less than 1 person per square mile in Phillips County to nearly 6 people per square mile in Hill County where Havre is the center of local economic activity (U.S. Census Bureau 2010).

The information provided in Table 3.9 provides a snapshot of the local study area at both a small (county level) and large (8-county planning area) scale. Although the region surrounding the planning area is less densely populated (fewer people living within a square mile of each other) than the state, its economy is still relatively diverse and supports employment in a wide range of industrial sectors. Of the 344 industries present in Montana, 161 industries currently operate within the HiLine planning area. Assessing the employment contributions of individual sectors helps identify industries that are important to the local economy and provides measures for economic diversity. Economic diversity, or the extent to which economic activity is distributed among a number of industrial sectors, promotes long-term stability and provides greater employment opportunities. Economies which are highly specialized (i.e., those that depend on a few industries for the bulk of employment and income) tend to be more prone to cyclical fluctuations and offer job opportunities which use a more limited skillset. Economic specialization may also be of particular interest to those managing public lands when specialization occurs within industries related to the use of publically administered resources.

<i>County/Area</i>	<i>Employment</i>	<i>Households</i>	<i>Number of Industries/ Sectors</i>
Montana	634,895	444,197	344
8-County Planning Area	38,246	25,590	161
Blaine	3,166	2,604	106
Chouteau	3,462	2,467	94
Glacier	7,673	4,883	116
Hill	10,985	6,867	128
Liberty	1,526	1,030	74
Phillips	2,846	1,885	95
Toole	3,694	2,394	89
Valley	4,895	3,441	111

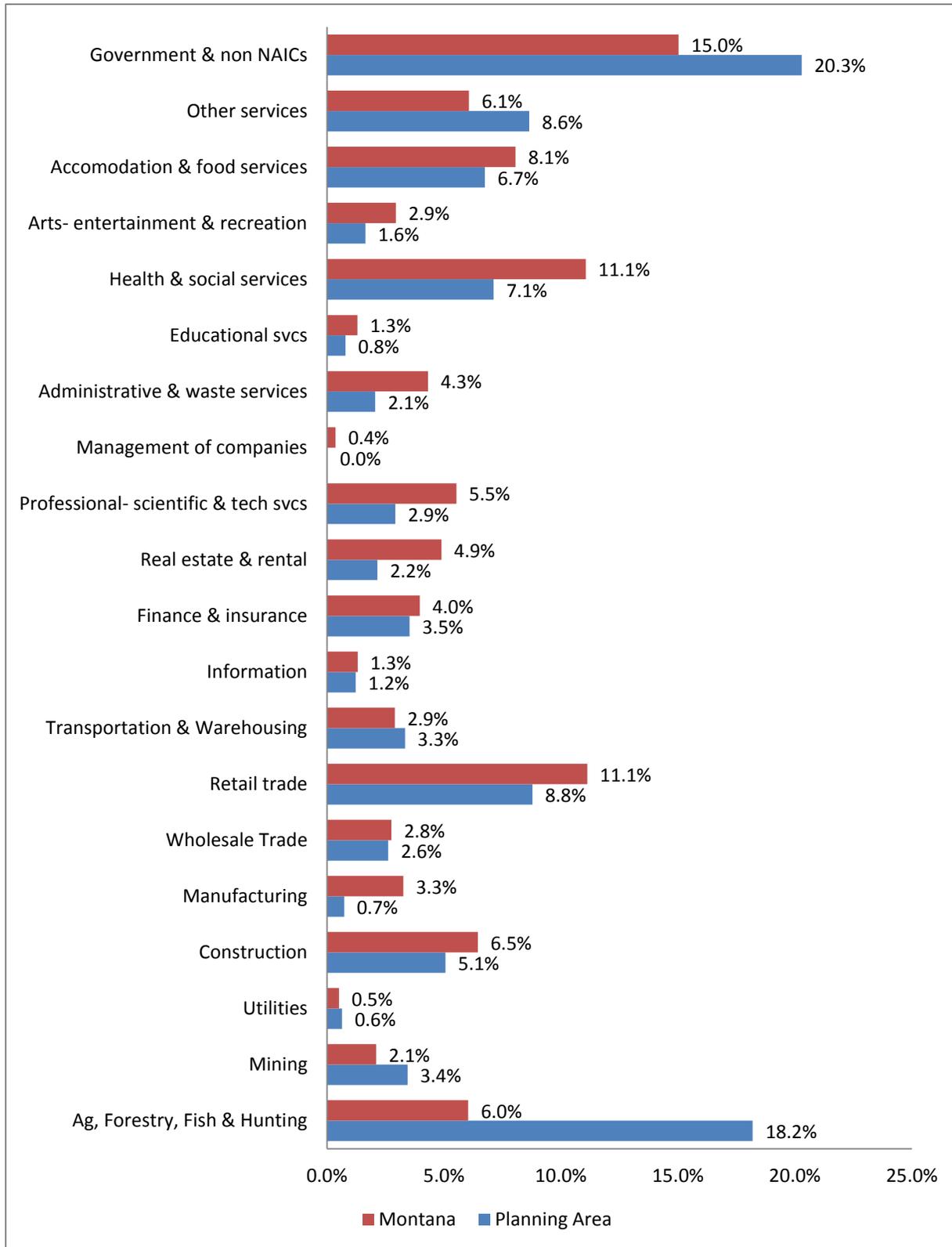
Source: IMPLAN (2012)

The Interior Columbia Basin Ecosystem Management Project identified communities that were specialized with respect to employment. Employment specialization can be examined using the ratio of the percent employment in each industry in the region of interest (eight-county planning area) to the percent of employment in that industry for a larger reference region (the State of Montana). For a given industry, when the percent employment in the analysis region is greater than in the reference region, local employment specialization exists in that industry (USFS 1998). As shown in Figure 3.9, applying this criterion to 2012 employment data for the HiLine planning area reveals that the region is highly specialized with respect to Agriculture, Forestry, and Fishing & Hunting (+ 12.2%) and Government and non-NAICs (+ 5.3%). The Government sector includes all federal, state and local employment while the Agriculture, Forestry, and Fishing & Hunting sectors is comprised of industries primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats. A portion of employment in these sectors is attributable to the management and utilization of natural resources administered by the BLM within the planning area. In this manner, the BLM is partially responsible for the region’s specialization with respect to Government and Agriculture, Forestry, and Fishing & Hunting sectors. Although employment in these sectors may be affected by alternative management on the HiLine, local specialization with respect to the Government and Agriculture, Forestry, and Fishing & Hunting is unlikely to be affected.

Total personal income (TPI) within the planning area has steadily risen over the last 20 years. Between 1990 and 2011 TPI within the 8-County area grew from \$ 943 million to \$ 2.18 billion (reported in inflation adjusted 2011 dollars) (Bureau of Economic Analysis 2012). Although per capita personal income (average income per person) within the study area is slightly lower than that across the state, the HiLine planning area supports an average household income slightly higher than the state’s average (Table 3.10). There are two major sources of personal income: (1) labor earnings or income earned through employment and (2) non-labor income. Labor earnings, or wages, were supported by 151 industrial sectors and represented approximately 58% of the study area’s TPI in 2011.

Personal income also includes non-labor income individuals receive from sources other than an employer. In general there are two categories of non-labor income, investment income (dividends, interest, and rent payments) and transfer payments from the government to individuals (Retirement & disability insurance, medical payments, welfare assistance, unemployment, and veteran’s benefits). Non-labor income’s share of TPI has grown drastically in recent years. In 1970 non-labor income accounted for nearly 24 percent of TPI within the study area. By 2011 non-labor income had grown to represent approximately 42 percent of TPI in the 8-county study area (Bureau of Economic Analysis 2012).

**Figure 3.9  
Employment Specialization**



IMPLAN, 2012

<i>County/Area</i>	<i>Total Personal Income (\$ Millions)</i>	<i>Non-Labor Income Share of TPI*</i>	<i>Per Capita Personal Income</i>	<i>Average Income per Household</i>
Montana	\$37,561.94	40%	\$37,369	\$84,561
8-County Planning Area	\$2,295.18	43%	\$37,073	\$89,690
Blaine	\$192.20	47%	\$28,760	\$73,810
Chouteau	\$217.76	44%	\$36,883	\$88,269
Glacier	\$435.48	45%	\$31,761	\$89,187
Hill	\$644.75	42%	\$39,396	\$93,892
Liberty	\$96.94	55%	\$40,528	\$92,326
Phillips	\$145.83	43%	\$35,329	\$77,368
Toole	\$264.07	38%	\$50,589	\$110,308
Valley	\$298.11	39%	\$39,722	\$86,635

IMPLAN, 2012

\*Bureau of Economic Analysis, 2012

Non-labor income’s increasing share of regional TPI can be attributed to increases in both investment income and transfer payments. Between 1970 and 2011 investment income as a share of TPI within the planning area grew by 98% from \$234 to \$464 million; while the region’s transfer payments increased by 233% from \$142 to \$473 million. Transfer payment’s growing share of local TPI can be attributed to large increases in both age-related and income maintenance transfer payments. Over this forty year period age-related payments (i.e. Medicare and retirement and disability benefits) increased 222% from \$ 80 to \$ 258 million as local payments associated with income maintenance (i.e. Medicaid and welfare assistance) increased 903% from \$15 to \$146 million.

### **BLM Land and Mineral Uses that Affect the Local Economy**

The effect of the BLM on local economic activity and conditions is related to BLM land use decisions and associated land uses. Surface and mineral estate and major BLM land/mineral uses by county are displayed in Table 3.11. This is followed by a narrative description of those major BLM land and mineral uses within the planning area.

<i>County</i>	<i>Total Acres</i>	<i>BLM Surface Acres</i>	<i>BLM % of Total Surface Acres</i>	<i>BLM-Administered Mineral Estate (Acres)</i>	<i>BLM % of Total Mineral Estate</i>	<i>Interactions with BLM Land/Mineral Uses</i>
Montana	93,155,840	7,967,376	8.6	37,789,542	40.6	Oil and gas leasing and production, livestock grazing, recreation use, rights-of-way
8-County Planning Area	17,594,739	2,441,268	13.9	5,015,010	28.5	Oil and gas leasing and production, livestock grazing, recreation use
Blaine	2,704,755	300,019	11.1	771,114	28.5	Oil and gas leasing and production, livestock grazing, recreation use
Chouteau	2,542,874	45,230	1.8	304,815	12.0	Oil and gas leasing and production, livestock grazing, recreation use
Glacier	1,916,621	1,060	<0.1	390,431	20.1	Oil and gas leasing and production, livestock grazing, limited recreation use

<b>Table 3.11 Surface and Mineral Estate and Major BLM Land/Mineral Uses by County</b>						
<i>County</i>	<i>Total Acres</i>	<i>BLM Surface Acres</i>	<i>BLM % of Total Surface Acres</i>	<i>BLM-Administered Mineral Estate (Acres)</i>	<i>BLM % of Total Mineral Estate</i>	<i>Interactions with BLM Land/Mineral Uses</i>
Hill	1,853,670	14,558	0.8	153,771	8.3	BLM Havre Field Office, oil and gas leasing and production, livestock grazing, recreation use
Liberty	915,046	7,620	0.8	66,492	7.3	Oil and gas leasing and production, livestock grazing, limited recreation use
Phillips	3,289,325	1,030,895	31.3	1,806,009	54.9	BLM Malta Field Office, oil and gas leasing and production, livestock grazing, recreation use
Toole	1,223,008	27,368	2.2	124,312	10.2	Oil and gas leasing and production, livestock grazing, recreation use
Valley	3,149,440	1,014,518	32.2	1,398,066	44.4	BLM Glasgow Field Office, oil and gas leasing and production, livestock grazing, recreation use

Source: Table 1.2

### Livestock Grazing and Production

Ranching is an important part of the history, culture, and economy of the planning area. Grazing is allowed on BLM lands under the Taylor Grazing Act and FLPMA for the purpose of fostering economic development for private ranchers and ranching communities by providing ranchers access to additional forage (GAO, Sept. 2005). The major contribution of BLM to the area’s livestock industry is largely through providing grazing lands. Livestock grazing on BLM lands is authorized on an annual basis. The established preference limit for grazing on BLM lands within the planning area is 410,814 Animal Unit Months (AUMs). This preference is the maximum number of AUMs that could be offered annually under ideal forage conditions. A number of factors including drought, wildland fire, transfer of grazing permits, financial limitations on operators, and implementation of grazing management to improve range conditions are known to make range conditions less than ideal. In order to achieve and maintain rangeland health standards, stipulations on the season and level of use have been set forth in the permits and leases issued to public land ranchers. AUMs authorized under a term grazing permit or lease are referred to as “active” while “billed” AUMs better reflects the amount of forage which ranchers actually use each year. Typically billed AUMs are less than active AUMs. In 2012 the BLM reported to have 408,282 active AUMs within the HiLine District although there were only 377,218 billed AUMs that year. Billed AUMs can change each year, between 2008 and 2012, the HiLine District billed an average of 371,975 AUMs (Table 3.12). Based on livestock inventories taken by National Agricultural Statistics Service (NASS), the BLM provides less than one-tenth of the forage needed to support the livestock produced within the planning area. . Data on the number of farms and livestock inventories by county are presented in Table 3.13.

<b>Table 3.12 Average Annual Authorized Livestock Grazing Use Billed AUMs 2008 - 2012</b>				
	<i>Cattle</i>	<i>Bison</i>	<i>Horses</i>	<i>Sheep</i>
5-Year Average	370,101	1,033	686	155

Source: Range Administration System, 2008 – 2012

**Table 3.13  
Livestock Operations by County**

<i>County/Area</i>	<i>Number of Farms*</i>	<i>Cattle and Calves Inventory**</i>	<i>Sheep and Lambs Inventory**</i>	<i>Total Annual AUMs of Feed Needed***</i>
8-County Planning Area	5,046	393,000	9,800	4,739,520
Blaine	665	86,000	0	1,032,000
Chouteau	849	48,000	600	577,440
Glacier	625	49,500	600	595,440
Hill	854	26,000	900	314,160
Liberty	299	15,000	0	180,000
Phillips	556	88,000	4,300	1,066,320
Toole	428	16,500	1,700	202,080
Valley	770	64,000	1,700	772,080

Source: USDA National Agricultural Statistics Service (NASS) (USDA 2013b)

\* 2007 Census of Agriculture, Dec. 31 inventory

\*\* January 1, 2013 Agricultural Survey, Quick Stats

\*\*\* Total Annual AUMs of Feed Needed = ([cattle and calves inventory] + [sheep and lamb inventory/5] x 12 months). Assumes typical livestock operation where all calves would be weaned by December 31 and next calf crop would be born in late winter-spring.

About 550 operators have livestock grazing permits or leases on BLM lands in the HiLine District. It is common for an individual/ operation to hold more than one permit or lease. About 10% of the farms/ranches in the planning area hold BLM grazing permits/leases.

Cattle are the most prevalent class of livestock, although bison, sheep, and horses also graze some BLM land in the planning area. Livestock operations are primarily cow/calf operations. Most calves are born in late winter through spring on private lands. Cattle are turned out to graze as cow/calf pairs. Calves have historically been weaned in the fall and most leave the region to be grown out and/or fed in other parts of the U.S. About 68% of the cattle and 90% of the sheep are marketed (2007 Census of Agriculture). At weaning, most cows are taken to winter pasture where they remain until they calve the following year.

Under the assumption that all permittee and lease holders are located within this planning area, roughly 39% of the 5,046 farms/ranches raise livestock and the BLM provides nearly 8% of the total forage requirements for the livestock inventory within the planning area. By assuming a direct relationship between the percent of farms that produce livestock and the percent of farm-related employment that is associated with livestock production, it is estimated that BLM livestock grazing contributes about 451 direct and about 231 total jobs and approximately \$9.2 million in labor income to the local economy (IMPLAN 2012). In this context, employment is defined as the average annual employment, including all full-time, part-time, and temporary positions supported by forage administered by the HiLine District. Thus, 1 job lasting 12 months = 2 jobs lasting 6 months each = 3 jobs lasting 4 months while labor income is the sum of employee compensation and proprietor (owner) income.

The amount of BLM grazing land and the dependency of local livestock operators varies among the counties. Phillips and Valley Counties offer the most grazing land and the highest dependency on BLM land for livestock grazing. Chouteau, Glacier, Hill, Liberty, and Toole Counties offer the least amount of BLM grazing as well as the smallest dependency on the BLM for livestock forage needs. Livestock grazing on BLM land involves livestock operators who have Section 3 grazing permits (grazing on public lands within grazing districts, BLM Manual 1373.12) and Section 15 grazing leases (grazing on public lands outside of grazing districts). On public domain lands, 50% of revenues from Section 15 grazing fees on public domain lands are distributed to the state and counties; 12.5% of grazing fees from Section 3 permits are distributed to the state and counties. On lands acquired under the Bankhead-Jones Land Utilization Act, 25% of revenues from both Section 3 and Section 15 lands are distributed to the counties. Within the planning area, 65% of the BLM surface land base is public domain land and 35% is LU acquired land. Average annual revenues collected from grazing receipts (2008-2012) by the federal government were \$502,166; of this, approximately \$89,581 was distributed to counties.

The grazing fee the BLM charges is established by formula and is generally lower than fees charged by other federal agencies, states, and private ranchers who set fees to obtain the market value of forage. The formula used to calculate the BLM grazing fee incorporates the ranchers' ability to pay and does not recover the agency's expenditures or capture the fair market value of forage. Livestock operations in the planning area often involve large areas of land, and ranchers depend on a mix of private and federal lands to graze cattle seasonally. None of the livestock operations are wholly dependent on forage coming from public lands. To qualify for a grazing permit/lease on public land an operator must have land and the capability to accommodate their livestock for a specified period of time on private land owned or controlled (base property) apart from the BLM land (43 CFR 4110). The common qualification standard for the region is that the operator needs to accommodate livestock for four months on their base property to qualify to graze the same amount of livestock for eight months on public lands. Therefore, an individual operator cannot be dependent on more than 68% of their forage need coming from BLM land. Within the planning area, it is rare for dependence on BLM land forage to exceed 50% and many operations depend on BLM land forage for less than 20% of their total forage needs. However, many of the BLM livestock operations depend heavily on forage from BLM lands during a specific season; i.e., many operators graze BLM land in the spring through fall for five to seven months and winter their livestock on base property.

Although BLM forage comprises a relatively small share of the total AUMs in the planning area, this forage may be particularly valuable to livestock producers because the grazing fees are very favorable and it is often available during a critical period of the year when forage on private hay fields and meadows is being grown to provide forage for the winter. The BLM grazing fees (\$1.35/AUM in Fiscal Year (FY) 2012) are considerably lower than the statewide average of \$20.50 per AUM (Montana Agricultural Statistics, National Agricultural Statistics Service, 2014). If the BLM were to charge a market-based fee, the price would likely not equal private or state fees because of factors such as range productivity services provided by the landowner and access to the land (GAO, September 2005).

Access to BLM grazing is important to area livestock producers even though additional management costs are usually incurred to use these lands. According to a 2005 GAO report on livestock grazing, "fees charged by private ranchers and state land agencies are higher than the BLM and Forest Service fees because, generally, ranchers and state agencies seek to generate grazing revenues by charging a price that represents market value for that land and/or the services provided."

## **Mineral Development and Production**

Mining sector activities include gold mining, oil production, natural gas production, and bentonite mining. Gold mining occurred in the Little Rocky Mountains for more than 100 years and once provided a major economic stimulus to the region and employed hundreds of people. However, since the closure of the Zortman/Landusky Mine in 1998, the few remaining jobs related to gold mining have been associated with reclamation and water management and treatment. The combined site maintenance and water treatment costs will run an estimated \$2.5 million per year. A few people were employed in bentonite mining south of Malta until the 1980s when that mine closed.

Currently, jobs in oil and natural gas development and production account for nearly all of the direct employment reported in the mining sector today. Local oil and gas production also supports jobs in the natural gas pipeline transmission industry. Local contractors, as well as regional firms primarily from the Williston Basin in North Dakota provide contract services to local oil and gas fields.

### **Nature of the Oil and Gas Industry in the Planning Area**

In the last five years between 2008 and 2012, oil and gas drilling and production occurred in all eight counties. During this period, an annual average of 20.4 oil wells, 70.2 gas wells, and 14 dry holes were drilled in these producing counties (MBOGC 2013). In FY 2010, about 69,300 bbl of oil and 15,151,500 MCF of natural gas were produced from federal minerals. Statewide average wellhead prices in 2010 were \$70.24 per bbl. for crude oil and \$3.64 per MCF for natural gas (IPAA 2012). The 2010 statewide average cost of drilling and equipping each well was \$8,188,070 for oil wells, \$33,953 for gas wells, and \$141,732 for dry holes (IPAA 2012).

## **Oil and Gas Leases**

As of November 21, 2013, more than 671,546 acres of federal minerals were leased for oil and gas within the planning area. Annual lease rental is paid on 146,679 acres that are not held by production. Total lease and rental revenues paid to the federal government were estimated to be \$256,689. Lease rents were not paid on 524,867 acres that were held by production. Instead, royalties are paid on oil and gas production from these leases.

Competitive federal oil and gas leases generate a one-time lease “bonus” bid as well as annual rents. The minimum lease bonus bid is \$2.00 per acre. If no bonus bids are received, the parcels are later made available as noncompetitive leases where no bonus bids are collected. Over the past 10 years, bonus bids for all acres leased in the planning area averaged \$10.35 per acre. Lease rental is \$1.50 per acre per year for the first five years and \$2.00 per acre per year thereafter. Typically, oil and gas leases expire after 10 years unless held by production. Annual lease rentals continue until one or more wells are drilled that result in production and associated royalties. A portion of the revenues collected by the federal government is distributed to the state and counties. The amount that is distributed is determined by the federal authority under which the federal minerals are being managed. The leased acres changes daily as leases expire and other parcels are leased. Generally, within the planning area, public domain federal minerals account for about three-fourths of the acres leased; Bankhead-Jones lands account for about one-fourth of the acres leased; and the other authorities for acquired minerals account for less than 1% of federal leased acres.

Forty-nine percent of these federal leasing revenues from public domain minerals are distributed to the state and the state distributes 25% back to the counties (Title 17-3-240, Montana Code Annotated). Twenty-five percent of the federal leasing revenues are distributed to the counties on federal minerals administered under the Bankhead-Jones Act. Total annual federal lease and rental revenue is approximately \$256,689. Of this, an estimated \$113,456 was disbursed to the state and counties.

## **Production**

The amounts of federal minerals and the contributions of that production to local economies vary among the counties. Blaine and Toole Counties produce the most oil and Phillips and Blaine Counties produce the most natural gas from federal minerals. Across the 8-county planning area, federal minerals account for approximately 85% of total oil production. Nearly 90% of the natural gas produced in the 8-county planning area comes from federal minerals.

Federal oil and gas production in Montana is subject to production taxes or royalties. These federal oil and gas royalties generally equal 12.5% of the value of production (43 CFR 3103.3.1). Forty-nine percent of these royalties from minerals produced from public domain lands are distributed to the state. In Montana, 25% of the royalty revenues that the state receives are redistributed to the counties of production (Title 17-3-240, MCA). Twenty-five percent of royalties associated with mineral production from Bankhead-Jones lands are distributed to counties of production. Federal royalty revenues within the planning area were calculated to be \$12.2 million, of which an estimated \$5.4 million were distributed to the state and counties.

## **Local Economic Contribution**

Aggregated mining sectors (industry sectors 20-30) supported approximately 1,279 total jobs and \$51.5 million in labor income within the planning area in 2012 (IMPLAN 2012). Almost all of the jobs and labor income are associated with oil and gas production. Most of the oil and gas service companies associated with oil and gas operations in the planning area are located within the planning area. The amounts of federal minerals and the dependency of local economies on that production vary among the counties.

Counties and school districts receive revenues from oil and natural gas leasing and production taxes and ad valorem property taxes on certain field and pipeline facilities. Detailed breakdowns of taxable values associated with the oil and natural gas industry for analysis of property tax assessments are not available. However, revenues associated with mineral exploration, development, and production of federal minerals allow higher levels of government and/or school district services than would be available without these revenues. In other cases these revenues reduce the tax burden on residential, commercial and industrial property taxpayers within the county. These benefits can be offset by higher service demand associated with oil and gas activities; however, road maintenance appears to be the major function that requires a higher level of service as a result of oil and gas activities.

Drilling is usually done by a contractor who transports a rig and crew into the area and drills several wells. Drilling occurs continuously until a well is completed. The rig then moves to its next assignment. Drilling within an area has been done by only one or two companies at a time. The temporary workforce typically includes about 15 drilling-related workers, about 4 workers to cement the well, and a three-person logging crew. A second crew of about 14 will complete the wells drilled during one season. A third crew of 10-15 workers installs gathering lines for all wells drilled within a field during one drilling season. Drilling, completion, gathering system/field infrastructure construction crews are generally non-local and stay in nearby towns on a temporary basis. Some crews hire a few local workers, but non-locals require temporary lodging in motels or recreational vehicles for the duration of their stay. Additional jobs are generated in the lodging, food service, entertainment, and automotive services sectors of the local economies. Field operations are typically performed by a few local employees and local contractors in the oil and gas service and construction industries.

The proximity of oil and gas wells and related facilities can influence nearby residential property sales, especially those on split estate land. Landowners who do not own mineral rights may be subject to federal mineral development on their land. Usually, these landowners enter into a surface use agreement and receive compensation, i.e. income, for the use of their land. Estimates of how individual properties are affected by nearby oil and gas development vary from case to case depending on specific location and the exact character and features of a property. Based on research in Colorado, BBC Research and Consulting reported in “Measuring the Impact of Coalbed Methane Wells on Property Values” that surface property owners perceive coalbed methane (CBM) activity “as having an adverse, if localized, effect on property values within view or earshot of CBM facilities.” In the study, interviewees said they “believe a property is most affected in the event that a well is located directly on it, although the intensity of effect may vary with the size of the property and the opportunities available to maintain separation between the well and the residence or other improvement.” BBC Research conducted Hedonic Pricing Analysis that included 754 properties and concluded that the location of a well on a property at the time of a residential sale reduced the net value of the residential property by 22%. However, the study found that the impact of a well within 550 feet of a property (but not on the property) may be positive if one takes into account spacing orders and setback requirements. The study concluded that this positive effect “is likely attributable to a belief that the property in question would not be drilled because a well had already been drilled in close proximity.” GIS analysis indicates there are about 500 residential structures within the planning area on lands with federal minerals that have high or moderate potential for oil and gas development.

Other economic activity related to mining includes sand, gravel, and stone mining and quarrying, and support activities for these other mining activities. The only other mineral production within the planning area is sand and gravel production, with 37 mineral material sites (sand and gravel) spread across the planning area. Total average annual production is about 26,000 cubic yards of dry gravel (38,480 short tons). Royalty rates along the HiLine average about \$1.00 per cubic yard. Annual mineral material royalties from sales of federal mineral materials average about \$26,000. None of these royalties go to state or local governments. However, the BLM does make sand and gravel available to county and local governments through free use permits. The commodity price for sand and gravel sold for commercial purposes averaged \$7.43 per short ton in 2011 (USGS Minerals Yearbook, Sand and Gravel 2011).

## Recreation Use

Outdoor recreation and access to public lands have been attributed with attracting and sustaining families and businesses, creating healthy communities and fostering a high quality of life. It is estimated that more than three out of every four Americans participate in active outdoor recreation each year and more than 140 million Americans make outdoor recreation a priority in their daily lives (Outdoor Industry Association 2012). These recreationists spend money on gear, vehicles, trips, and travel-related expenses which support jobs and income, and generate tax revenues in local communities. On annual average, the outdoor recreation and tourism industry is valued at more than \$5.8 billion, supporting approximately 64,000 jobs and generating nearly \$403 million in tax revenue across Montana (Outdoor Industry Association 2012).

Undeveloped lands across the state provide local residents, out-of-state visitors, and international travelers with high quality outdoor recreation opportunities. While outdoor recreation by non-local recreationists is responsible for injecting millions of new revenue into the state’s economy each year, access to outdoor recreation opportunities close-to-home adds to the quality of life enjoyed by local residents and increases the attractiveness of Montana as a place to live and work. BLM lands provide a wide array of recreational opportunities which are enjoyed by local and non-local residents. The large expanse of undeveloped lands and unique opportunities on those lands attracts recreational visitors who participate in activities such as hiking, mountain biking, camping, ATV riding, four wheel driving, hunting, and wildlife viewing. On their way to recreate on BLM lands, and once they arrive, these visitors spend money on goods and

services they would spend elsewhere if these opportunities did not exist. In this manner recreational experiences supported by BLM lands contribute to the local economy by attracting and maintaining local outdoor recreation related spending within the planning area.

The economic influence of recreation use on BLM lands is related to local expenditures for goods and services such as gasoline, lodging, meals, and supplies. To understand the local economic influence of recreation use, it is important to understand that local expenditures vary depending on the type of activity, whether the recreation use is from local residents or non-local residents, and whether the activity involves overnight stays. Local expenditures related to recreation use support local employment and labor income (standard economic indicators). Generally, employment related to recreation and tourism tends to be seasonal and relatively low paid, with a high portion of the labor force self-employed. The recreation opportunities available in the planning area play an important role in the quality of life of many local residents, and also attract visitors from elsewhere in the state and region. The BLM lands in the planning area received an estimated 113,000 recreation visits in FY 2010 (BLM, RMIS 2011). Major recreation activities on BLM lands are hunting (33%), fishing (12%), off-highway vehicle (OHV) use (11%), wildlife viewing (8%), and picnicking (8%). Recreation and tourism is not classified or measured as a standard industrial category. Components of recreation and tourism activities are instead captured in other industrial sectors, primarily the retail sales and services sectors.

It is assumed that day use and overnight use in the planning area would be similar to that found in the Dakota Prairie National Grasslands, where an estimated 61% is day use; the vast majority of which is local day use. Average spending for day and overnight use on the Dakota Prairie Grasslands is assumed to be representative of daily recreation expenditures on BLM lands within the planning area where average spending per recreation visit for day trips was \$34 for locals and \$65 for non-locals and \$178 for locals and \$365 for non-local overnight visits (Stynes and White 2005). These expenditures would be split among the following economic sectors: lodging, restaurants, groceries, gas/oil, other transportation, activities, admissions/fees, and souvenirs.

Government revenues received from the recreation program are associated with recreation use permits. In FY 2010, \$8,155 was collected in campground fees and Special Recreation Use Permits. None of these revenues from the HiLine District are distributed to the state or counties. The BLM's recreation fee guidance (IM 2005-063) identifies the goal of using fee revenues at sites of collection or within the field office of collection.

## **Timber Management**

Timber harvest from BLM lands within the planning area is relatively small. The Allowable Sale Quantity (ASQ) from BLM lands within the planning area is 350 mbf per year. However, the actual timber harvest within the planning area is relatively small, with the 10-year average harvest only about 67 thousand board feet (67 MBF or 152 CC) per year. Christmas trees are also sold. The annual average number of Christmas trees sold over a 10-year period was 76. About 5% of the sawtimber that is harvested comes from salvage sales. Annual timber revenues average \$1,190 for all products and \$553 for salvage sales. Four percent of the revenue from timber sales on public domain goes to the state, 76% to the Bureau of Reclamation, and 20% to the U.S. Treasury. Distribution of revenue from salvage sales is different, i.e., 4% of revenue from timber sales on public domain goes to the state, and 96% goes to the BLM.

## **Lands and Realty Actions**

In FY 2013 the BLM issued or renewed 65 rights-of-way (ROWs) in the Glasgow, Havre, and Malta Field Offices within the HiLine District. These right-of-ways are leased for infrastructure in support of economic activities within the planning area. ROW's generally include powerlines, telecommunication lines, roads/highways, water facilities, and may also include roads and pipelines associated with oil and gas development. BLM leasing revenues from right-of-ways generated \$76,582 for the federal government in FY 2013 (Table 3.14). If the right-of-way is issued under FLPMA authority, none of the rents are shared with the state or local governments. If the right-of-way is issued under the Mineral Leasing Act Authority, 49% of rents are shared with the state, which distributes 25% of the revenue it receives to the appropriate counties. If rights-of-way rents are collected from Bankhead Jones (LU) lands, 25% if the revenue is paid to the county.

<i>Field Office</i>	<i>FLPMA Authority</i>	<i>MLA Authority</i>	<i>Total Revenue</i>
Glasgow	\$117	--	\$117
Havre	\$53,346	\$2,331	\$55,677
Malta	\$2,547	\$18,241	\$20,788
Total	\$56,010	\$20,573	\$76,582

Source: Lands and Realty Database (LR2000), December 10, 2012

Currently, no rights-of-way exist for wind energy on BLM lands in the planning area. However, it is anticipated that some development will occur on public lands over the life of the plan. Analysis of anticipated impacts is included in Chapter 4.

## **Direct BLM Contributions to Area Economic Activity**

### **BLM Labor and Operations**

BLM operations and management in the area make a direct contribution to area economic activity by employing people who reside in the area and by expending dollars on other non-personnel needs. Management of BLM lands and resources is carried out by professional and administrative employees who are stationed in BLM offices in Havre, Malta, and Glasgow. In December 2010, the three offices combined had positions for 44 permanent employees and 7 non-permanent employees. The BLM also has additional employees located in the Great Falls Field Office (Great Falls), Lewistown Field Office (Lewistown), and the Montana State Office (Billings) who worked on minerals and resource management in the HiLine District. In FY 2012 BLM spent \$4.146 million for labor and \$3.645 million on operations within the planning area. The three communities that have the largest BLM labor income are Malta, Havre, and Glasgow. BLM operations expenditures include administrative costs as well as contracts for various forms of ecosystem restoration to protect or restore the lands managed by the BLM.

### **Ecosystem Restoration**

Some land uses/activities such as weed treatments and hazardous fuels treatments are paid for by the BLM and are grouped together as ecosystem restoration. Major activities associated with ecosystem restoration include treatment of invasive species and pest management, wildland fire suppression, hazardous fuels treatments, and mine reclamation. Annual ecosystem restoration includes one major mine reclamation and water treatment project (\$2.479 million/year), mechanical treatment/pre-commercial thinning of 237 acres of forest/woodlands, prescribed burning of about 43 acres of forested areas, mechanical treatments and prescribed burning of 355 acres of grass/shrubs and treating 1,280 acres of invasive species. Mine reclamation, water treatment, 90% of pre-commercial thinning, and 63% of invasive species treatments are contracted out or paid for through cooperative agreements. Annual timber harvest paid for by the BLM but performed by private businesses for hazardous fuels treatments and timber sales would continue to produce about 152 CCF of sawtimber. With the exception of the Zortman/Landusky mine reclamation, these restoration activities are conducted using appropriated funds from the district's annual budget. Although the HiLine District provides some funding for the reclamation and water treatment projects associated with the Zortman and Landusky Mines, economic stimuli money from the Reinvestment Act of 2009 accounts for the majority of project funding. These funds are managed by MDEQ through their contract with Spectrum Engineering, Inc. in Billings, Montana.

*Invasive Species:* Economic effects of invasive species and their treatments are related to their influence on range productivity, wildfire risk, and attractiveness for recreation, and ultimately, on how these impacts affect local employment, income, and government revenues. Direct and indirect impacts from treatments of invasive species vary based on the species being treated and the type of treatment used. Table 3.15 identifies the average BLM per-acre cost of weed treatments and Table 3.16 identifies the projected annual average BLM acres treated. About one-third of the treatments are done by the BLM and two-thirds are done through agreements or contracts.

	<i>Glasgow Field Office</i>	<i>Malta Field Office</i>	<i>Havre Field Office</i>	<i>Planning Area Total</i>
Biological – Non-Classical	NA	NA	\$23	\$23
Biological – Classical*	\$50	NA	\$20	\$30
Chemical – Ground	\$195	\$20	\$221	\$201
Chemical – Air	\$200	\$187	\$204	\$202
Other Treatments	NA	NA	\$525	\$531
Average All Treatments	\$148	\$248	\$199	\$198

\* Weighted average by acre.

	<i>Glasgow Field Office</i>	<i>Malta Field Office</i>	<i>Havre Field Office</i>	<i>Planning Area Total</i>
Biological – Non Classical	0	0	110	110
Biological – Classical*	50	20	20	90
Chemical – Ground	85	356	254	695
Chemical – Air	285	0	90	375
Other Treatments	0	4	5	9
Total	420	380	479	1,279

\* Classical Biological Controls represents only releases made in any given year.

*Fire Suppression and Fuels Treatments:* The cost of wildfire suppression within the planning area depends on the number and size of fires. Most wildfires are controlled in the initial attack, when they are relatively small. However, weather conditions, terrain, vegetation, and proximity to populated areas all contribute to the cost of fire suppression. Restoration/fuel reduction efforts in Montana reduce fire hazard, improve ecological conditions of forested areas, and result in economic benefits that exceed the costs of reducing hazardous fuels (Keegan, et al. 2002). Between 2001 and 2008, BLM fuel treatment costs within the planning area averaged \$182 per acre for pre-commercial thinning of forested areas, \$43 per acre for prescribed burning of forested areas, and \$355 acre for mechanical treatments and prescribed burning of grass and shrublands.

**Total BLM Economic Contribution**

*Revenue Disbursement:* BLM land management activities and land/mineral uses that generated revenue to counties are displayed in Table 3.17. A large source of these payments was payment in lieu of taxes (PILT) and mineral payments. PILT payments are made to counties to compensate for federal lands that are exempt from local property taxes. Payment amounts are based on a complex formula that considers, among other things, revenue sharing from the previous year, county population, and acreage of a county in federal ownership. Another large source of revenue to counties within the planning area is oil and gas lease bonus, rents, and royalty payments. These revenues are influenced by leasing bonus bids, the well head price paid for oil and natural gas, and levels of production from federal minerals.

<i>County/Area</i>	<i>BLM Portion of 2013 PILT Payments<sup>1</sup></i>	<i>Grazing Fees<sup>2</sup></i>	<i>Average Annual Oil and Gas Leasing Bonus, Rents, Royalty Payments</i>
8-County Planning Area	\$2,301,359	\$89,523	\$1,850,029

Sources:

<sup>1</sup> USDI FY 2013 Payments In Lieu of Taxes.

<sup>2</sup> Based on Average annual authorized Use 2008-2013 from BLM Rangeland Administration System (RAS).

*Employment and Income:* BLM-related employment and income by major program area are displayed in Table 3.18.

<i>Resource/Program Area</i>	<i>Resource-Related Jobs</i>	<i>Resource-Related Income (\$1,000)</i>
Grazing	683	9,368
Minerals	616	27,089
Recreation Use	55	1,364
BLM Expenditures	100	6,252
Payments to States/Counties	67	2,708
Externally Funded Restoration Activities	20	851
Total Resource Management	1,541	47,632
BLM as a Percent of Total Planning Area Economy	4.0%	3.7%

Source: IMPLAN, 2012

Activities occurring on or associated with BLM land and mineral resource uses supported an estimated average annual 1,541 jobs and \$47.6 million in labor income within the planning area (FEAST/IMPLAN 2012).

## Fire Management and Ecology

Most, if not all of the ecological systems in the planning area have adapted to fire and other disturbances and are maintained by those disturbances. Vegetation management and land uses in the past century have altered many plant communities and fuel loadings. Because of these altered conditions, there is potential for future fires to become larger and/or higher severity, especially in conifer fuel types. Nationally, acres burned per year have generally increased since 1960 (NIFC 2012). In addition, the introduction of non-native invasive plant species has increased the potential for negative impacts after fire, especially where annual grasses such as cheatgrass have invaded. Alternatively, the potential for abnormally low fire behavior has been created in areas where coverage of clubmoss or bare ground has increased; consequently, the plant community will tend to persist in the altered condition.

In the past decade, and especially after the 2000 fire season when the National Fire Plan was developed, the BLM and other agencies increased vegetation treatments such as thinning and prescribed burning to reduce hazardous fuels in developed areas and change plant community composition and structure for improved health and resiliency after fire.

### Fire Management

The BLM fire and fuels organization is a centralized zone operation that includes the HiLine District and the Central Montana District Offices, and the Lewistown Interagency Fire Dispatch Office. The BLM works in an interagency environment with rural fire departments, tribes and other federal and state fire agencies. The closest available fire suppression resources respond to a fire for initial attack regardless of land ownership. The BLM has entered into Memoranda of Understanding (MOUs) with Blaine, Phillips and Valley Counties, and an agreement with Hill County which outline initial attack responsibilities.

Fires in the planning area that occur within the rural intermix or Wildland Urban Interface (WUI) are always fully suppressed because of the high values associated with mixed ownership which may include croplands, rangelands, and structures. Fire management has included the full range of suppression options from full suppression to managing fire for beneficial effects.

The planning area is divided into Fire Management Units (FMUs). FMUs are managed in accordance to planning objectives and constraints, vegetation, fuel types, wildland urban interface areas, and other characteristics. The planning area includes seven FMUs: Sweet Grass Hills, Havre Prairie Potholes, Malta Prairie Potholes, Bears Paw, Little Rockies, Malta Breaks, and Sun Prairie.

Each FMU has been evaluated and assigned a fire management category. These categories range from Category A where fire (including prescribed fire) is not desired at all, to Category D where fire is desired and there are no constraints on its use. Most of the planning area is Category B, where fire is a useful management tool, but unplanned ignitions are likely to cause negative impacts because of intermixed private lands and rural structures. The Missouri Breaks area is Category C, where fire is desired but fuels buildup and intermixed private lands create constraints to the use of wildfire for resource benefit. The planning area has no lands assigned to Categories A or D. Appendix D has more information about fire management categories, and Map 2.1 in Chapter 2 (Alternative A) shows the FMUs and areas covered by Categories B and C.

## Prescribed Fire Treatments

The BLM has used prescribed fire on 4,645 acres within the planning area from 2001 through 2012. Of those acres, 3,236 were in grassland/shrubland areas, and 1,409 acres were in forested areas. Fire treatments in forested areas have mostly been used to burn slash residues in hazardous fuels reduction projects near the towns of Zortman and Landusky. More recent projects are focusing on forest and upland health, and restoration of fire regimes; understanding that healthy forests have appropriate stand densities and fuel loadings. Mechanical treatments are addressed in the Forests and Woodlands section under Forest Treatments.

Prescribed fire in forested settings is most commonly implemented during the late winter and early spring months when soil, duff, and dead wood fuel moistures are at their highest of the year. This allows low to moderate severity fire effects with minimal mortality in the forest canopy. This is especially important in high value areas such as mechanically treated sites. The cost of implementation in late winter or early spring is usually lower than other times of year because adjacent fuels are less receptive to ignition or high rates of fire spread, so fewer holding resources (e.g., engines, fire personnel) may be necessary as compared to fall burning. No matter the time of year, pre-burn preparations in forested settings usually include surface-disturbing activities such as hand lines, but in late winter or early spring control lines can be narrower or unnecessary where natural barriers like game trails are adequate.

In grassland settings as compared to forested settings, prescribed fire can be implemented more reasonably during summer and fall because fuels are lighter and burn quickly, and flame lengths are generally shorter than in forested settings. In some years, summer and fall fire restrictions and non-availability of prescribed fire personnel can constrain summer and fall prescribed fire implementation.

## Wildfire Occurrence

Fire occurrence in the planning area generally extends from March or April through October, with the summer fire season occurring from mid-June through early September. Many spring or fall wildfires are human caused from equipment or debris burning, whereas most summer-season fires are started from lightning strikes that occur during thunderstorms in the summer months. Most fires remain small because of initial attack suppression efforts, or because of precipitation or vegetation greenness. Fires that grow large usually result from a combination of dry lightning, high winds, cured vegetation, and/or fuel buildup. Drought conditions can exacerbate these conditions or contribute to early or extended fire seasons. Although uncertainty remains about the effects of climate change on fire occurrence, size and severity, it seems accurate to assume warmer and dryer conditions in the planning area would likely create longer fire seasons.

Table 3.19 shows BLM-reported fires in the planning area between 1980 and 2012. Data are summarized from fires reported to the National Interagency Fire Center (NIFC) database. Reported fires include those where BLM provides assistance to other agencies or rural fire departments as well as fires on BLM lands where BLM receives assistance from other agencies or rural fire departments. About 78% of the fires were naturally ignited from lightning, and about 22% were human-caused by equipment, vehicles, powerlines, or unknown sources. This fire history data generally does not include tribal, state, private, or other federal agency fires, unless the BLM assisted with those fires. Rural volunteer fire departments successfully and independently suppress a very large, but unknown number of fires every year.

Total reporting years	33	
Reported fires	424	
Total action fires	355	(minus false alarms)
Maximum fires in a year	27	in 1988 and 2006
Average fires/year	12	
Total acres	144,149	acres
Average acres/year	4,368	acres
Maximum fire size	13,466	acres in October 2005
Average fire size	340	acres
Maximum yearly acres	25,230	acres in 2012

Source: NIFC database.

### Historic and Pre-Settlement Human Fire

Diaries and oral histories from early explorers, Native Americans, and trappers have documented the deliberate and multipurpose use of fire by Native Americans, but the information is usually lacking in spatial and temporal scales (Baker 2002). The frequency and extent of fire use is argued to have shaped North America's plant communities (Pyne 1982; Williams 2000, 2004); however, it has also been suggested that this idea is over-emphasized (Barrett, Swetnam, and Baker 2005). The use of fire is documented for prairies to the east of the planning area (Lewis and Clark Journals) and in the forests to the west (Barrett 1980; Barrett and Arno 1982), but little or no local information exists for the planning area, and therefore, little opportunity to use the information to establish reference conditions.

### Fire Danger and Behavior

In early spring, fire occurrence on BLM lands is predominately in the grass/shrub fuel type and tends to occur between snowmelt and green-up, when fine fuels have dried and will carry fire. The average burning index is usually at its highest during this time of year (NWCG Pocket Card, CMZ BLM 2011), which can indicate higher flame lengths and associated difficulties in control efforts. The burning index is often used as a fire danger indicator in areas where fine fuels such as grass are the main carrier of fire. Spring precipitation and green-up reduce the burning index to the lowest values of the year, where acres burned in June are relatively low considering the number of fires. As herbaceous vegetation matures and fuels dry in summer, the burning index values steadily increase, and associated fire danger increases until early September. The data suggest the possibility to manage wildfires for resource benefit immediately before and during green-up.

Energy release component (ERC) is a cumulative measure for the fire season which provides a reflection of drought conditions, and is used as a fire danger indicator in forested settings. ERC represents the release of heat per unit area in a flame zone, and indicates potential fire intensity. Typically, maximum ERC values are reached in late August or early September (NWCG Pocket Card, CMZ BLM 2011), and decline only after significant precipitation events.

From mid-June through August, thunderstorms can occur almost daily and may or may not have precipitation associated with them. Under dry conditions, these storms can produce multiple fires per day with increased potential for escape from initial attack suppression efforts.

### Fire Ecology

Plant species in the planning area can be fire adapted in several ways, or by a combination of the following characteristics: physical attributes that resist burn damage; post-fire sprouting capabilities of roots and stems; or seedling establishment (Miller 1994).

Structurally, a tree such as ponderosa pine is fire resistant because it has thick bark (insulation) and few ladder fuels which could cause fire to move into the crown. Ponderosa pine is adapted to frequent fire that burns surface fuels and maintains an open understory. When fire is eliminated from this type of plant community, ladder fuels will increase

(such as thickets of pine and Douglas-fir seedlings) and will contribute to stand replacing crown fire and canopy mortality.

Plants with rhizomatous root systems, such as chokecherry, needle-leaf sedge, and western wheatgrass will re-sprout vigorously after fire, even after fairly severe burns. The depth of the root system ranges from shallow to deep, so some roots and buds are protected from all but the most severe burns. Plants with root crowns or basal buds, such as birch, serviceberry and currant will re-sprout after fire, but the roots can be more susceptible to heat damage than are rhizomatous roots. Many deciduous shrubs and herbaceous species are intolerant of partial or full shade and will become suppressed and decline in forest understories if fire is eliminated from the plant community.

Some species such as lodgepole pine are adapted to fire by creating post-fire conditions which enhance seedling establishment. Lodgepole pine cones are often serotinous, which means they must be heated to open and release the seeds. In addition, the seedlings require a sunny, mineral seedbed to germinate and grow successfully. In general, lodgepole pine forests are adapted to infrequent, stand-replacing fire, which creates ideal conditions for seed germination and seedling establishment. In the higher elevations of the island mountain ranges, lodgepole pine generally reestablishes in dense “dog-hair” stands, and can expand into Douglas-fir/ponderosa pine stands (Pfister, et al. 1977) that have been killed by crown fire. Casual observations in the Little Rocky Mountains suggest that lodgepole pine has replaced ponderosa pine in many areas, particularly after the 1936 fire. Because lodgepole pine forests are adapted to stand-replacing fire, they can contribute to large fire size.

Wyoming big sagebrush is usually killed by fire, and must reestablish by seed. In all but the most extreme conditions, fires burn in a mosaic pattern, or a narrow, wind-driven pattern. The patterns leave remnant patches near or within the burn area, and those plants supply seed for reestablishment (Howard 1999). Conifers such as juniper, pine, and Douglas-fir can encroach into sagebrush/grasslands and create conditions that may contribute to large fire size and higher severity burns. Likewise, encroachment of annual grasses can contribute to large, stand-replacement fire in sagebrush communities.

## Fire Regimes

As general examples, some plant communities require frequent low severity fire, while others require infrequent stand-replacing fire. Most plant communities require fire frequencies and burn severities somewhere between these two descriptions. Plant community or ecosystem adaptations to fire, with respect to frequency and severity, are referred to as fire regimes.

When an ecological system or plant community does not burn at adapted intervals or severities, changes occur to the system which can affect species composition, vegetation characteristics, and fuel loading. These changes can further affect fire interval and burn severity, which further contribute to uncharacteristic changes in the plant community. These altered conditions within a plant community or system can be measured and classified according to the departure of that community relative to its natural or historic fire regime.

Fire Regime Condition Class (FRCC) has been developed as an interagency, standardized process to assess and monitor fire regimes and the condition of vegetation communities relative to their fire regime. The FRCC includes five fire regime groups (Hann, et al. 2008) as shown in Table 3.20. Three condition classes measure the departure of a plant community from its historic fire regime. Condition Class 1 is within the natural range, Condition Class 2 is moderately altered from the natural range, and Condition Class 3 is significantly altered from the natural range. Table 3.21 provides definitions of these classes (Hann, et al. 2008).

Within the planning area, condition classes and fire regimes have been analyzed at the project level and at a coarse-scale national level, but have not been assessed at the landscape level. In conjunction with other standard vegetation health assessments, FRCC assessments help establish reference conditions, identify current conditions, and perhaps direct attention to priority areas that would benefit from vegetation treatments such as fire. A national project called LANDFIRE has produced a mid-scale, spatial FRCC dataset for the nation. The data are currently available and will be used to provide a foundation within the planning area for assessing baseline conditions, and for monitoring vegetation treatment efforts. FRCC assessments will continue to be developed and monitored at the project level.

<i>Fire Regime Group</i>	<i>Frequency</i>	<i>Severity</i>	<i>Severity description</i>
I	0-35 years	Low / mixed	Generally low-severity fires replacing less than 25% of the dominant overstory vegetation; can include mixed-severity fires that replace up to 75% of the overstory.
II	0-35 years	Replacement	High-severity fires replacing greater than 75% of the dominant overstory vegetation.
III	35-200 years	Mixed / low	Generally mixed-severity; can also include low-severity fires
IV	35-200 years	Replacement	High-severity fires replacing greater than 75% of the dominant overstory vegetation.
V	200+ years	Replacement / any severity	Generally replacement-severity; can include any severity type in this frequency range.

Source: Hann, et al. 2008

<i>Condition Class</i>	<i>Description</i>
1	Less than 33% departure from the central tendency of the historical range of variation: Fire regimes are within the natural or historical range and risk of losing key ecosystem components is low. Vegetation attributes (composition and structure) are well intact and functioning.
2	33% to 66% departure: Fire regimes have been moderately altered. Risk of losing key ecosystem components is moderate. Fire frequencies may have departed by one or more return intervals (either increased or decreased). This departure may result in moderate changes in fire and vegetation attributes.
3	Greater than 66% departure: Fire regimes have been substantially altered. Risk of losing key ecosystem components is high. Fire frequencies may have departed by multiple return intervals. This may result in dramatic changes in fire size, fire intensity and severity, and landscape patterns. Vegetation attributes have been substantially altered.

Source: Hann, et al. 2008

## Emergency Stabilization and Rehabilitation

Rehabilitation is conducted on a case-by-case basis and may be necessary following fire suppression, wildland fire, and prescribed burns to address the following:

- Emergency stabilization and rehabilitation. Actions such as seeding, fencing, and temporary closures could be taken to stabilize or rehabilitate burned areas.
- Invasive Nonnative Plant Species (INPS). Burned areas and areas subject to fire suppression activities are susceptible to the establishment or expansion of INPS. Pre- and post-fire management is crucial for controlling nonnative plant species.

Appendix D provides more information about Emergency Stabilization and Rehabilitation.

## Fish

The BLM is responsible for managing fisheries habitat on BLM lands. Managing fish populations is the responsibility of state (MFWP) and federal wildlife management agencies. The U.S. Fish and Wildlife Service (USFWS) provides regulatory oversight for all species that are listed, proposed for listing, or are candidates for listing under the Endangered Species Act (ESA). For more information, see the Special Status Species section later in this chapter.

### Fish Species

The variety of fish species present in the planning area is high, with 76% of the total fish species common to Montana found in the planning area. A complete list of the 73 fish species (species, hybrids, and special populations) occurring in the planning area is located in Appendix N, Table N.1.

The aquatic resources in the planning area include fish, aquatic macro-invertebrates, and their habitats. These habitats consist of rivers and streams, springs, seeps, and lakes or reservoirs that provide year-round (perennial) or seasonal (intermittent) habitat for a variety of fish species or life stages, aquatic macro-invertebrates, and aquatic plant communities. Water quality is a key indicator of environmental conditions for fish and aquatic habitats. Other elements critical to aquatic habitat and suitable fish habitat, including riparian habitat, are sufficient water volume, suitable water temperature, and a limited presence of nonnative competitors. The BLM uses its surveys and those done by DEQ and MFWP to assess the abundance, distribution, and health of fish populations and aquatic habitat within the planning area.

Riparian vegetation is also an important factor in maintaining aquatic resource conditions, particularly in smaller rivers and streams. Riparian vegetation provides in-stream habitat for fish, adds structure to the banks, reduces erosion, moderates water temperatures, and is a source of organic nutrients for the system. Riparian vegetation also moderates flows by reducing runoff into streams and stores water for later release. As riparian habitats degrade, erosion and sedimentation increase, and streams widen and become shallower. Temperature fluctuations increase and oxygen content can reach critically low levels. These factors collectively reduce or degrade available fish habitat. A more thorough discussion of riparian vegetation can be found in the Vegetation – Riparian and Wetlands section.

Land use practices can directly or indirectly affect aquatic habitat and resource conditions. For example, logging and grazing activities may result in the direct loss or modification of riparian vegetation. These activities may also increase sediment delivery to the streams, which would affect water quality and substrate characteristics.

The linear characteristics of aquatic habitat and the wide dispersal and scattered parcel distribution of BLM lands in the planning area result in aquatic habitat for specific streams and rivers crossing land owned by different entities, making it difficult to describe specific habitat conditions relative to single land ownership. As a result, the current conditions of aquatic resources in the planning area are presented in terms of overall habitat conditions, stream types, and fish species distribution and diversity.

Of the 73 different species of fish found in the planning area (Appendix N, Table N.1), 46 are native, and 27 have been introduced new to the system over the years. Fisheries habitat on/in the Missouri River within the planning area has changed dramatically over the past 50-100 years with the advent of dams and subsequent flood control and the gradual reduction of cottonwoods and other deciduous trees. This is reflected in the high number of threatened and endangered and special status fish species (7 species) in the relatively short section of river. The planning area has a total of 3,231 miles of fish-bearing streams (MTNRIS 2007). A complete list of the fish-bearing streams is shown in Appendix N, Table N.2. Approximately 8% (243 miles) of these streams cross BLM lands.

Habitat conditions throughout the planning area vary both among and within water bodies. For example, the upper reaches of small streams may be intermittent, while the lower reaches may receive perennial flows, resulting in distinctly different habitat conditions even within the same stream.

Extensive information on aquatic habitat and fisheries resources is contained in the Montana Fisheries Information System (MFISH) at the MFWP website at <http://fwp.mt.gov/fishing/mFish/default.html>. MFISH is a database containing information on fish species distribution, supporting data for distribution, and stream level information for lakes and streams in Montana. The database is managed and maintained by the Information Management Bureau of the

Information Services Division of MFWP and is annually updated through interviews with MFWP, U.S. Forest Service, USFWS, BLM and tribal fisheries biologists, and supplemented with information provided in technical documents and reports.

The MFISH system ranks river and stream reaches according to their overall fisheries resource value. The resource value is determined by a complex point system, where the most points are assigned for important habitat for fishes of special concern (particularly important spawning habitat) and the least points are assigned for the occurrence of nonnative fish species. Additional consideration is given for social and economic values, such as higher points for a stream in an area with few streams. The rankings range from 1 to 5, representing respectively outstanding, high, substantial, moderate, and limited resource values. Within the planning area, the rankings generally correspond to the size of the river or stream, or the stream classification (see Appendix N, Table N.2). The only rivers in the planning area with a resource value of 1 (outstanding) are the Missouri and Marias rivers. Most of the other major drainages have resource values of 2 and 3, particularly in their lower reaches where perennial flows occur.

## Lakes and Reservoirs

The MFISH database lists 97 lakes, ponds, and reservoirs in the planning area, although numerous smaller lakes and ponds also occur in the area (Appendix N, Table N.3). An additional 69 fishing lakes, ponds, and reservoirs (for a total of 166) exist in the planning area. Of the 166 water bodies identified, 40 (24%) are managed for warm/cool water species, 74 (44%) for trout, 21 (13%) for trout and warm/cool water species, and 31 (19%) were winterkilled at the time of this writing. Many of these water bodies were constructed (man-made). Sixty-one of the above water bodies are managed by the BLM. Twenty-six of the BLM-managed reservoirs, however, have winter-kill problems caused by a lack of depth and/or siltation. The remaining 35 reservoirs provide a vital fishery for the planning area. Fish stocking is coordinated with MFWP. Habitat improvement on some of these reservoirs has occurred to improve winter survival (windmill aeration) and water quality (exclosure construction).

The largest lakes or reservoirs in the planning area are Fort Peck Lake, Tiber Reservoir, Fresno Reservoir, and Nelson Reservoir. Fort Peck Lake (249,349 acre surface area) is immediately adjacent to the planning area and is an important fishery to the planning area. These water bodies are primarily managed for warm or cool water fish species.

A greater variety of fish species is generally found in the more downstream reaches of larger drainages, with comparatively fewer species present in upstream reaches throughout the planning area. This variation is related primarily to water quantity, as many of the smaller streams and the upper reaches of larger streams are ephemeral (seasonal). In addition, MFWP has identified chronic (most years) or periodic (drought years) dewatering concerns for certain reaches of the planning area (MTNRIS 2005).

The greatest fish diversity (57 species) occurs in the Missouri River (due to Fort Peck Reservoir), including 28 native species (MTNRIS 2005). Of the other large rivers in the planning area, the Marias River has 26 native species (38 total), and the Milk River has 22 native species (32 total species). The other major rivers and streams in the area typically support 16 to 23 total species and 12 to 17 native species. Many of the same fish species are abundant or common in most of these drainages, although species diversity is typically greater in the lower reaches of these streams.

The most abundant game fish species in the planning area include channel catfish, smallmouth bass, northern pike, sauger, and walleye (MTNRIS 2007). Less abundant game species include species of the family Salmonidae (various trout species, salmon, whitefish, cisco, and chars), largemouth bass, mountain whitefish, black crappie, white crappie, paddlefish, shovelnose sturgeon, pallid sturgeon, burbot, and yellow perch. See Appendix N, Table N.4 for a complete list of game fish in the planning area.

The most dominant non-game species in the planning area are goldeye, common carp, sand shiner, fathead minnow, flathead chub, longnose dace, white sucker, and shorthead redhorse.

Cold water game fish in the planning area are dominated by four introduced species (rainbow, brown, brook, and lake trout [lake trout are primarily not native, except in the Waterton and Saint Mary Lakes]), although these fisheries are limited in this portion of the state. Cold water fisheries are maintained through hatchery planting programs primarily in the area's reservoirs, ponds, and lakes. Mountain streams in the Sweet Grass Hills and Little Rocky Mountains, and other prairie streams typically rely on natural fish reproduction.

Several unique warm water fish species also occur in the planning area, including paddlefish, burbot, and two species of sturgeon, although these species are found primarily in the mainstem river reaches with perennial flows.

The abundance and distribution of the various fish species in the area is influenced by the available habitat, their ability to adapt to changing habitat conditions, and the degree of fishing pressure. Many of the game fish are also supported to some degree by hatchery planting operations.

Fort Peck Lake, which runs along the southern border of the planning area but is outside the HiLine District, has the most diverse fish species (57 species); most are native to the Missouri River system. Sixteen species, mostly game fish, have been introduced to develop sportfishing opportunities, including two species of salmon (Chinook and kokanee). The reservoir's walleye fishery has been of particular interest to resident anglers, and in recent years has begun to attract nonresidents as well. The difference in species diversity reflects the size of the reservoir (habitat variability) and its depth. Deeper water bodies provide habitat during the winter, while shallow water bodies tend to freeze in winter. As a result, many of the small reservoirs in the planning area support limited numbers of species and smaller populations of fish.

Numerous other aquatic resources are also present in the area's water bodies. These resources often are important in the diets of various fish species, or they comprise part of the food web upon which fish ultimately depend. Such aquatic resources include macro- and micro-invertebrates, zooplankton, phytoplankton, periphyton (attached algae), snails, clams, and worms. Numerous taxa of aquatic insects whose distribution and abundance vary with geographic location, habitat type, and habitat condition, occur in planning area drainages. Immature and adult forms of stoneflies (*Plecoptera*), mayflies (*Ephemeroptera*), caddisflies (*Trichoptera*), and true flies (*Diptera*) are particularly important in the diets of juvenile and adult trout, whitefish, and other native and nonnative fish species. Aquatic vascular plants include ferns and flowering plants that grow submersed in water, float on the water surface, or have basal portions inundated with foliage and upper parts immersed. As with the fish resources, these other aquatic resources depend primarily on water quality and quantity conditions.

## Factors Affecting Aquatic Habitats

The principle natural factors that limit or affect aquatic resources in the planning area include drought, naturally erosive soils, dissolved oxygen levels in winter and summer, and water temperature.

The principal anthropogenic factors limiting or affecting aquatic resources in the planning area include excess siltation, stream dewatering, loss or degradation of riparian habitat, habitat fragmentation, roads, road drainage structures, livestock use, and past mining practices. Eleven stream diversions or diversion ditch rights-of-way are located on BLM surface. Most of these diversions are not screened to prevent fish mortality when the ditches are dewatered.

The introduction of nonnative species is also of primary concern, due to the effects of hybridization, predation, and competition. An additional factor affecting salmonids (particularly rainbow trout) includes the potential spread of whirling disease. Whirling disease is caused by the parasite *Myxobolus cerebralis*, and it has the potential to severely impact wild trout fisheries in Montana, resulting in serious loss of recreational activity and its associated economic benefits.

Current management actions in the planning area focus on maintaining or improving aquatic habitats for fisheries and providing fishing opportunities on selected BLM reservoirs and ponds. Management actions for fisheries habitats are often conducted through large-scale water and riparian management actions (see the Vegetation – Riparian and Wetland, and Water sections), and water quality in the planning area is expected to improve as effects of surface-disturbing activities on vegetation cover are reduced through implementation of best management practices in riparian areas. Spatial protective stipulations for surface-disturbing activities are currently applied to both riparian and aquatic habitats as well as to reservoirs and ponds to afford a level of protection from human disturbance and development activities.

The introduction of invasive, nonnative species is one of the leading threats to the ecological integrity of forests, grasslands, and waterways. Introduced intentionally or after escaping from cultivation, nonindigenous plants can colonize aquatic communities where they compete with and often displace native species. No nonindigenous invasive

aquatic plants are currently known from the planning area, but a number of species could potentially affect aquatic resources in the planning area (see the Noxious Weeds and Other Invasive Non-Native Species section).

Management challenges for fish and other aquatic species include minimizing impacts to aquatic habitats through the control of plant and animal invasive and non-native species, and protecting and improving habitats by minimizing activities that affect water quality and the hydrologic regime. Impacts specific to aquatic habitats in the planning area include increased road building (often associated with other surface-disturbing activities such as oil and gas exploration and extraction), reservoir construction, intentional and accidental introduction of non-native species, and from activities in the surrounding landscapes that result in increased sediment loads in aquatic habitats.

Potential aquatic habitat restoration/enhancement projects have been identified for streams in the Little Rocky Mountains, fisheries reservoirs, and prairie streams. These projects may include:

- large woody debris placement;
- riparian planting;
- exclosure fencing;
- riparian pastures;
- windmill aeration;
- water quality restoration projects;
- road drainage restoration;
- fish screens on diversion ditches;
- signing;
- erosion control;
- fishing reservoir construction; or
- Off-highway vehicle trail rehabilitation.

## Special Status Fish Species

Special status species are plants and animals that require particular management attention due to population or habitat concerns and are either:

- federally listed threatened and endangered species and designated critical habitats;
- federally proposed species and proposed critical habitats;
- federal candidate species;
- delisted species within the 5 years following delisting; or
- Montana BLM sensitive species.

The BLM accomplishes its threatened and endangered species management through coordination with the USFWS and MFWP. The BLM initiates Section 7 consultation with the USFWS before approving or implementing any action that may affect listed species or designated critical habitat. Streamlined consultation procedures detailed in the July 27, 1999 Memorandum of Agreement (MOA) and subsequent implementation guidance for Section 7 consultations are utilized to provide collaborative opportunities in the consultation process. The BLM has entered into an MOA with the USFWS to improve the efficiency and effectiveness of RMP-level Section 7 consultation processes under the ESA. Through this MOA, the BLM agrees to promote the conservation of candidate, proposed, and listed species and to informally and formally consult on listed and proposed species and designated and proposed critical habitat during planning to protect and improve the condition of species and their habitats to a point where their special status is no longer necessary.

Federally listed species can have critical habitat identified as crucial to species viability. For those species that are listed and have not had critical habitat designations identified for them, the BLM cooperates with the USFWS to determine and manage habitats of importance. Protective measures for migratory birds are provided in accordance with the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), enacted in 1940, with amendments. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act (1934).

Special status species indicators reflect population levels, distribution, and quantity and quality of preferred and suitable habitat and the prey needed to support them. This includes critical breeding habitat, wintering grounds, and corridors

needed to support migrations and a healthy genetic pool needed for adaptability to future circumstances and conditions. Indicators are detected through allotment evaluations, stream and vegetation monitoring, population surveys, the Natural Heritage Program database, field observations, and USFWS data.

**Threatened and Endangered Fish**

Two fish species which are listed as threatened and endangered (T&E) under the Endangered Species Act (Table 3.22) are presently known to occur in the planning area but not on BLM lands or are only marginally affected by BLM management.

<b>Table 3.22 Threatened, Endangered, and Candidate Fish Species In the HiLine Planning Area</b>				
<i>Common Name</i>	<i>Scientific Name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Species Status</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	G1	S1	Listed Endangered
Bull Trout	<i>Salvelinus confluentus</i>	G3	S2	Listed Threatened

**Pallid Sturgeon**

The pallid sturgeon was listed by the USFWS as an endangered species in 1990. Its historic range included the Missouri River, the middle and lower reaches of the Mississippi River, and the lower reaches of the Yellowstone, Platte, and Kansas Rivers. The current distribution of the pallid sturgeon in Montana includes the Missouri River between the mouth of the Marias River and Fort Peck Reservoir, the Milk River from the mouth to Vandalia Dam, between Fort Peck Dam and the North Dakota border, and in the 112 kilometers of the Yellowstone River below the mouth of the Powder River. The areas of highest occurrence appear to be in Montana, in the Yellowstone River below the Intake Diversion Dam, and in North Dakota, in the Missouri River from its confluence with the Yellowstone River downstream to the headwaters of Lake Sakakawea. Populations in Montana are comprised entirely of old, large fish, as there is no evidence of successful reproduction in at least 25 years. The Upper Missouri River population is thought to be comprised of only 50 adult fish, and a small number of young hatchery-reared individuals. Five radioed pallid sturgeon that migrated up the Milk River in Valley County in 2011 and stayed for an extended time included a female that had a high probability of being in spawning condition (Fuller, et al. 2012).

**Bull Trout**

The native bull trout has been determined to be a separate species from the coastal Dolly Varden. Bull trout in the planning area are only found in the Upper Saint Mary and Belly River drainages of Glacier National Park and the Blackfeet Indian Reservation. They are not found in BLM-managed habitat. Their declining trend has led to their designation as a threatened species. Bull trout do not tolerate high sediment levels in their spawning streams. Sediment can suffocate the developing embryos before they hatch.

**Montana BLM Sensitive Fish Species**

Montana BLM sensitive species occurring in the planning area include nine fish species. Table 3.23 shows the species and their general habitat association.

For most special status species, comprehensive data on population numbers and distribution within the planning area are not available. Occurrence data from the Montana Natural Heritage Program and BLM records identify the presence and location for some special status wildlife species in the planning area; however, these data reflect observations from opportunistic or project-specific surveys, rather than a complete inventory of the planning area.

**Table 3.23  
Montana BLM Sensitive Fish Species  
In the HiLine Planning Area**

<i>Common Name</i>	<i>Scientific Name</i>	<i>State of MT Species of Concern/MFWP Tier Level*</i>	<i>General Habitat</i>
Northern Redbelly X Finescale Dace	<i>Phoxinus eos x phoxinus neogaeus</i>	2	River/Stream
Paddlefish	<i>Polyodon spathula</i>	1	River/Stream
Pearl Dace	<i>Margariscus margarita</i>	1	River/Stream
Sauger	<i>Sander canadensis</i>	1	River/Stream
Sturgeon Chub	<i>Macrhybopsis gelida</i>	1	River/Stream
Westslope Cutthroat Trout	<i>Oncorhynchus clarkii lewisi</i>	1	River/Stream

Species added to the Montana BLM sensitive species list will have management actions developed to conserve, enhance and protect the species in accordance with applicable BLM guidance.

Montana BLM sensitive species are those species designated by the BLM State Director, usually in cooperation with the state agency responsible for managing the species, and State Natural Heritage Programs. BLM sensitive species are those species that:

- could become endangered in or extirpated from a state, or within a significant portion of its distribution;
- are under status review by the USFWS;
- are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution;
- are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, candidate, or state listed status may become necessary;
- typically have small and widely dispersed populations;
- inhabit ecological refugia or other specialized or unique habitats; or
- are state listed, but which may be better conserved through application of BLM sensitive species status.

Sensitive species fish found in the planning area include the paddlefish, shortnose gar, westslope cutthroat trout, northern redbelly dace x finescale dace hybrid, sturgeon chub, sicklefin chub, pearl dace, blue sucker, and sauger. Most of these species occur primarily in the Missouri River along the southern border of the planning area and in the Milk River system with little or no direct impact from management of BLM lands (exceptions are the pearl dace and the northern redbelly x finescale dace hybrid). The blue sucker has only been found in the Milk River below Vandalia Dam. The westslope cutthroat trout is only found on the Blackfeet Indian Reservation, which is outside of BLM management.

#### **Northern Redbelly x Finescale Dace Hybrid (*Phoxinus eos x P. neogaeus*)**

The northern redbelly x finescale dace hybrid (*Phoxinus eos x P. neogaeus*) is a Montana Fish Species of Special Concern, Class C, as well as a BLM sensitive species. It was placed on the list due to its rarity and unusual form of genetic reproduction (gynogenesis). Montana appears to be the only state that designates a special status for this hybrid fish. Further inventory is needed to better delineate *Phoxinus spp.* distribution in Montana. Due to the difficulties of field differentiation, it is likely that some waters thought to contain only the northern redbelly dace may also have the hybrid. The finescale dace may also be present in very small numbers, but no verified specimens exist for Montana. It must have been present at some point after the last period of glaciations in order for the original hybridization to occur. Although its presence would no longer be necessary for gynogenesis to occur, it is possible finescale and northern redbelly used to in the past or currently may overlap with the hybrid but nothing is confirmed.

Northern redbelly dace habitat and populations should be treated the same as those of the northern redbelly x finescale dace hybrid in those streams that have not had records for the hybrid. *Phoxinus spp.* are not extremely common in Montana. Few prairie streams in Montana have the clear pool-type habitat preferred by *Phoxinus spp.* Due to the limited distribution and knowledge of either species, it is important to reduce impacts to their known habitats.

The northern redbelly dace and /or the hybrid are found in 22 streams which cross BLM surface ownership (see Appendix N, Table N.5).

Changes in stream temperature, sedimentation, streamflow, and water quality could impact pearl dace and northern redbelly x finescale dace hybrid species. Management actions should encourage healthy riparian areas, ample streamflow, screened diversion ditches, stable stream channels and banks, reduced erosion, and functional floodplains. Management actions within the Water, Vegetation – Riparian and Wetlands, and Fish sections of this RMP are designed to conserve, enhance and protect habitats for these species.

### **Pearl Dace**

The pearl dace is a native of both the eastern and northern drainages within the glaciated plains ecoregion of Montana, and is an indicator species of the coolwater northern redbelly dace assemblage. Pearl dace are not abundant at the relatively few sites in cool, small streams and ponds that they are known to inhabit, so they are designated a Montana Fish of Special Concern. The pearl dace is found within nine streams that are located within BLM surface ownership (see Appendix N, Table N.5).

### **Other Species**

The spoonhead sculpin and trout-perch are State of Montana species of special concern found in the planning area, but these fish are not BLM sensitive species because they are not found in areas managed by the BLM. The other species are generally found in large rivers outside the jurisdiction of the BLM.

## **Fluid Minerals**

### **Oil and Gas**

Between 1998 and 2012, approximately 270 federal leases consisting of approximately 254,176 acres were nominated and offered for lease in the planning area. As of December 2012, 1,199 existing federal oil and gas leases covered 804,873 acres, or approximately 19% of the federal oil and gas mineral estate in the planning area. Phillips County had the greatest number of federal oil and gas leases (589) and the most acreage leased (473,025 acres). Conversely, Glacier County had the least number of federal leases (27) while Liberty County had the least amount of federal acreage leased (14,225 acres). In the same time period between 1998 and 2012, 1,238 federal leases representing approximately 1,205,638 acres were terminated. A federal lease will terminate if paying production is not established on the leasehold within the specified primary term, or if established production on a lease ceases. A leased parcel that contains at least one well that is capable of production in paying quantities will not expire.

### **Drilling and Completion Activity**

Extraction and production of oil or natural gas from the various hydrocarbon-bearing formations in the planning area follow similar processes. These processes include drilling the production hole, extracting the oil and gas resource, separating any water produced with the hydrocarbon, and in the case of natural gas, separating any liquid hydrocarbon and trucking or piping the product to a sales point and the produced water to a disposal facility.

All extraction processes involve above-ground facilities such as tank batteries, separators, treaters, dehydrators, and storage tanks. The size of the facilities can vary substantially depending on the production rate of the well and other components produced with the hydrocarbon. For example, a low gas/low water-producing well may have only one small dehydration/separation/treater unit. However, a well that produces hydrogen sulfide in conjunction with the hydrocarbon may flow to a centralized plant or plants to remove the water, sulfur, and other waste byproducts.

Appendix E.1, Oil and Gas Operations, contains a complete overview of the exploration, leasing, production and regulation of fluid minerals on BLM surface lands and federal subsurface minerals on split estate lands.

The following description of current and historical drilling is a brief summary of information included in the Reasonable Foreseeable Development (RFD) summary. The complete RFD is available on the internet at <http://blm.gov/8qkd>. While a lot of the information is dated back a few years, the purpose of presenting it here is to provide some background information that was used to project future activity levels in the planning area.

Early exploration in Montana emphasized finding crude oil reserves. Erdmann (1963) reported that “gas was an incidental, unwanted byproduct with little or no market that seldom brought a price of more than 3 cents per thousand cubic feet at the casing head, if it could be sold at all.” Erdmann (1963) indicated that even into the 1960s interest in exploring for gas was less than that for oil due to the tradition of low field prices for this commodity. In more recent years, increases in the value of natural gas have made it a sought after commodity. In 2005, Montana ranked 16th out of the 50 states in the nation in natural gas production (Energy Information Administration 2007).

Historically, a total of 20,170 wells have been drilled in the planning area through March 28, 2007 (IHS Energy Group 2007). About 16% of these wells were drilled on federal minerals. According to the Montana Board of Oil and Gas Conservation (MBOGC) (2007), a total of approximately 8,088 wells within the planning area are still active or producible with 62% of that total classified as gas wells and the remaining 38% classified as oil wells. When all well types are considered (including injection wells, disposal wells, gas storage wells, etc.), 44% of all the wells drilled in the planning area are still in an active status (8,882 wells) while the remaining 56% have been abandoned or are in the process of being abandoned (IHS Energy Group 2007 and MBOGC 2007).

Natural gas production activity over the last land use plan cycle of 1990 through 2006 (BLM 1988 and 1994a) showed this area to be an important natural gas producing area for Montana. Between 1990 and 2006:

- 3,631 wells were drilled; of which 2,767 were gas completions, 204 were oil completions and 660 were dry holes. About 93% of the successfully completed wells were natural gas completions.
- Annual overall gas production rates increased, while oil production rates decreased.
  - In 2006, the planning area produced a total of 56.3 billion cubic feet of natural gas, or 61% of Montana’s total natural gas production.
  - Total natural gas production in 2006 was about 41% greater than the production recorded for 1990.
  - The highest total production, almost 56.8 million cubic feet of natural gas, was reported in 2001.
  - Blaine, Hill and Phillips Counties accounted for 81% of the natural gas production in 2006, with Phillips County leading the way.
- Gas production has remained fairly constant since 2001, after increasing in 1999 and 2000.
- In 2005, the planning area accounted for 21 of Montana’s top 25 gas producing fields (MBOGC 2006). Of these, the Bowdoin Field is the second largest producing gas field in Montana contributing 14% of the state’s total natural gas production.

Oil producing fields in the planning area presently make a smaller contribution to the state’s oil production. Following is a summary of oil production within the planning area:

- In 2005, only four fields (Cut Bank-9th, Kevin-Sunburst-13th, Rabbit Hills-35th, and Reagan-42nd) ranked in the top 50 oil producing fields in Montana (MBOGC 2006).
- For 2005, production for the planning area totaled 1.225 million barrels of oil (MBOGC 2006). That year’s production was about 50% less than the production recorded for 1991. The reported 1991 production was the highest of the 16-year period and production has declined each year since then.

- Glacier, Toole, Blaine, Valley, and Liberty Counties accounted for almost all of the oil production in the planning area. Glacier County accounted for 37% of the production in the planning area in 2006.
- In 2006, oil production in the planning area contributed only about 4% of Montana's total oil production (MBOGC 2006 and 2007).
- It is unlikely that oil production in the planning area will increase in the future; it will most likely continue to decline.

### **Vertical, Directional and Horizontal Drilling**

To ensure that drilling and completion operations are conducted in a safe and environmentally sound manner, the BLM approves and regulates all drilling and completion operations, and related surface disturbance associated with federal and Indian oil and gas mineral development. Operators must submit Applications for Permit to Drill (APDs) to the agency in accordance to Onshore Order #1. Prior to approving an APD, the BLM identifies all potential subsurface formations that will be penetrated by the wellbore. This includes groundwater aquifers and any zones that would present potential safety or health risks that may need special protection measures during drilling, or that may require specific protective well construction measures. All well casing and cementing operations that occur on federal/Indian lands would be reviewed and approved by BLM and conducted in accordance with the applicable requirements specified in Onshore Oil and Gas Order No. 2 and the American Petroleum Institute (API) standards.

Vertical drilling is the traditional drilling method employed throughout the planning area. Depending on subsurface geology, technological advances in directional and horizontal drilling allow operators to deviate boreholes from a few degrees (directional) to completely horizontal. This allows operators to reach reservoirs that are not located directly beneath the drilling rig, or allows the borehole to contact more of the reservoir. Directional drilling can also be utilized to reduce impacts to vegetation, soil, wildlife habitat (including fragmentation), livestock grazing, and visual and recreational values. Fewer miles of roads and pipelines are necessary and in some cases, facilities such as reserve pits have been shared among multiple wells on a single pad. Directional boreholes may be specifically deviated or allowed to drift updip naturally on the flanks of a geologic structure.

Operators prefer conventional vertical drilling over directional or horizontal drilling because drilling and completion costs for directional and horizontal boreholes are higher than for conventional vertical boreholes, and the risk of losing the borehole due to technical drilling difficulties is also higher.

However, if specific reservoir conditions are deemed suitable and support the use of directional/horizontal practices, directional drilling can allow for greater borehole-to-reservoir contact (increased drainage area) and increased productivity. In this case, the potential for increased productivity may offset the additional drilling costs and risks, making this type of borehole the preferable drilling option. According to Eustis (2003), horizontal or directional drilling:

- increases the ability to intersect many fractures;
- minimizes premature entry of water or gas into the borehole;
- increases the potential drainage area;
- increases the ability to intersect layered reservoirs at high dip angles;
- improves coal gas production;
- increases productivity; and
- improves the injection of water, steam, etc.

While unconventional zones (methane-bearing coal zones, oil or gas bearing shale zones, gas hydrates or "tight gas" in low porosity or low permeability traditional zones), have long been surpassed by the oil and gas industry, recent technological advances in horizontal drilling and hydraulic fracturing described below have allowed development of these formations that were once universally considered as uneconomic.

Horizontal drilling is defined as deviating a wellbore at least 80 degrees from the vertical so that the borehole penetrates a productive formation in a manner parallel to the formation. Most horizontal wells are drilled vertically from the surface to several hundred feet above the productive formation. The wellbore is then drilled in a curve ending with the well going sideways through the productive formation.

Drilling time may be longer for horizontal wells than for a vertical well drilled to the same producing formation due to increased drilling footages. The need for more drilling mud volume may also increase water needs, pit size or the number of holding tanks on site compared to a vertical well in the same producing formation.

### ***Well Testing and Completion***

After the well is drilled, testing operations would commence. If testing indicates the presence of an economic level of oil and/or gas, the well would be completed. Typical completion operations would involve setting and cementing the production casing to the total depth of the well. There are also instances where casing is set at the top of the target zone, and the formation is completed in the open hole.

After the proper casings are set, wells are often treated to improve the recovery of hydrocarbons by increasing the rate and volume of hydrocarbons moving from the natural oil and gas reservoir into the wellbore. These processes are known as well-stimulation treatments, and they are designed to create new fluid passageways in the producing formation or remove blockages within existing passageways. They include fracturing, acidizing, and other mechanical and chemical treatments often used in combination. The results from the different treatments are additive and often complement each other, which makes it possible to introduce fluids carrying sand, walnut hulls, or other small particles of material into the newly created crevices to keep the fractures open when the pressure is relieved. This increases the flow rate and volume of reservoir fluids that move from the producing formation into the wellbore.

After completion operations are finished, wellhead equipment consisting of various valves and pressure regulators are installed to control the oil or gas flow to the production facilities and allow safely shutting in the well under any conditions.

### ***Hydraulic Fracturing***

The practice of hydraulic fracturing has been utilized by the oil and gas industry since the late 1940s. Within the planning area, hydraulic fracturing, in conjunction with horizontal drilling described above, has allowed for development of unconventional zones that were once considered uneconomical, like the Bakken and Three Forks Formations in the Williston Basin area.

Hydraulic fracturing is a technique used to create additional space and connecting channels for the existing rock pores that are located in deep underground geologic formations. This technique usually requires greater volumes of fluid. The induced space allows the rock to more readily release oil and natural gas so it can flow to the surface via the well bore. The typical steps of hydraulic fracturing can be described as follows:

1. Water, sand and additives are pumped at high pressures down the wellbore.
2. The liquid goes through perforated sections of the wellbore and into the surrounding formation, fracturing the rock and injecting sand or other proppants into the cracks to hold them open.
3. Experts continuously monitor and gauge pressures along with the volume of fluids and proppants, while studying how the sand reacts when it hits the bottom of the wellbore, slowly increasing the density of sand to water as the frac progresses.
4. This process may be repeated multiple times, in “stages” to reach maximum areas of the wellbore. When this is done, the wellbore is temporarily plugged between each stage to maintain the highest water pressure possible and get maximum fracturing results in the rock.
5. Frac plugs are drilled or removed from the wellbore and the well is tested for results.
6. The water pressure is reduced and fluids are returned up the wellbore for disposal or treatment and re-use, leaving the sand in place to prop open the cracks and allow the oil/gas to flow to the well bore.

Hydraulic fracturing generally increases the production rate of any well and provides a conduit to reserves that would otherwise be uneconomical to develop. The fracturing fluid is typically more than 99% water and sand, with small amounts of readily available chemical additives used to carry the proppant and control the chemical and mechanical properties of the water and sand mixture.

Before hydraulic fracturing takes place, all surface casing and some deeper, intermediate zones are required to be cemented from the bottom of the cased hole to the surface in accordance with Onshore Order #2 and API standards. The

cemented well is pressure tested to ensure there are no leaks and a cement bond log is run to ensure the cement has bonded to the casing and the formation.

In addition to federal regulations, the State of Montana, Department of Natural Resource and Conservation, Oil and Gas Conservation Division, Board of Oil and Gas Conservation (MBOGC) regulations also ensure that all resources including groundwater are protected. The MBOGC regulations require new and existing wells which will be stimulated by hydraulic fracturing must demonstrate suitable and safe mechanical configuration for the stimulation treatment proposed. If the operator proposes hydraulic fracturing through production casing or through intermediate casing, the casing must be tested to the maximum anticipated treating pressure. In accordance with MBOGC Rule 36.22.1015 operators are required to disclose and report the amount and type of fluids used in well stimulation to the Board or, if approved by the Board, to the Interstate Oil and Gas Compact Commission/Groundwater Protection Council hydraulic fracturing web site (FracFocus.org).

The MBOGC (2007) reported 91 directional wells in the planning area at the end of 2007: 42 wells each in Blaine and Hill Counties, 3 wells in Glacier County, and 1 well in Toole County. Three Applications for Permit to Drill (APDs) have been filed for wells in Chouteau County. Of these 91 wells, 50 are gas or gas shut-in, 1 is an oil shut-in, 7 are abandoned, 5 are spud and 28 are APDs.

Directional wells have been almost entirely gas wells and the successful productive completion rate is reported as 88%. The high success rate in the planning area is attributed to almost 90% of completed wells being field development wells. The industry prefers to not drill wildcat wells directionally in areas lacking detailed geology and reservoir characteristics, due to inherent and increased risks.

To date, the Eagle Sandstone supports almost all directionally drilled wells. The drilling depths in the Eagle range from 1,200 to 2,800 feet. Nine wells have been drilled in the Sherard field, 21 in the Sawtooth Mountain field and 33 in the Tiger Ridge field.

Horizontal boreholes have not been commonly used in the planning area. Horizontal boreholes appear to have only been used to contact more of the reservoir (increase the drainage area) and to increase productivity. The MBOGC (2007) reported that 36 wells located in the planning area are classified as horizontal wells. These wells are concentrated in Toole (12 wells), Glacier (11 wells), and Blaine (10 wells) Counties. One abandoned well and two spud wells are located in the northeast portion of Valley County. Of these 36 wells, 20 are oil or oil shut-in and temporarily abandoned, 7 are abandoned, 4 are APDs, 2 are spud, 2 are injection wells and 1 is a gas well.

Horizontal wells have been almost entirely oil wells and the successful productive completion rate for these types of boreholes has been 75%. Almost all completed wells have been field development wells. The target formations for these wells have been older and deeper than for the directional wells. Most wells target the Jurassic Ellis Group (11 wells), Mississippian Madison Group (8 wells), and the Devonian Birdbear (Nisku) formation (6 wells). Target drilling depths have been 1,300-6,950 feet, with about 66% in the 2,500-3,500 foot range.

## **Produced Water**

Associated water produced with the oil or gas is disposed of by trucking the water to an authorized disposal pit; placing the water in lined or unlined pits; discharging the water into surface drainages, or through subsurface injection. The disposal of produced water in an injection or disposal well requires permit(s) from the primacy state or EPA. Primacy means that a state or agency has the ultimate responsibility for permitting and monitoring the Underground Injection Control program for Class 2 wells (saltwater disposal and secondary recovery wells). Montana is currently a primacy state candidate; operators in Montana must seek EPA approval until primacy is granted. In some instances, an additional surface management agency authorization may be necessary. The quality of the water often dictates the appropriate disposal method, and the MDEQ has primacy through the EPA to approve surface disposal of this water. An Environmental Assessment is prepared for all requests concerning disposal of produced water from federal wells.

In the planning area, approximately 193.6 million barrels of associated water was produced in the ten-year period from 2003-2012. Of the total 193.6 million barrels of produced water, 156.4 million barrels, or roughly 81%, were produced in Glacier County (61.2 million barrels) and Toole County (95.2 million barrels), primarily from mature oil fields that

employ water flooding operations. The remaining 37.2 million barrels of water were produced from the remaining counties, as follows:

- Blaine County 18,316,470 barrels
- Chouteau County 79,828 barrels
- Hill County 2,955,812 barrels
- Liberty County 7,618,436 barrels
- Phillips County 7,999,896 barrels
- Valley County 165,875 barrels

This water production occurred as a byproduct of natural gas production with the bulk of the water production occurring in Blaine and Valley Counties. (Water Production Data gather from PI/Dwights Production Data, December 2012).

### Spent Hydraulic Fracturing Fluids

A small portion of the fracking fluids are initially produced during "flowback" with the remainder of the fluid either remaining in the reservoir rock or produced with the other wellbore fluids (oil, gas, formation water) during the production phase. However, the disposal of the frac fluids would follow a similar process as the produced water (trucking the water to an authorized disposal pit, placing the water in lined or unlined pits; discharging the water into surface drainages, or through subsurface injection). The proper method of disposal is determined based on the constituents of the fluid and surface resources that may need protection.

### Coalbed Natural Gas

The extraction of coalbed natural gas (CBNG) combines the issues of high water production with low-pressure gas operations. The reservoir characteristics of coal dictate that high water production rates are initially required to dewater the reservoir and allow the gas to flow from the cleat surfaces within the coal. The gas is primarily trapped on the face of the coal within the cleat system via molecular attraction. In order to liberate the gas molecules from the coal face, the hydrostatic pressure, or head, must be reduced.

A typical CBNG well will initially exhibit high water production rates with little or no gas. At a certain point, the water rate will begin to steadily decline while the gas rate increases until it reaches a maximum gas rate. This simplified explanation of the process indicates that the CBNG production process appears to be backwards when compared to conventional oil and gas production, which starts with high hydrocarbon production rates and low water rates and then advances to low hydrocarbon rates and high water rates.

Generally, CBNG reservoirs occur at depths of less than 5,000 feet and are considered shallow wells by the industry. A typical CBNG well operation consists of a wellhead, insulated well house to cover the wellhead, powerline (buried or overhead), and a subsurface pipeline to transport the gas to a central production facility. The purpose of the powerline is to provide power to the high capacity electrical submersible pumps (ESPs) or progressive cavity (PC) pumps. The pumps are set toward the bottom of the tubing in the well and produce/push water up through the tubing. This allows the gas to flow freely up the well in the annular space between the tubing and the casing – which is also referred to as the backside. Central production facilities typically include gas metering equipment and compressors. Depending on how the operator disposes of the produced water, there could be an additional pipeline to transport the water to the nearest water disposal site, which could be a water treatment facility, water disposal well, water injection well (for secondary recovery operations), or some other water-holding facility (e.g., evaporation pond).

The water disposal sites are commonly co-located with the central production facilities. The quality of the extracted water resource varies, and options for its disposal are highly dependent on its quality, quantity and cost. In some cases, depending on water quality and quantity, water may be allowed to be disposed of in the local drainages. This action would be considered on a case-by-case basis and would need to be approved by both the MDEQ and the BLM.

No CBNG exploration or development has occurred within the planning area; therefore, no CBNG produced water discharge into surface water features including ephemeral channels has occurred. Under all disposal options, operators must obtain all necessary state permits.

## Forests and Woodlands

Healthy forests are capable of providing society with the long-term sustainability of forest resources and products. A healthy forest displays resilience to disturbance by maintaining a diverse set of structures, compositions and functions at the stand and landscape levels.

The forests and woodlands of the planning area generally begin at about 2,500 feet in elevation in and around the “breaks” of the Missouri River and extend northerly toward the mountains in “stringers” following the drainages. In the three island mountain ranges (Sweet Grass Hills, Bears Paw Mountains and Little Rocky Mountains) the forests become more prevalent and exist on all aspects upwards to about 7,100 feet in elevation. The coniferous forests in the mountains are comprised of mostly ponderosa pine, Douglas-fir and lodgepole pine with minor amounts of limber pine occurring on the steeper and more exposed, drier slopes. The Sweet Grass Hills support disjunct populations of both whitebark and the more abundant limber pine. The Hills represent the easternmost extension of whitebark pine's range in Montana and are approximately 100 miles from the closest whitebark pine stands to the west (Kendall 1998). The forests of the breaks are considerably more open and almost exclusively ponderosa pine with Douglas-fir limited to the cooler, more moist bottoms and northerly aspects.

Hardwood species such as birch, aspen, cottonwoods and willows exist almost exclusively in areas where there is an abundance of moisture year round such as river bottoms and streams. The hardwood forests are minor by comparison to the coniferous forests, but provide an important component on the landscape for wildlife values.

Table 3.24 summarizes the forest and woodland acres throughout the planning area. The acres shown in the table are subject to change as ground truthing is completed.

<i>Location of BLM Forests/Woodlands</i>	<i>Acres</i>	<i>Percentage of Total Acres</i>
Bears Paw Mountains	840	2%
Breaks and other locations along streams and rivers	6,245	13%
Little Rocky Mountains	30,949	63%
Sweet Grass Hills	6,248	13%
Wilderness Study Areas	4,590	9%
Total for all locations	48,872	100%

## Factors Affecting Forest and Woodland Health

Healthy forests and woodlands are biologically and structurally diverse. They are tolerant of fires and other natural disturbances and are dominated by vigorous trees, native grasses, shrubs and forbs. A healthy forest is not void of insects, disease and other causes of mortality, but is able to withstand such infestations as a natural part of the successional cycle.

Healthy forests and woodlands are dependent upon disturbances that help keep the forests from entering a late successional stage known as “climax.” Prior to the advent of organized fire suppression our forest and woodlands burned fairly frequently but with very low intensities. These low-intensity fires served the purpose of maintaining our forests in an early successional state that kept them free from diseases and did not allow dead fuels to build up. In addition, these fires also maintained a mix of natural openings and parks within the forests which were critical for wildlife. As the natural cycles of disturbances are altered the forest approaches climax and these natural openings begin closing in with encroachment. A climax forest becomes overstocked and stagnated, and therefore more susceptible to diseases and pathogens as well as being less desirable for wildlife. A forest without cyclic disturbances begins a process of decaying and mortality increases. As mortality increases in all age classes, natural openings are lost to encroachment and these stands become more susceptible to high severity (instead of maintenance) wildfires. These wildfires burn with such intensities that tree loss is nearly 100%, and soil properties are altered such that re-sprouting of desirable grasses, shrubs and forbs does not happen. Oftentimes the burned site becomes infested with non-native and exotic plant species.

Cyclic natural disturbances may not be feasible or tolerated due to land ownership patterns and development over the past 100 years. However, active forest management which mimics natural disturbances is possible. Forest management with goals of restoring and maintaining forest health and natural openings would reduce overstocking, improve vigor and desirable species, improve wildlife habitat, increase desired forest structures, reduce the risk of high severity wildfires, and provide some economic return to local economies.

## Forest Products

No active forest management is occurring in the Bitter Creek and Burnt Lodge Wilderness Study Areas and Sweet Grass Hills ACEC since commercial sales are not allowed. Forest product sales in the Bears Paw Mountains are limited, primarily due to lack of access. Commercial activities in the breaks are limited to personal use, special forest products such as: fuelwood, Christmas trees, and post and pole products.

The BLM has an active program of selling personal use, special forest products permits in the Little Rocky Mountains, and in the past 10 years the commercial sales of forest products has increased. Demand for commercial forest products remains high; however, opportunities for the Little Rocky Mountains are limited due to market conditions and transportation costs. The nearest wood products processing facility is located in Columbia Falls, Montana, over 340 miles away.

## Forest Treatments

Over the past 10 years, less than 1,000 acres (2%) of forested land in the planning area have been treated. Most of the work has occurred in and around the towns of Zortman and Landusky in the Little Rocky Mountains. Projects there were designed to improve forest health, but had specific objectives of reducing hazardous fuels. Detailed inventories of these treated stands occurred. Using this most recent data, the treated acres averaged approximately 1.7 thousand board feet (MBF) per acre of product removal, along with about one ton per acre of other material (biomass) removed. Based on the data from past projects in the planning area, approximately 83 million board feet (MMBF) along with 50,000 tons of other biomass are available for removal in order to achieve healthy forest objectives. However, not every acre of forested ground is currently available for active management, nor is it foreseeable in the near future. A variety of laws, restrictions, management objectives, etc. play a role in determining feasibility of forest management. If an estimated 20% of the planning area will not receive any kind of treatment in the foreseeable future, approximately 39,100 acres would remain available for some kind of forest health treatment. To meet the goal of treating all available acres on a 100-year rotation cycle (391 acres/year), the probable sale quantity for the planning area would be approximately 664 MBF and 4,000 tons per year of biomass.

Personal use permits for incidental forest product removal such as fuel wood, Christmas trees, and post and poles are projected to continue at the current rate of 100 permits per year.

## Geology

### Geologic Setting

The following discussion offers a brief synopsis of the geologic history of the planning area. The regional stratigraphy is depicted in Figure 3.10.

Paleozoic Era strata, rock types spanning time from approximately 570 to 240 million years ago, range in thickness from 5,000 to 10,000 feet. The distribution of the units that comprise the Paleozoic Era strata is important because most of the oil and natural gas in Montana occurs within them.

Cambrian Period aged sediments consisting of sandstone (Flathead formation) are overlain by shale and limestone. Thickness varies from 1,000 to 1,500 feet across the area.

Ordovician aged rocks formed from deposition of sands, muds (Winnipeg formation), and limey sediments (Big Horn dolomite). Where exposed in the Little Rocky Mountains, rock thicknesses approach 275 feet.



Drilling data indicate that several hundred feet of Silurian strata are present in easternmost Montana in a belt about 100 miles from the Canadian border. These sediments comprise the Interlake formation; a limey and dolomitic rock unit containing commercial deposits of oil.

About 1,000 feet of strata was deposited in middle Devonian time consisting of limestone and dolomite (Jefferson formation), thick deposits of anhydrite (similar to gypsum), and dark shales (Three Forks formation).

The Mississippian Period strata consist of approximately 1,000 feet of Madison group limestone with occasional thick beds of anhydrite. The Madison limestone yields large quantities of oil. In central Montana, narrow channel sands (Tyler formation) in the top of the Big Snowy Group also produce oil.

At the beginning of the Mesozoic Era, 240 to 66 million years ago, a condition developed which widely affected the pattern of sedimentary rocks in Montana. Northcentral Montana was elevated by a broad, gentle tectonic uplift. The horizontal Paleozoic strata were slightly domed or arched upward across a distance of about 300 miles, centering near Havre. This uplift is known as the Paleozoic Sweet Grass Arch.

Toward the middle of Jurassic time another marine sea spread over this portion of the state depositing sandy, shaley and limey sediments of the Ellis Group. Thicknesses range from 200 to 600 feet, being thickest to the east. The bottom bed of the Ellis Group formations consists of very fine sandstone (Sawtooth formation). The middle portion (Rierdon formation) is essentially limestone, and the upper part (Swift formation) is mainly shale with some sandstone. In central Montana, red and gray shale with a 5-10 foot bed of gypsum is present at the base.

The late Cretaceous to early Tertiary time was a period of intense volcanism and mountain building activity in this portion of Montana. The region is broken by centers of intrusive and/or extrusive igneous activity. Such areas include the Bears Paw Mountains, the Little Rocky Mountains, and the Sweet Grass Hills. Along the margins of these uplifts, the exposed stratigraphic section may include units as old as Precambrian in age, up to those deposited just prior to the uplift. With the coming of the Tertiary Period the ancestral Rockies of western Montana were being eroded and the material spread for hundreds of miles over the plains region east of the mountains. The Hell Creek formation of latest Cretaceous age and the Fort Union formation of earliest Tertiary age resulted. Later, during Tertiary time, the old erosion surface of western Montana was uplifted again (Laramide orogeny) to form the second Rockies. Beds of gravel eroded from these mountains and were deposited by rivers and streams onto the plains. These gravels are known as the Flaxville gravels and are considered to be middle to late Tertiary age.

At the beginning of the Quaternary Period, large amounts of snowfall accumulated in Canada. The snow compacted to ice, building to a thickness of perhaps two miles. The weight of the ice caused it to spread southward into Montana, to approximately the present course of the Missouri River. Two major periods of glacial advance into the region occurred during the Pleistocene Epoch. The first, and farthest, advance occurred during the Illinoian stage, and the second during the Wisconsinian. The ice blocked many of the north-flowing rivers creating large glacial lakes across central Montana. As the ice melted, its load of soil and rock material was deposited over most of northern Montana, filling preglacial valleys and covering the upland plains with glacial drift or moraine consisting of gravels, sand, and clay; but also characterized by numerous large boulders of igneous rock. With the last retreat of glacial ice from the region about 10,000 years ago, the landscape looked quite different. The Missouri River, which formerly flowed in the current Milk River Valley and drained into Hudson Bay, was pushed south to its present position. Many other lesser streams and rivers either disappeared totally or had their courses radically altered.

In more recent time, erosion has dissected the landscape into its present form. Alluvial material derived from eroding mountains, or from reworked glacial deposits, occurs at several levels above current drainages.

## Geologic Hazards

The planning area covers an area of very low probability for seismic hazards (USGS 2008). Other small-scale and localized geologic hazards such as rockfalls and sinkholes do exist in the planning area. However, these are infrequent events and pose minimal threat to public safety.

## Geologic Features – Azure Cave

Azure Cave is a limestone solution cavern located near Zortman, Montana, in the Little Rocky Mountains. The cave has national significance because of its bat hibernaculum values. It is one of several hibernaculums in the Pacific Northwest and possibly the northernmost in the United States.

Azure Cave is described in greater detail later in this chapter under Special Designations, Areas of Critical Environmental Concern, Existing ACECs.

The surface geology at the site of the cave is Mississippian limestone of the Mission Canyon or Lodgepole formation. Based on the stratigraphy and structural traps, the area is rated as having a moderate occurrence potential for oil and gas.

The Record of Decision for the Judith-Valley-Phillips RMP (BLM 1994a) designated 142 acres as the Azure Cave ACEC to protect resources and the bat hibernaculum. The designation of the ACEC only applies to BLM lands. The cave is currently being managed to protect bats during crucial hibernation periods and the BLM allows access on a limited basis. Additionally, the BLM continues the withdrawal from mining claim location to protect public recreation values and the bat hibernaculum.

Factors that impact cave resources include vandalism and unauthorized entry, and unauthorized and illegal disposal of solid and/or hazardous waste which may result in degradation of groundwater resources.

## Lands and Realty

The lands and realty programs are support programs which respond to the demands of industry and utilities, the public, other government entities, and other BLM disciplines to help ensure that BLM lands and boundaries are managed to provide the greatest possible benefit to the public. The programs are responsible for management of land ownership adjustments, management of land boundaries, land use authorizations, public access, withdrawals, trespass prevention, identification and abatement, and land tenure records system and associated geospatial data. The most active part of the lands and realty program is the authorization of rights-of-way which are issued primarily for roads, utilities, communication sites, and oil and gas facilities.

Table 3.25 shows BLM acres (surface and subsurface) by county. The BLM lands in the westernmost counties of Glacier, Toole, Liberty and Hill consist of mostly scattered surface parcels. The easternmost counties of Blaine, Phillips and Valley contain large blocks of contiguous BLM land as well as many significant parcels of land acquired from private landowners under the Bankhead-Jones Farm Tenant Act (LU lands).

<i>County</i>	<i>BLM Surface</i>	<i>BLM Subsurface</i>
Blaine	299,201	615,688
Chouteau	45,025	174,281
Glacier	1,040	6,184
Hill	14,448	156,967
Liberty	7,543	66,990
Phillips	1,029,362	1,744,612
Toole	27,646	123,203
Valley	1,013,209	1,351,730
Total	2,437,474	4,239,655

Split estate is a land status term which applies when the surface is patented or deeded into non-federal ownership, while the federal government retains the mineral rights. Reverse split estate applies when the federal government transferred both the surface and mineral estate into non-federal ownership, but the surface estate was subsequently returned while the minerals, or a portion of them, were retained by the private landowner.

Four Indian reservations are located within the planning area: Blackfeet, Rocky Boy's, Fort Belknap, and a portion of the Fort Peck Reservation. The BLM has no jurisdiction on tribal lands.

## Land Ownership Adjustment

Land ownership (or land tenure) adjustment refers to those actions that result in the disposal of BLM lands and/or the acquisition of non-federal lands or interests.

**Disposal** of BLM lands usually takes place through exchange or sale. Disposals result in a title transfer, wherein the lands leave the public domain. All disposal actions are coordinated with adjoining landowners, local governments, and current land users. Disposals through sale and use of sale receipts must meet the guidance and specifications provided by the Federal Land Policy and Management Act (FLPMA) (43 CFR 2710).

**Land exchange** involves trading lands or interests in lands with willing non-federal landowners. Exchanges are discretionary BLM transactions, except for those exchanges that are congressionally mandated or judicially required. The value of the lands to be exchanged must be approximately equal and the lands must be located within the same state. Exchanges must be in the public's interest and in conformance with the applicable land use plan. Land exchange is the BLM's preferred method of land ownership adjustment to bring lands and associated interests with high public resource values into public ownership; consolidate land ownership and mineral estate patterns to achieve more efficient management of resources and BLM programs; and dispose of public land parcels identified through the RMP.

The primary means of land ownership adjustment within the planning area has been through exchange. Since completion of the West HiLine and Judith-Valley-Phillips RMPs, eight land exchanges affecting federal and/or non-federal lands within the planning area have been completed. These exchanges have improved public land ownership patterns by generally disposing of small, isolated tracts of public land with limited resource values while acquiring over 5,900 acres of nonfederal land with higher public resource values that are adjacent to larger blocks of BLM land (LR2000, December 2007). Lands in the planning area have also been used in exchanges mandated by Congress.

**Acquisition** of land, or interest in land, occurs through exchange, donation, or purchase when the subject land meets acquisition criteria identified in land use planning and manual guidance. The primary funding source for purchases is the Land and Water Conservation Fund (LWCF). Congress appropriates these funds annually based on agency nominations; the BLM tends to nominate acquisitions within special designation areas. Acquisitions are for the full fee interest in title or for partial interests such as road easements or conservation easements. The BLM acquires land and easements from willing sellers.

**Recreation and Public Purposes (R&PP) Act:** The R&PP Act authorizes the transfer of BLM lands when it serves the public interest. No R&PP patents have been issued in the planning area since the completion of the West HiLine and Judith-Valley-Phillips RMPs.

**Other Disposal Authorities:** During this same time period, no lands were conveyed for agricultural entries under the Desert Land Act or Carey Act, nor have any lands been conveyed for airport grants, Indian allotments, color-of-title actions, and railroad or state grants.

**State Indemnity Selections:** Under Ordinances of 1785 and 1850, sections 16 and 36 in each township were set aside for the maintenance of public schools and were known as school sections. A state indemnity or 'in lieu' selection is made by the state to compensate for school sections which it did not receive, either because the section was fractional, claimed prior to statehood, or reserved for some other purpose. Under such circumstances, a state is entitled to a state indemnity selection. As of April 2007, 1,021 acres of state indemnity selection obligations remain throughout the State of Montana.

## Land Use Authorizations

Land use authorizations include right-of-way grants under Title V of FLPMA and right-of-way grants and associated temporary use permits under the Mineral Leasing Act of 1920 (MLA), as amended; leases, permits, and easements under Section 302 of FLPMA; and R&PP Act leases.

Land use authorizations are issued for a variety of purposes. Examples of long-term uses include rights-of-way for linear and site facilities. A permit is issued for a short term, up to three years, and allows the temporary use of BLM lands for such things as agricultural purposes, filming, placement of beehives, etc. which involve minimal land improvement or disturbance. Permits can be renewed, but are also revocable. The HiLine District analyzes requests for land use authorizations and applies mitigation measures on a case-by-case basis.

**Rights-of-Way:** A right-of-way grant authorizes the use of a specific area of BLM land for a specific facility and a specific period of time; however, it grants no authority or possessory interest to the holder. The majority of rights-of-way granted are authorized by FLPMA or MLA. FLPMA rights-of-way authorize the use of BLM land for access to private land, for utility facilities and infrastructure, or for communication facilities. The MLA authorizes rights-of-way for oil and gas facilities not authorized under oil and gas lease.

Exceptions to the need for a right-of-way under FLPMA or MLA include roads and/or facilities authorized by specific statute such as Federal Aid Highways, county roads authorized under Revised Statute (RS) 2477 prior to implementation of FLPMA, and casual use activities that do not cause any appreciable surface disturbance.

RS 2477 provided for the use of unencumbered public lands for public roads; there was no requirement for an executed document authorizing these roads, nor were they required to be officially recorded on the BLM’s land use plats. Roads not already verified through administrative or judicial determinations to be RS 2477 roads will continue to be used in the previous manor until their status can be verified. It is a controversial issue that remains unresolved at this time.

The HiLine District administers 722 rights-of-way which encumber nearly 26,150 acres of BLM land (LR2000 Database Report, December 2012). The various types of rights-of-way and total acres for each are shown in Table 3.26. These grants are for a number of different facilities and are held by private individuals as well as various industry and government entities. Oil and gas pipelines, power transmission and distribution lines, roads, and telecommunication lines are the most common types of right-of-way facilities and account for well over half of the total number of grants. Other right-of-way facilities include communication sites, water facilities, railroads, and material sites. Approximately 10 to 15 right-of-way actions are processed annually. In addition, applications are received to amend, assign, renew or relinquish existing right-of-way grants.

<i>Type</i>	<i>Havre Field Office</i>		<i>Glasgow Field Office</i>		<i>Malta Field Office</i>		<i>Total</i>	
	<i>No.</i>	<i>Acres</i>	<i>No.</i>	<i>Acres</i>	<i>No.</i>	<i>Acres</i>	<i>No.</i>	<i>Acres</i>
Powerlines	50	1,653	22	1,523	35	1,362	107	4,538
Telecommunication Lines	31	877	9	215	15	905	55	1,997
Roads/Highways	50	1,238	29	1,386	41	1,290	120	3,914
Communication Sites	19	19	2	6	23	98	44	122
Oil/Gas Pipelines and Facilities	63	585	8	251	61	1,873	132	2,709
Oil/Gas Roads	35	162	4	45	14	32	53	239
Material Sites	5	76	5	40	7	74	17	189
Water Facilities	111	2,774	27	621	41	8,253	179	11,649
Railroads	8	212	2	272	5	306	15	791
<b>Total</b>	<b>372</b>	<b>7,596</b>	<b>108</b>	<b>4,359</b>	<b>242</b>	<b>14,194</b>	<b>722</b>	<b>26,148</b>

Source: Lands and Realty Database, LR2000, December 20, 2012.

**Communication Sites:** These are locations containing authorized communication facilities which may include cellular telephone, microwave, paging, TV translators, mobile radio, or other communication uses. Only facility owners or facility managers are required to have authorizations; tenants or customers need a lease agreement with the facility owner or manager to utilize the site.

The BLM administers 44 communication site rights-of-way at 11 different locations. The location and designated use of each communication site is shown in Table 3.27. The nine commercial sites have management plans, and most sites are occupied by more than one user. The BLM has administrative sites on Antoine Butte, Mount Royal, Rose Hill, and Whitewater (LR2000, December 20, 2012).

<i>Communication Site</i>	<i>Location</i>	<i>Designated Use</i>
Antoine Butte	T. 25 N., R. 24 E., Section 12	Low Power; Broadcast
Harlem	T. 32 N., R. 23 E., Section 6	Low Power; Non-broadcast
Kevin Rim	T. 35 N., R. 18 E., Section 18	Low Power; Non-broadcast
Larb Hills	T. 31 N., R. 33 E., Section 31	Low Power; Non-broadcast
Loring	T. 36 N., R. 29 E., Section 17	Low Power; Broadcast
Mount Royal	T. 36 N., R. 5 E., Section 30	Low Power; Broadcast
Northern Border	T. 33 N., R. 38 E., Section 12	Low Power; Broadcast
Rose Hill	T. 30 N., R. 40 E., Section 18	Low Power; Non-broadcast
Saco Hills	T. 31 N., R. 33 E., Sections 7, 8	Low Power; Broadcast
Sheep Coulee	T. 28 N., R. 8 E., Sections 31, 32	Low Power; Non-broadcast
Whitewater	T. 35 N., R. 32 E., Section 33	Low Power; Non-broadcast

Source: LR2000 database, December 20, 2012.

The BLM has additional administrative communication facilities at non-commercial sites or on other agency land. They are located at Cabin Creek on the Charles M. Russell National Wildlife Refuge, on Centennial Butte on the Rocky Boy's Reservation, and at Ophem.

Several communication sites in the planning area have been amended to allow the Northern Tier Interoperability Consortium to install communications and auxiliary equipment under the umbrella of the Department of Homeland Security. These sites include Antoine Butte, Mount Royal, the Saco Hills, and Whitewater.

**Leases, Permits and Easements:** The HiLine District administers one Section 302 FLPMA land use permit for agricultural purposes, which involves about 6.8 acres of BLM land.

Nine agricultural Section 302 FLPMA leases for small grain farming are administered in the Lonesome Lake Management Area. The leases are issued for a fixed period of time, can be renewed, but are not revocable. The nine leases comprise 2,129 acres that are currently managed under a Memorandum of Understanding with the Bureau of Reclamation (No. 4-AG-05050).

No BLM-granted easements exist in the planning area. These easements should not be confused with access or conservation easements which are acquired by the BLM from non-federal landowners. An example of a BLM-granted easement would be an instance where private land containing a residence lies adjacent to BLM land that could be used for grazing. The private landowner could apply to the BLM for an easement that would restrict grazing on that land.

**Recreation and Public Purposes (R&PP):** The Recreation and Public Purposes Act authorizes the leasing of BLM land for recreation or public purposes to state and local governments, or to qualified nonprofit organizations. Applicants for an R&PP lease must have an established or a defined proposed project and submit a detailed plan of development. Five R&PP leases comprising about 52 acres exist within the planning area, including leases to the Malta School District for the location of two elementary rural schools on BLM land, the County of Phillips for the Lewis and Clark Amphitheater, and the Zortman Fire Station for the location of a fire dispatch building on BLM land. A recreational roping arena is located in the Glasgow Field Office. No airport leases are located on BLM land in the planning area.

Table 3.28 depicts BLM leases and permits in the planning area.

<i>Type</i>	<i>Havre Field Office</i>		<i>Glasgow Field Office</i>		<i>Malta Field Office</i>		<i>Total</i>	
	<i>No.</i>	<i>Acres</i>	<i>No.</i>	<i>Acres</i>	<i>No.</i>	<i>Acres</i>	<i>No.</i>	<i>Acres</i>
Section 302(b) Lease	10	2,136	0	0	0	0	10	2,136
R&PP Lease	0	0	1	40	4	12	5	52

Source: Lands and Realty Database (LR2000), December 31, 2012.

## Access

Access refers to the physical ability and legal right of the public, agency personnel, and authorized users to reach BLM lands. The lands and realty programs primarily assist in the acquisition, marking, and documenting of perpetual, exclusive easements to provide for legal access where other programs have identified a need. Public access easements are pursued as opportunities arise and/or when access is critical, are granted in perpetuity, and are usually exclusive, which means the BLM controls use of the road. When the BLM acquires a perpetual, exclusive easement for public road access, any commercial use of the road by industry or utilities requires an approved right-of-way grant from the BLM.

Access to BLM land is an issue of concern for both agency personnel and the public. The fragmented ownership pattern of BLM land intermingled with private and state land complicates the access issue. While progress has been made, the HiLine District still has areas that lack legal access to BLM land. Access acquisition efforts have focused on larger blocks of public lands which are designated for retention in public ownership; areas with important resource values; areas where public demand for access is high; and areas with substantial BLM investments. Access is acquired from willing landowners on a case-by-case basis as opportunities arise.

The acquisition of road easements is the primary means of obtaining legal access to BLM land where none currently exists. Exclusive easements provide public access, while nonexclusive easements are generally for administrative use. The HiLine District currently administers a total of 35 easements, including 28 exclusive and 7 nonexclusive (LR2000, April 2007).

Land exchanges are used on occasion to acquire needed access to BLM land, and the consolidation of BLM land ownership patterns by exchange has generally improved access in the planning area. When disposing of BLM parcels containing roads or trails necessary for access to other BLM lands, the HiLine District protects these access routes by reserving them in the conveyance documents and documenting them in the land tenure records system with associated geospatial data. Easements held by the BLM for public access across state and private land are shown in Table 3.29.



Sandy Retention Reservoir, Southeast Chouteau County

Photo by Brian Hockett

<b>Table 3.29 BLM Easements Across State and Private Land</b>		
<i>Serial #</i>	<i>Road Name</i>	<i>Legal Description</i>
M7852	Triple Crossing Access	T26N R34E, sec. 32: W2
M17369	Dry Fork Road	T24N R25E, sec. 23, 26
M17370		T24N R25E, sec. 25, 26
M16930		T24N R26E, sec. 30, 35
M16931		T23N R27E, sec. 3, 4
M17082		T24N R26E, sec. 36
M16456		T24N R26E, sec. 36
M22526		T24N R26E, sec. 28, 29, 32, 33, 34, 35
M83412		T24N R28E, sec. 26, 27
M83413		T24N R28E, sec. 28
		T24N R27E, sec. 36
		T23N R28E, sec. 16
M35069	Square Butte Road	T23N R24E, sec. 36
M35070		T23N R24E, sec. 16
M35079		T23N R24E, sec. 16
M39387	Beaver Branch Road	T27N R39E, sec. 7, 18
M40854		T26N, R37E, sec. 18
M79542		T26N R37E, sec. 16
M58619	Meissner Road	T29N R6E, sec. 24
M60820	Assiniboine Creek Road	T32N R29E, sec. 31
M67003	Big Reservoir Rd	T30N R40E, sec. 16
M74128	Fisher Road	T28N R35E, sec. 18
M77582	Coal Mine Coulee Road	T26N R19E, sec. 34, 35
		T26N R20E, sec. 34
M78475	Central Montana Rail Acquisition	T36N R27E, sec. 17, 18, 19, 29, 30
M78843	Cow Creek Road	T26N R19E, sec. 36
M78918	White Rock Coulee Road	T27N R28E, sec. 16, 17, 20, 36
M83410	Big Sag Road	T25N R31E, sec. 16
M83411	First Creek Road	T25N R30E, sec. 16
M84001	Moffat Bridge	T29N R6E, sec. 17
M93282	Vimy Ridge Road	T25N R9E, sec. 11
M93487		T25N R9E, sec. 11

Source: Lands and Realty Database (LR2000), November 30, 2009.

## Facilities

Five administrative sites are physically located within the planning area, but are supported and managed by BLM offices outside the area. The Little Rockies Fire Station and the Zortman administrative site, located east of Zortman, Montana, are managed and supported by the Central Montana District fire program. The Missouri Breaks Interpretive Center and The Fort Benton Visitor Center are located in Fort Benton and are managed by the Upper Missouri River Breaks National Monument. The Eagle Creek repeater is also located within the planning area, but is only used for radio support of and is managed by the Upper Missouri River Breaks National Monument.

The Malta Field Office administrative site and related buildings are managed by the Malta Field Office. Offices located in Glasgow and Havre are leased from private entities. A regular assessment of asset condition is used to manage owned sites and optimize facility leasing versus owning any facilities needed to successfully support the management of the planning area.

The BLM has radio repeater sites at the following locations: Antoine, Mount Royal, Opheim, Whitewater, and Willow Creek.

Bridges and recreation sites exist in the planning area. Bridges may be inspected and maintained on different schedules than the roads, but are managed as transportation-related facilities. Recreation site inspection and maintenance will be done to support the recreation program objectives of the sites.

## Withdrawals

A withdrawal is a formal action that sets aside, withholds, or reserves federal lands by administrative order or statute for public purposes. The purpose of a withdrawal is to accomplish one or more of the following:

- segregate (close) federal land from the operation of all or some of the public land laws and/or mineral laws;
- transfer total or partial jurisdiction of federal land between federal agencies; and/or
- dedicate federal land for a specific public purpose.

Withdrawals can be categorized into three major types:

- **Congressional:** legislative withdrawals in the form of public laws. Examples include designations for wild and scenic rivers and national parks.
- **Administrative:** withdrawals made by the President, Secretary of the Interior, or other officers of the executive branch of the federal government. The Secretary may delegate this withdrawal authority only to individuals in the Office of the Secretary who have been appointed by the President, by and with the advice and consent of the Senate (FLPMA, sec. 204. [43 USC 1714] (a). Examples include recreation sites and public water reserves.
- **Federal Power Act:** power project withdrawals established under the Federal Power Act of June 10, 1920. These withdrawals are automatically created upon the filing of an application for hydroelectric power development with the Federal Energy Regulatory Commission.

Table 3.30 summarizes the types of withdrawals and the acres of BLM land withdrawn in the planning area. The BLM also administers withdrawals for several other agencies including the Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and U.S. Department of State/International Boundary.

<b>Table 3.30 Withdrawals (Acres)</b>				
<i>Type</i>	<i>Havre Field Office</i>	<i>Glasgow Field Office</i>	<i>Malta Field Office</i>	<i>Total</i>
Little Rocky Mountains	NA	NA		3,978
Azure Cave			143	
Camp Creek Campground			40	
Montana Gulch Campground			60	
Landusky Town Site			82	
Landusky Recreation Site			15	
Zortman Town Site			108	
Zortman/Landusky Mine Reclamation			3,530	
Sweet Grass Hills	19,687	NA	NA	19,687
Power Site Reserve/Classification	30,406	NA	NA	30,406
BLM	NA	434	1,061	1,495
<b>Total</b>	<b>50,093</b>	<b>434</b>	<b>5,039</b>	<b>55,566</b>

Source: West HiLine Draft EIS p. 59, JVP Final EIS p. 134, and LR2000 (July 2007).

On October 5, 2000, the BLM withdrew 3,530 acres in the Zortman/Landusky mine reclamation area from location and entry under the Mining Law (i.e., closed to the location of new mining claims) to protect the ongoing reclamation of the Zortman and Landusky Mines located in the Little Rocky Mountains. A five-year extension was granted on October 5, 2005 to continue protection of the reclamation area, and an additional five-year extension was granted effective

October 5, 2010. Approximately 1,200 acres have been disturbed by mine operations and reclamation work, of which about half is on BLM land.

Power Site Reserve and Power Site Classification withdrawals are administrative withdrawals that protect water/power development potential. The withdrawals are located in two general areas along portions of the Marias and Milk Rivers. Generally speaking, these sites are withdrawn from surface disposal only.

All water power and water storage withdrawal reviews in Phillips and Valley Counties are pending site evaluation for water power potential.

The BLM considers requests for new withdrawals and withdrawal revocations, extensions, or modifications on a case-by-case basis. Existing withdrawals are also reviewed on a case-by-case basis prior to the end of the withdrawal period or as otherwise required by law to determine whether they should be extended, revoked, or modified.

## Livestock Grazing

The BLM is responsible for administering livestock grazing on BLM lands in the planning area. Livestock grazing can include the grazing of cattle, sheep, horses, goats, and bison. BLM lands are important to local ranch operations, particularly in the eastern half of the planning area (Blaine, Phillips and Valley Counties). In these areas, the majority of ranch operations lease or are permitted to graze on some BLM lands. The BLM lands are almost always intermingled with private and state lands, which are grazed as one unit. Across the planning area only a few allotments contain 100% BLM land. BLM lands maintain the integrity of many ranch operations and support the culture, lifestyle, and livelihood of the grazing lessees. In many cases, if ranchers lost their BLM grazing permit(s)/lease(s), the viability of their ranch operation would be seriously affected, thereby making it extremely difficult for them to stay in the livestock business.

## Animal Unit Month (AUM) Allocations

Land in the planning area has been used by ranchers for grazing livestock since the latter part of the 19th century. More sheep were grazed in the early part of the 20th century than in the latter part. Sheep numbers probably reached their peak in the 1950s, but have steadily declined since then.

The HiLine District manages BLM lands for livestock grazing in portions of Blaine, Chouteau, Glacier, Hill, Liberty, Phillips, Toole, and Valley Counties, with the majority of the lands in Blaine, Phillips and Valley Counties. Approximately 2.4 million surface acres of BLM land are available for grazing within 969 allotments (see Appendix G). Grazing allotments typically contain a combination of federal, state, and private lands and range in size from approximately 8 acres to 154,970 acres, with the average allotment size being approximately 3,150 acres. The HiLine District administers 763 grazing authorizations (permits and leases), permitting approximately 386,600 Animal Unit Months (AUMs) of livestock forage. Actual AUM use in the planning area is generally less than authorized AUM use. At present, approximately 28,904 acres of BLM land are closed to grazing. All allotments in the planning area have been assessed for rangeland health standards.

Grazing systems used on BLM lands fall into the following categories: yearlong, season long, and rotational (i.e., deferred rotation, rest rotation, and time-controlled grazing systems). Of the 969 allotments in the planning area, approximately 28% (270) authorize yearlong use, which is a reflection of the intermingled land pattern that exists across the planning area, as well as the small percentage of BLM land found in those allotments. The majority of these ranch operations use pastures containing BLM land throughout the year; however, this does not mean individual pastures containing BLM lands are used 12 months of the year.

Of the 763 grazing permits/leases the vast majority are cattle only; a handful authorize sheep; and 2 authorize bison. The use of horses for ranch operations is common and is authorized on a small percentage of the permits/leases.

Rangeland improvement projects can serve as vegetation management tools or best management practices (BMPs) to control or improve livestock distribution, enhance wildlife habitat, and control noxious/invasive plants. These projects consist primarily of fences, reservoirs, springs, water wells, and vegetative or land treatments. When properly

implemented, rangeland improvement projects assist in maintaining or improving rangeland health and increase forage production. Table 3.31 shows the range improvement projects completed on BLM land between 1992 and 2008, along with the total recorded number, which includes both the 1992-2008 and previously recorded rangeland improvement projects.

<b>Table 3.31 Range Improvement Projects</b>				
<b>Project Type</b>	<b>Projects Completed 1992-2008</b>		<b>Total Recorded Number*</b>	
	<b>No. of Projects</b>	<b>Miles/Acres</b>	<b>Total No. of Projects</b>	<b>Total Miles/Acres</b>
Reservoirs	828	NA	5,006	NA
Springs	5	NA	74	NA
Wells	6	NA	88	NA
Pipelines	34	63 Miles	55	109 Miles
Fences	216	413 Miles	1,314	3,963 Miles
Land Treatment	14	1,968 Acres	36	10,990 Acres
Vegetation Treatment	18	5,308 Acres	170	52,518 Acres

Source: Rangeland Improvements Projects System (RIPS), 2008.

\* Some of these projects may be within the boundary of the Charles M. Russell National Wildlife Refuge, but were never removed from BLM records. Similarly, some may be within the Upper Missouri River Breaks National Monument.

All allotments in the planning area have been categorized as Improve Existing Resource Conditions (**I**), Maintain Existing Resource Conditions (**M**), or Custodial Management (**C**) to identify areas where management was potentially needed, as well as to prioritize workloads and the use of range improvement dollars. When the allotments were originally categorized, resource conditions in some of the allotments placed in the **I** category were not necessarily in need of improvement. Criteria that were used to place allotments in the **I** category included the following:

- amount of BLM land present in the allotment;
- willingness of permittees/lessees to invest in management;
- opportunities for constructing range improvements;
- existence of grazing-related resource conflicts;
- allotment had moderate to high forage production potential and was producing at low to moderate levels;
- the rancher or the BLM identified opportunities for improvement in range condition;
- range trend was static or downward;
- livestock management could be improved through water distribution;
- seasons of use or other factors;
- opportunities existed for a positive economic return on public investments.

In addition to the above factors, current policy is to categorize allotments as Category **I** where current livestock grazing management or level of use on public land is a significant causal factor in the non-achievement of land health standards. When identifying Category **I** allotments, the BLM will review condition of critical habitat, conflicts with sage-grouse, and whether projects have been proposed specifically for implementing the Healthy Lands Initiative. Allotments where land health standards are met or where livestock grazing on public land is not a significant causal factor for not meeting the standards and current livestock management is in conformance with guidelines would be categorized as Category **M**. Category **C** allotments would be allotments where public lands produce less than 10 percent of the forage in the allotment or are less than 10 percent of the land area.

The BLM has worked to resolve the issues identified in higher priority allotments. Currently, 198 allotments are categorized as **I**, 439 are classified as **M**, and 332 are classified as **C** (Appendix G). The **I** and **M** category allotments contain approximately 2,313,862 acres of BLM land, or 95% of the total acreage in the planning area. In the past, allotments in the **I** category generally received top priority.

<b>Table 3.32 Watershed Plans, Watershed Reports and Implementation Plans Completed</b>	
	<i>Year Completed</i>
Antelope-Brazil Complex Watershed Report	2003
Bears Paw to Missouri River Breaks Grazing Allotments Grazing Guidelines Implementation (Standards for Rangeland Health) and Grazing Permit/Lease Renewals	2005
Beauchamp Watershed Plan	2001
Beaver Creek Watershed Plan	2004
Big Warm Watershed Plan	2007
Cottonwood Watershed Plan	2005
Frenchman Creek Watershed Plan	2006
Larb Creek Watershed Report	2005
Loma/Vimy Ridge Watershed Environmental Assessment and Plan Amendment	2002
Lonesome Lake Management Area Environmental Assessment and Resource Management Plan Amendment	1996
Lower Little Beaver Watershed Monitoring and Standards and Guidelines Report	2006
Lower Little Beaver Watershed Plan	2001
Lower Marias Grazing Allotments Grazing Guidelines Implementation (Standards for Rangeland Health) and Grazing Lease Renewals	2006
Missouri-Lonetree Watershed Plan	1997
Missouri-Lonetree Watershed Plan Review and Update	2004
Missouri-Lonetree Watershed Ten Year Monitoring and Standards and Guidelines Report	2010
Northeast Bears Paw Grazing Allotments Grazing Guidelines Implementation (Standards for Rangeland Health) and Grazing Permit Renewals	2009
Northwest Blaine Grazing Allotments Grazing Guidelines Implementation (Standards for Rangeland Health) and Grazing Lease/Permit Renewals	2006
Porcupine-Buggy Complex Watershed Report	2002
Rock Creek Watershed Report	2004
Telegraph-Fourcette Watershed Plan	2002
Upper Marias, Sweetgrass Hills and Kevin Rim Grazing Allotments Grazing Guidelines Implementation (Standards for Rangeland Health) and Grazing Lease/Permit Renewals	2007
Wayne Creek and Woody Island Grazing Allotments Grazing Guidelines Implementation (Standards for Rangeland Health) and Grazing Lease/Permit Renewals	2007
Whitewater Watershed Plan	2004
Willow North Watershed Monitoring and Standards and Guidelines Report	2005
Willow North Watershed Plan	1999

The federal grazing regulations require the BLM to evaluate rangeland health and manage livestock in accordance with the Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota, and South Dakota (BLM 1997a). The five standards (see Appendix H) relate primarily to physical and biological features of the landscape and are intended to be within control of the land manager and achievable by the user. These standards relate to all BLM resource programs, and rangeland health can be positively or adversely impacted by any resource program or resource use.

The standards are used to enhance sustainable livestock grazing and wildlife habitat while protecting watersheds and riparian ecosystems. Current management strives to maintain or improve rangeland health on all grazing allotments; however, the emphasis is on **I** and **M** category allotments and not all allotments in the planning area.

A total of 969 allotments totaling 2,429,979 acres have been evaluated (Appendix G), of which 907 allotments (2,239,760 acres) were found to meet rangeland health standards and 62 allotments (190,219 acres) were found to not be meeting one or more standards. In 35 of the 62 allotments not meeting standards, livestock were determined not to be the primary factor causing degradation of rangeland health. In the remaining 27 allotments not meeting rangeland health standards, past or present livestock uses were determined to be contributing factors. It is important to note that only specific areas (e.g., 15% or less of the allotment) within the 27 allotments were failing to meet at least one rangeland health standard, and in all cases corrective actions have been taken. Through an environmental review process for the 969 allotments, management prescriptions for vegetation and grazing management were identified and implemented in watershed plans, watershed reports and implementation plans. These included construction of range improvements and changes to grazing management. The plans listed in Table 3.32 are located in or partially within the HiLine planning area.

Where livestock grazing has been identified as contributing to an allotment failing rangeland health standards, guidelines or BMPs have been or will be implemented. Monitoring is conducted to determine whether objectives are being met and if further adjustments in management need to be made.

Over the last 40 to 50 years, an improvement in range condition has occurred, due largely to improved grazing management practices, development of range improvement projects (e.g., fences and water developments) and, in some cases, reduction in livestock numbers or change in kind of livestock. To various degrees, improvements in range condition generally are anticipated to continue under all alternatives based on vegetation treatment, range improvement projects, and development of guidelines for those areas determined not to meet rangeland health standards.

Local ranching operations are increasingly being purchased for non-agricultural purposes and often by non-local investors. Although not exclusive, recreational sport hunting tends to be chief among those purposes, while traditional uses and users are often given a lesser priority. This trend is likely to continue and will increase the workload of area resource specialists as they adapt management to these changing paradigms. Rarely are new permittees/lessees familiar with the subtleties of BLM land ranching, and quite often existing activity plans do not fit the needs of new landowners.

The BLM anticipates that continued implementation of Standards for Rangeland Health and site-specific allotment objectives will continue to stabilize and improve range areas.

## Noxious Weeds and Other Invasive Non-Native Species

An invasive species as defined in Executive Order 13112 is an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Within the planning area, present invasive species consist of primarily exotic plant species. However, other types of organisms such as animals and pathogens are making their way closer to the planning area and could potentially impact activities on BLM lands within the next 20 years. Most of these species are associated with water bodies and have been designated by the state as Aquatic Nuisance Species (ANS).

The State of Montana has developed priority categorization systems for noxious plants and ANS. Both noxious weeds and ANS have been identified as having the potential to cause economic and environmental harm and/or harm to human health.

## Noxious Weeds and Invasive Plants

Noxious weed invasion contributes to the loss of rangeland productivity, increased soil erosion, reduced water quantity and quality, reduced species and structural diversity, loss of wildlife habitat, and in some instances, is hazardous to human health and welfare, as emphasized in the federal Noxious Weed Act of 1974 (PL 93-629, as amended by section 15 – Management of Undesirable Plants on federal Lands, 1990). Some weed species pose a significant threat to multiple use management of BLM land.

Noxious and invasive plant species, for the most part, are associated with areas experiencing natural or man-made disturbances. Noxious and invasive plants are mainly found along waterways, roads, recreational destinations, over-utilized rangeland, pipelines, drilling pads, rights-of-way, and livestock/wildlife paths and congregation areas. Data derived from state and BLM-based mapping suggests that approximately 140,000 acres or 8% of BLM land in the planning area is infested or potentially infested by at least one invasive species. This data includes species that do not occur on state or county noxious weed lists, but are known to be invasive. This data does not include any grass species and incomplete information on some species. The species known to occur within the planning area (on private, state, and federal lands) are outlined in Table 3.33.

<i>Name</i>	<i>Scientific Name</i>	<i>Symbol*</i>	<i>Status</i>	<i>Occurs on Public Land</i>	<i>Occurs on Private/ State Land</i>	<i>BLM Acre Class*</i>
field brome	<i>Bromus arvensis</i>	BRAR5	BLM Invasive	Yes	Yes	High
downey brome (cheatgrass)	<i>Bromus tectorum</i>	BRTE	MT Priority 3	Yes	Yes	High
hoary cress (whitetop)	<i>Cardaria draba</i>	CADR	MT Priority 2B	Yes	Yes	Trace
musk thistle	<i>Carduus nutans</i>	CANU4	BLM Invasive Liberty County Noxious	Yes	Yes	Rare
diffuse knapweed	<i>Centaurea diffusa</i>	CEDI3	MT Priority 2B	Yes	Yes	Rare
spotted knapweed	<i>Centaurea maculosa</i>	CEST8	MT Priority 2B	Yes	Yes	Mod
Russian knapweed	<i>Centaurea repens</i>	ACRE3	MT Priority 2B	Yes	Yes	High
yellow starthistle	<i>Centaurea solstitialis</i>	CESO3	MT Priority 1A	No	Yes	None***
oxeye daisy	<i>Chrysanthemum leucanthemum</i>	LEVU	MT Priority 2B	No	Yes	None
Canada thistle	<i>Cirsium arvense</i>	CIAR4	MT Priority 2B	Yes	Yes	High
poison hemlock	<i>Conium maculatum</i>	COMA2	BLM Invasive Chouteau County Noxious	Yes	Yes	Trace
field bindweed	<i>Convolvulus arvensis</i>	COAR4	MT Priority 2B	Yes	Yes	High
houndstongue	<i>Cynoglossum officinale</i>	CYOF	MT Priority 2B	Yes	Yes	Low

<b>Table 3.33 Noxious and Invasive Plants Occurrence in the HiLine Planning Area</b>						
<i>Name</i>	<i>Scientific Name</i>	<i>Symbol*</i>	<i>Status</i>	<i>Occurs on Public Land</i>	<i>Occurs on Private/ State Land</i>	<i>BLM Acre Class*</i>
Russian olive	<i>Elaeagnus angustifolia</i>	ELAN	BLM Invasive	Yes	Yes	Mod
leafy spurge	<i>Euphorbia esula</i>	EUES	MT Priority 2B	Yes	Yes	High
baby's breath	<i>Gypsophila paniculata</i>	GYPA	BLM Invasive	Yes	Yes	Trace
			Blaine County Noxious			
			Chouteau County Noxious			
			Valley County Noxious			
orange hawkweed	<i>Hieracium aurantiacum</i>	HIAU	MT Priority 2A	No	Yes	None
black henbane	<i>Hyoscyamus niger</i>	HYNI	BLM Invasive	Yes	Yes	Trace
perennial pepperweed	<i>Lepidium latifolium</i>	LELA2	MT Priority 2A	Yes	Yes	Trace
Dalmatian toadflax	<i>Linaria dalmatica</i>	LIDA	MT Priority 2B	Yes	Yes	Rare
yellow toadflax	<i>Linaria vulgaris</i>	LIVU2	MT Priority 2B	Yes	Yes	Low
purple loosestrife	<i>Lythrum salicaria</i>	LYSA2	MT Priority 1B	No	Yes	None***
scentless chamomile	<i>Matricaria perforata</i>	MAPE2	BLM Invasive	No	Yes	None
			Chouteau County Noxious			
Scotch thistle	<i>Onopordum acanthium</i>	ONAC	BLM Invasive	Yes	Yes	Low
curlyleaf pondweed	<i>Potamogeton crispus</i>	POCR3	MT Priority 1B	No	Yes	None
sulfur cinquefoil	<i>Potentilla recta</i>	PORE5	MT Priority 2B	No	Yes	Low
perennial sowthistle	<i>Sonchus arvensis</i>	SOAR2	BLM Invasive	Yes	Yes	Low
			Liberty County Noxious			
Salt cedar	<i>Tamarix spp.</i>	TARA	MT Priority 2B	Yes	Yes	Low
common tansy	<i>Tanacetum vulgare</i>	TAVU	MT Priority 2B	No	Yes	None

Source: All species on Montana's Noxious Weed List also appear on BLM's Invasive Plant List. This table was constructed using data from the County Weed Districts, The Invaders Database System, The USDA PLANTS Database, and the Malta, Glasgow, and Havre BLM Offices.

\* Symbol Taken from USDA's Plants Database

\*\* BLM Class Values: None = 0 acres; RARE = <1 acre; Trace = 1 to 5 acres; Low = 5 to 50 acres; Mod = 50 to 500 acres; High = > 500 acres

\*\*\* Species was identified and eradicated in the recent past.

The invasive species management program continually changes as a result of new introductions, additional inventory and the ongoing implementation of management projects. The BLM uses a full range of integrated pest management in the planning area. The basic management of noxious and invasive plants consists of:

- early detection and rapid response (newly invading species);
- containment and management (widespread weed infestations);
- inventory, monitoring and evaluation; and
- internal and external awareness, education and outreach.

The control methods used to control noxious weeds include:

- chemical – application of herbicides
- physical – includes both mechanical and manual removal methods
- biological – both Classical and Non-Classical
  - Classical Biological control is the use of natural enemies from a target plant's native range and is usually a species of herbivorous insect/arthropod or a plant pathogen.
  - Non-Classical Biological Control is the use of targeted grazing to affect plant populations. The goal of Non-Classical Biological Control is not livestock production, although in some instances that can be a secondary benefit.
- cultural – includes revegetation and changes in land use practices (timing, duration, forage harvest, etc.)

## Aquatic Nuisance Species (ANS) and Other Invasive Species

The current ANS list includes some plant species that are also listed as noxious. Table 3.34 shows the species of concern. Other than a few plant species, the planning area is currently free of ANS. However, suitable habitat for many of these species is present and if introduced, these species could impact BLM lands and their management.

Long-term monitoring indicates invasive species are generally spreading 10-25% annually on BLM land. This range is variable because trend data reflects the increased resources over time in locating invasive species rather than new increases in overall infested areas due to dispersion.

The annual expansion of invasive species will most likely continue at current rates as a whole. Uncommon species in the planning area should be static or declining in abundance due to coordinated emphasis on eradication and containment. Designated prevention areas and education activities at the state and local levels have been implemented for noxious weeds and other non-native invasive species. If effective, the spread of invasive species could be reduced by public land users who have been presented with the prevention message and apply that knowledge to their activities.

Widespread species will account for most of the expansion, even though mitigation is in place for most surface-disturbing activities. Widespread infestations must be prioritized for management due to limited resources, thus the absence of active management in these situations and the abundance of these species account for most of the annual spread. Increases in energy development or recreation would most likely increase the probability of spread because of the associated surface disturbance and/or the mobility of vehicles entering from infested areas.

### Montana Aquatic Nuisance Species Priority Classes

**Priority Class 1** species are currently not known to be present in Montana but have a high potential to invade, and there are limited or no known management strategies for these species. Appropriate management for this class includes prevention of introductions and eradication of pioneering populations.

**Priority Class 2** species are present and established in Montana, have the potential to spread in Montana, and there are limited or no known management strategies for these species. These species can be managed through actions that involve mitigation of impact, control of population size, and prevention of dispersal to other waterbodies.

**Priority Class 3** species are not known to be established in Montana, have a high potential for invasion, and appropriate management techniques are available. Appropriate management for this class includes prevention of introductions and eradication of pioneering populations.

**Priority Class 4** species are present and have the potential to spread in Montana, but there are management strategies available for these species. These species can be managed through actions that involve mitigation of impact, control of population size, and prevention of dispersal to other waterbodies.

Factors that impact invasive species include natural and anthropogenic pathways and disturbance mechanisms. Their ability to spread is not always associated with their proximity to established infestations. Natural processes that contribute to the spread of invasive species include fire, flooding, ice scouring in streams, drought, wind, and wildlife. Construction activities (roads, wells, and pipelines), recreation, and agricultural uses also contribute to the spread of invasive species. These challenges require coordination across all of the BLM’s resource programs to develop, integrate, and implement aggressive management techniques and strategies for controlling adverse impacts and the spread of invasive species in the planning area. Management actions anticipated to address the challenges presented by invasive species and pest control are incorporated in the alternatives in Chapter 2.

<b>Table 3.34 Aquatic Nuisance Species</b>			
<i>Common Name</i>	<i>Scientific Name</i>	<i>Priority Class</i>	<i>Occurs In or In Proximity to Planning Area (Yes/No)</i>
<b>Crustaceans</b>			
spiny waterflea	<i>Bythotrephes cederstroemi</i>	Class 1	Unknown
rusty crayfish	<i>Orconectes rusticus</i>	Class 1	Unknown
<b>Fish</b>			
northern snakehead	<i>Channa argus</i>	Federal Injurious Wildlife Species	No
Eurasian ruffe	<i>Gymnocephalus cernuus</i>	Class 1	No
Asian carp	<i>Includes: Hypophthalmichthys nobilis, Mylopharyngodon piceus, Ctenoparyngodon idella, Hypophthalmichthys molitrix</i>	Class 1	No
round goby	<i>Neogobius melanostomus</i>	Class 1	No
zander	<i>Sander lucioperca</i>	Class 1	No
tench	<i>Tinca tinca</i>	Class 1	No
<b>Mammals</b>			
nutria	<i>Myocastor coypus</i>	Class 1	No
<b>Mollusks</b>			
zebra mussel	<i>Dreissena polymorpha</i>	Class 1	No
New Zealand mudsnail	<i>Potamopyrgus antipodarum</i>	Class 2	No
<b>Parasites/Pathogens</b>			
heterosporosis		Class 1	No
IHN virus		Class 1	No
Asian tapeworm	<i>Bothriocephalus acheilognathi</i>	Class 3	Unknown
whirling disease	<i>Myxobolus cerebralis</i>	Class 2	No
<b>Plants</b>			
flowering rush	<i>Butomus umbellatus</i>	Class 4	Unknown
egeria	<i>Egeria densa</i>	Class 1	No
hydrilla	<i>Hydrilla verticillata</i>	Class 1	No
yellow flag iris	<i>Iris pseudacorus</i>	Class 4	Unknown
purple loosestrife	<i>Lythrum salicaria</i>	Class 4	Yes
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	Class 3	No
curley pondweed	<i>Potamogeton crispus</i>	Class 4	Yes
salt cedar/tamarisk	<i>Tamarix spp.</i>	Class 4	Yes

Source: ANS, 2002.

## Off-Highway Vehicle Use and Travel and Transportation Management

### Off-Highway Vehicle Use

Off-highway vehicle (OHV) use in the planning area primarily consists of riding ATVs, motorcycles, and full-sized trucks and vehicles for pleasure. Participation in these recreational activities varies by season, topography, and vegetative cover. The BLM roads, primitive roads and trails in the planning area provide many opportunities for OHV use that vary from back country to concentrated use areas.

The HiLine District currently manages 124 acres of open, 2,429,930 acres of limited to existing roads, primitive roads and trails, and 7,419 acres of closed designations. The open areas described below have also been designated as intensive use areas, which are generally defined as BLM lands with no restrictions on which OHVs can be driven and where no compelling resource protection needs, conflicts of use, or public safety issues exist to warrant limiting cross-country travel. OHV use throughout the planning area is currently managed in accordance with the 2003 Record of Decision for the OHV EIS (BLM 2003c). This Record of Decision limits motorized travel to existing roads, primitive roads and trails unless designated otherwise in a Land Use Plan. This Record of Decision also prohibits motorized wheeled cross-country travel for big game retrieval but authorizes motorized wheeled cross-country travel to a campsite within 300 feet of roads and trails. Campsite selection must be completed by nonmotorized means and accessed by the most direct route causing the least damage. Any changes to these regulations for a planning area must also be accomplished through the NEPA process.

The following areas and acreages represent current OHV management decisions by OHV category:

#### *Open*

- Fresno OHV Area (84 acres) – open to cross-country motorized use and designated as an intensive use area. This area is located 20 miles north of Havre, near Fresno Reservoir. It contains approximately 84 acres of extremely variable terrain including steep hills suited for ATV and motorcycle hill climbing enthusiasts. Use occurs primarily during the spring and summer months, with peak use in the summer.
- Glasgow OHV Area (40 acres) – open to cross-country motorized use and designated as an intensive use area. This high priority travel management planning area is a 40-acre site immediately north of Glasgow which has been used primarily as an area for ATV and motorcycle use. Use occurs primarily during the spring and summer months, with peak use in the summer.

#### *Limited*

- Bitter Creek WSA (60,701 acres) – limited to identified primitive routes
- Burnt Lodge WSA (13,727 acres) – limited to identified primitive routes
- Remaining BLM land (2,355,502 acres) – limited to existing roads, primitive roads, and trails

#### *Closed*

- Sweet Grass Hills ACEC (7,429 acres) – closed to motorized travel

Overall, a small percentage of the total recreational OHV use in the planning area occurs cross-country, suggesting a low frequency of motorized, wheeled cross-country travel, with most occurring during the fall hunting season. However, even under a low frequency rate this type of travel causes problems.

Increased OHV use has become a significant issue within the planning area because of the potential resource degradation that can result from high levels of use. General estimates of OHV use can be assumed by reviewing the estimates prepared for Montana public lands as part of the Off-Highway Vehicle EIS and Proposed Plan Amendment for Montana, North Dakota, and Portions of South Dakota (BLM 2001b). This report estimated that the number of trucks used in off-

highway applications increased 12% between 1990 and 1998 (BLM 2001b, Table 3.6). ATVs and motorcycles were considered a separate group in this report, and their use increased by 61% from 1990 to 1998.

Demand for access to BLM land is expected to increase. If private landowners discontinue allowing access to their lands for hunting or other recreational purposes, the demand for access will also increase for other private landowners who do allow access. This is due to a number of factors, including public awareness, increased tourism, and increased restrictions by private landowners (e.g., closed roads, changes in ownership). The public is becoming more aware of the public land recreation opportunities existing in the planning area. In addition, visitation is expected to increase as the result of federal, state, and local agency marketing efforts to increase tourism. With an increase in nonlocal users, demand for commercially guided activities (such as hunting, fishing, and sightseeing) will increase. However, demand is expected to increase much faster than the BLM's ability to acquire new access.

Previous recreational use estimates indicated that the projected number of OHVs for Montana by 2005 could be 24,597 for ATVs and motorcycles and 33,727 for trucks. By 2015, it is projected that the number of ATVs and motorcycles will increase to 36,249, and the number of trucks will increase to 36,797 in Montana (BLM 2001b, Table 3.7). The data suggest that OHV use is one of the fastest growing activities in the State of Montana. With the registration of OHVs increasing on an annual basis, it is expected that OHV use will continue to increase on all BLM land throughout Montana.

## Travel and Transportation Management

Transportation system roads provide physical access to BLM, state, private and other federal lands throughout the planning area. Demands for transportation are directly related to the resources found on BLM land. A transportation system provides access for commercial activities (e.g., livestock grazing, timber harvest, mineral development, outfitting and guiding); non-commercial activities and casual use (e.g., OHV use, hunting, fishing, camping, etc.); and for administrative access to manage resources.

BLM roads are currently classified by three different types: collector, local, or resource roads. Collector roads normally provide primary access to large blocks of land, and connect with or are extensions of a public road system. Local roads normally serve a smaller area than collectors and connect to collectors or a public road system. Resource roads are spur roads that provide point access and connect to local, collector, or other roads. Below are the new standardized terms and their descriptions (BLM Technical Note 422). However, the current policy of road classification will remain in place until implementation of travel management planning following the signing of the Record of Decision for this RMP.

- **Road:** A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.
- **Primitive Road:** A linear route managed for four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standard.
- **Trail:** A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

The transportation system includes state, county and BLM roads. Various government entities and individuals acquire rights-of-way from the BLM for those portions of the transportation system roads that cross BLM land. Issuing a right-of-way is based on access needs and resource considerations.

## Road Maintenance

Transportation system roads are currently classified by maintenance intensities. The intensities range from 0 (minimum maintenance) to level 5 (the highest level of maintenance).

The BLM road maintenance terminology also changed according to Technical Note 422. This policy changes maintenance levels to maintenance intensities. Maintenance intensities provide for the appropriate intensity, frequency, and type of maintenance necessary to keep the roads in acceptable condition. Maintenance intensities provide a range of

objectives and standards, from identification for removal through frequent and intensive maintenance. Maintenance intensities range from Level 0 to Level 5; however, the current policy of road maintenance will remain in place until implementation of travel management planning following the signing of the Record of Decision for this RMP.

Roads with the highest public use receive routine maintenance. Using native-surfaced roads during the wet season may contribute to irreparable road and resource damage. Concerns about public safety and the potential for resource and road damage may cause road closures during inclement weather. Each BLM road will have a maintenance intensity associated with it; however, this will be deferred to travel management planning.

State and county system roads are usually constructed and maintained to higher standards than BLM roads and provide access to and through BLM lands. These roads are not maintained by the BLM.

The inventory and management database for linear features, dams, buildings, and recreation and administrative sites is the Facility Asset Management System (FAMS).

Cattle guards, bridges and culverts on the road system are constructed and maintained using available funds. Bridges and major culverts are monitored and maintained as part of the transportation and facilities program and recorded in FAMS.

Roads in the planning area provide access for recreationists, ranchers, resource specialists, and administrators. The planning area has approximately 30,143 miles of currently mapped routes, of which 3,908 miles are on BLM land. Most of the roads are of native surface (dirt, gravel, or sand).

The BLM has compiled the best available GIS data to estimate current miles and locations of roads, primitive roads and trails throughout the planning area to facilitate planning decisions and analysis. However, the planning area has never completed formal transportation planning to determine which roads will be included in a formal transportation system. The HiLine District will complete an inventory of all BLM roads in an effort to depict a baseline road system. Identification of the travel management areas will be included in the RMP, but comprehensive travel management planning will be deferred until implementation following the signing of the Record of Decision for this RMP.

## **Paleontological Resources**

Paleontological resources include any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth (16 U.S.C. 470aaa Sec. 6301(4)). Fossils are found where erosion has exposed the fossil-bearing strata. Most paleontological formations in the planning area, except in the Little Rocky Mountains, date from the Late Cretaceous Period; however, also present are Early Cretaceous Period units such as the Colorado shale. The earliest unit is the Judith River formation, which is highly fossiliferous and contains quantities of dinosaur, crocodilian, amphibian, fish, turtle, marine reptile, bird, invertebrate, plant, and trace fossils. Occasionally, small mammal remains are found. A later unit is the Bearpaw shale, which contains marine reptiles, fish, rare terrestrial dinosaurs, and invertebrate fossils. The latest and most productive deposit is the Hell Creek formation which contains abundant fossils of terrestrial dinosaurs, including those of *Tyrannosaurus rex*. These formations are exposed along the Missouri River valley and on the surface in the southern part of the planning area where glacial till is absent as well as in areas covered with glacial till, such as coulees. Paleozoic invertebrate fossils can be found in all of the planning area mountain ranges. Exposures of the Hell Creek formation along the Missouri River are found in southern Phillips and Valley Counties.

## **Paleontological Localities**

As of March 2007, 621 paleontological locations have been documented in the planning area (Hanna 2007). Of the documented 621 locations, 409 (66%) are vertebrate fossil localities and 212 (34%) are nonvertebrate localities (Hanna 2007). Table 3.35 shows paleontological site distribution by county and includes all ownerships.

**Table 3.35  
Paleontological Site Distribution**

<i>County</i>	<i>Number of Sites</i>	<i>Percentage</i>
Blaine	39	6.3%
Chouteau	7	1.1%
Glacier	4	<1%
Hill	417	67.1%
Liberty	32	5.1%
Phillips	43	6.9%
Toole	39	6.3%
Valley	40	6.4%

Source: Hanna, 2007



Paleontological Locality

Photo by Craig Miller

The majority of the paleontological sites occur in Hill County (67.1%). It should be noted that while Phillips County does not have the same level of site density as Hill County, Phillips County has been the location of several nationally and internationally significant paleontological finds (e.g., Leonardo, the mummified dinosaur). Further, Phillips County has more significant paleontological sites on public land. The majority of the paleontological sites in the planning area are located on private surface ownership.

### Paleontological Classifications

Occurrences of paleontological resources are closely related to the geologic units that contain them, and the potential for finding important paleontological resources can be broadly predicted by the presence of the pertinent geologic units at or near the surface. Therefore, geologic mapping can be used as a proxy for assessing the potential occurrence of important paleontological resources. The Potential Fossil Yield Classification (PFYC) system adopted by the BLM in 2008 uses geologic units as base data. The PFYC system provides a uniform tool to assess potential occurrences of paleontological resources and evaluate possible impacts.

Under the PFYC system, geologic units are classified based on the relative abundance of vertebrate fossils or uncommon invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is best applied at the geologic formation or member level. It is not intended to be an assessment of whether important fossils are known to occur occasionally in these units (i.e. a few important fossils or localities widely scattered throughout a formation does not necessarily indicate a higher class), nor is it intended to be applied to specific sites or areas. The classification system is intended to provide baseline guidance to assessing and mitigating impacts to paleontological resources. In many situations, the classification should be an intermediate step in the analysis, and should be used to assess additional mitigation needs. The PFYC classes are defined in detail below:

**Class 1:** Units unlikely to contain recognizable fossil remains. This includes units that are igneous or metamorphic in origin (but excludes tuffs), as well as units that are Precambrian in age or older. Management concern for paleontological resources in *Class 1* units is negligible or not applicable. No assessment or mitigation is needed except in very rare circumstances. The occurrence of significant fossils in *Class 1* units is non-existent or extremely rare.

**Class 2:** Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. This includes units in which vertebrate or significant nonvertebrate fossils are unknown or very rare, units that are younger than 10,000 years before present, units that are Aeolian in origin, and units which exhibit significant physical changes in rock (i.e. compaction, cementation, mineral replacement). The potential for impacting vertebrate fossils or uncommon invertebrate or plant fossils is low. Management concern for paleontological resources is low, and management actions are not likely to be needed. Localities containing important resources may exist, but would be rare and would not influence the classification.

**Class 3:** Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. These units are often marine in origin with sporadic known occurrences of vertebrate fossils. Vertebrate fossils and uncommon nonvertebrate fossils are known to occur inconsistently and predictability is known to be low. Two subsets to *Class 3* units are described below:

**Class 3a** includes a broad range of potential impacts. Geologic units of unknown potential, as well as units of moderate or infrequent fossil occurrence are included. Assessment and mitigation efforts also include a broad range of options. Surface-disturbing activities will require sufficient assessment to determine whether significant fossil resources occur in the area of a proposed action, and whether the action could affect the paleontological resources.

**Class 3b** includes units that are poorly studied and/or poorly documented, so that the potential yield cannot be assigned without ground reconnaissance. Management concern for paleontological resources in these units is moderate, or cannot be determined from existing data. Surface-disturbing activities may require field assessment to determine a further course of action.

**Class 4:** Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant nonvertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface-disturbing activities may adversely affect paleontological resources in many cases.

**Class 5:** Highly fossiliferous geologic units that regularly and predictably produce vertebrate fossils or scientifically significant nonvertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation.

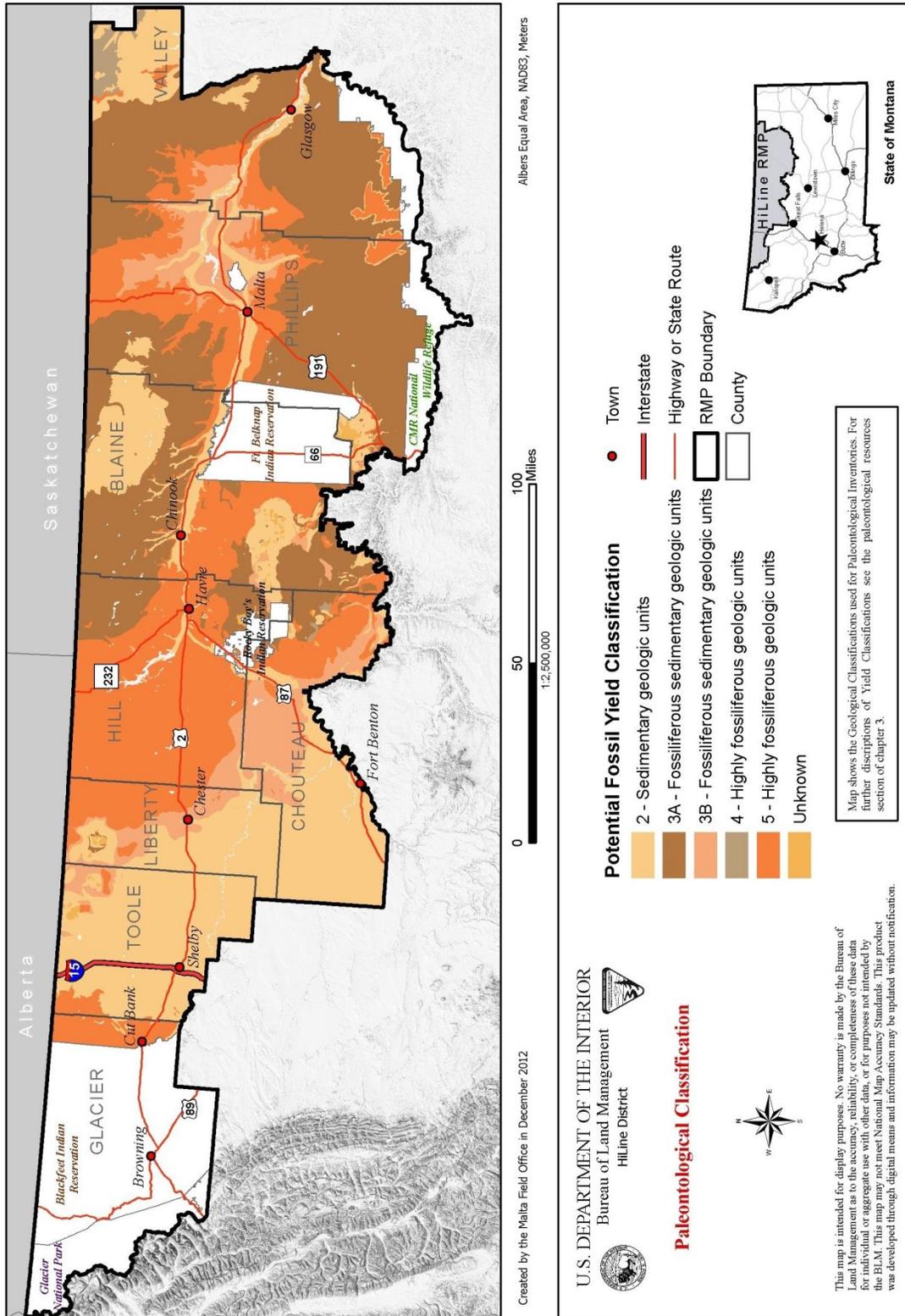
Table 3.36 and Figure 3.11 show the acres and areas for each geologic class described above.

<i>Geologic Class</i>	<i>Paleontological Potential</i>	<i>BLM Surface Only</i>	<i>Percentage of Total BLM Land in the Planning Area</i>
2	Low	123,958	5%
2	Moderate	42,666	25%
3a	Moderate	1,340,385	55%
3b	Moderate	103,255	4%
4	High	716	<1%
5	High	371,554	15%

Based on the table above, the majority of BLM surface acres fall within geologic *Class 3* and *Class 5*. Projects proposed in *Class 4* and *Class 5* geologic units with the potential to impact significant resources will be subject to paleontological inventory. Projects proposed in *Class 3* geologic units may also be subject to paleontological inventory depending upon the topography in the project area.

Professional paleontologists conducting research or assessment and mitigation are regulated through the permit process. The BLM issues, on average, one or two permits a year specifically for the planning area. Approximately 18 statewide research permits allow surface collecting/reconnaissance and include the planning area. The BLM also issues approximately ten consulting permits annually in Montana. These are statewide permits which include the planning area.

**Figure 3.11  
Paleontological Classifications**



Recreational fossil collecting of common invertebrates, plants and petrified wood is allowed on most BLM land; however, some locations/areas may be closed to casual collection. Amateur fossil collectors and hobbyists may collect reasonable amounts of common invertebrate and plant fossils on public lands. The number of people involved in this activity is unknown. The HiLine District processes approximately six inquiries a year regarding fossil and/or rock collecting. Further interest in fossil collection is demonstrated by the existence of privately owned paleontological guiding businesses that provide recreationists the opportunity to excavate fossil remains on private land. In addition, hikers, mountain bikers, and other outdoor enthusiasts sometimes accidentally discover fossil remains. Some of these discoveries are passed on to the appropriate agencies, but some are not. Many important paleontological discoveries have been and will continue to be made by amateur or accidental paleontologists, but the number of such discoveries is also unknown.

Fossil theft and vandalism is an issue within the planning area. Public interest in fossils and the commercial value of fossils have increased significantly in recent years. As public interest increases, the monetary value of fossils also rises; federal land management agencies (including the BLM) are under increasing pressure to both protect scientifically significant fossil resources and to ensure their appropriate availability to the general public. Escalating commercial values of fossils also means that increasingly, fossils on federal lands are subject to theft and vandalism. These crimes reduce scientific and public access to scientifically significant and instructive fossils and destroy the contextual information critical for interpreting the fossils. As described in Title 43 CFR Subparts 8365.1-5 and 8360.0-7, willful disturbance, removal and destruction of scientific resources or natural objects on federal lands is illegal and there are penalties for such violations. Often, the most pronounced damage is the loss of the context and other significant scientific data, the worth of which is difficult to evaluate in monetary terms. With the passage of the Paleontological Resources Preservation Act in 2009 (16 U.S.C. 470aaa et seq.), paleontological theft has penalties under federal law.

## **Public Safety**

### **Abandoned Mine Lands**

The Abandoned Mine Lands (AML) program is tasked with identifying and mitigating physical and environmental hazards on lands affected by mining practices. Typical hazardous material issues within the planning area are associated with past mining activities, illegal dumping, and accidental material releases from transport vehicles.

Not all AML sites include conditions that are hazardous to humans or the environment. However, the physical hazards that may be encountered at AML sites include basic trip-and-fall hazards from debris, obscure mine shafts, dilapidated mine buildings and equipment, harmful chemicals or contaminated soils, unused explosives, and open mine adits with oxygen-depleted or toxic environments. The potential for injuries and deaths from these hazards increases with the growth of the western population and recreational use of public lands. Therefore, sites easily accessed by the public are given first priority for implementation of mitigation or closure measures.

Hazardous conditions at AML sites can include both on-site and off-site impacts. Mine wastes on AML sites may affect or preclude the growth of vegetation and give rise to fugitive dust with hazardous heavy metal constituents when disturbed. Water quality issues may come from the direct flow of water laden with heavy metals out of mine adits, or leaching from mined materials contributing undesirable heavy metal constituents to nearby stream and river subbasins. The heap leach process uses cyanide to remove gold or other desirable metals from mined materials. Heavy metal constituents can adversely affect many aquatic species and also may adversely affect avian and mammalian species around such mine sites and drainages via direct and indirect routes of intake. The metals associated with mining activities in the planning area are primarily gold, silver, lead, zinc, copper, and arsenic.

### **Zortman/Landusky Mine**

The abandoned Zortman/Landusky Mines in the Little Rocky Mountains consists of two mine sites. The mines are near the towns of Zortman and Landusky and are located on a mixture of patented mining claims (private lands) and BLM lands. Pegasus Gold Corporation and Zortman Mining, Inc. operated the mines from 1979 through 1998, when the operator filed for bankruptcy protection and proceeded with closure of the mines.

An Environmental Impact Statement was jointly prepared with MDEQ to review and analyze reclamation plans for the site, and a Record of Decision, issued in May 2002, selected a final mine reclamation plan (BLM and MDEQ 2002). The reclamation was estimated to cost more than the funding available from reclamation bonds posted by the company; however, with supplemental funding from the BLM and the State of Montana, the reclamation earthwork was completed in May 2005, but a funding shortfall remained for future water treatment.

Upon conclusion of the bankruptcy process, the BLM invoked its CERCLA authority in June 2004 when the BLM issued an Action Memorandum for Zortman and Landusky Mines Time-Critical Removal (BLM 2004c) in order to continue water treatment in the absence of a mine operator. The BLM is the lead federal agency for conducting removal actions at the site under its CERCLA authority.

An Engineering Evaluation and Cost Analysis (EE/CA) (BLM 2006d) and accompanying action memorandum (BLM 2006e) were completed in September 2006. The purpose of the EE/CA was to reassess the existing and anticipated water quality site conditions, evaluate the performance of the current removal actions, and to assess the costs and amounts of funding available to continue or where needed, improve the water collection and treatment practices. The EE/CA was the next step in continuing removal actions needed to protect public health, welfare, or the environment. It addressed the management of Operable Units OU1, OU2, and OU3 which treat mine drainage, treat leach pad waters, and reclaim reactive mine waste units, respectively. The EE/CA includes an assessment of the potential human and ecological harm from the water currently being released from the site, or that would be released if any of the capture or treatment systems, or reclaimed waste units, were modified. The present capture and treatment systems are optimal and no large-scale changes in water treatment technology are warranted. The CERCLA site continues to be monitored for reclamation and remediation success.

One issue of relatively recent concern is contamination from some iron-rich seeps that occur in Swift Gulch, north of the Landusky Mine. The water quality from these seeps has declined since the mine closure in 1998. Ongoing water treatment facility construction and analysis within the gulch is the current focus of the DEQ's technical working group with representation from the BLM and the Fort Belknap tribes.

On October 5, 2000, the BLM withdrew 3,505 acres in the Zortman/Landusky mine reclamation area from location and entry under the Mining Law to facilitate reclamation of the mines, including long-term water treatment. A five-year extension of the withdrawal was granted on October 5, 2005, and a second extension was granted effective October 5, 2010.

## **Hazard Class Dams**

The BLM has a designated Safety of Dams Coordinator to ensure hazard rated dams are properly managed. Condition assessments are performed as required by the latest version of the BLM 9177 (Dam Safety) Manual and associated handbooks. Emergency Action Plans that provide for public safety have been completed and are updated annually. The Emergency Action Plans are available for public review in the Montana State Office, the BLM field office in which each dam is located, and in county emergency services offices.

The planning area has 134 hazard rated dams, which means they have a minimum 25 foot hydraulic height or impound 50 acre-feet or more. This total includes 131 dams rated low hazard, of which 82 are in the Glasgow Field Office, 14 are in the Havre Field Office, and 35 are in the Malta Field Office. Three dams are rated as high hazard: Anita Reservoir in Blaine County, BR-12 Reservoir in Blaine County, and PR-19 Reservoir in Phillips County.

## **Hazardous Materials**

To protect human health and the environment and comply with applicable laws and regulations, the BLM Hazard Management and Resource Restoration Program has the following objectives:

1. Identify and control imminent hazards or threats to human health and the environment from hazardous substance releases on public lands.
2. Promote working partnerships with states, counties, communities, other federal agencies, and the private sector to prevent pollution and minimize hazardous waste on public lands.

3. Provide hazardous materials management training to BLM employees and educate public land users concerning laws, rules, and standards.
4. Require potentially responsible parties to undertake response actions and to pay their fair share or face cost recovery.
5. Encourage public collaboration in environmental decision making.
6. Inventory, assess, and manage the cleanup of hazardous substance release sites on public lands that present a potential risk to human health and the environment and promote healthy ecosystems.
7. Ensure that solid and hazardous waste treatment, storage, and disposal facilities that might affect public lands are properly located, designed, and constructed, consistent with the law.
8. Reduce hazardous waste produced by BLM activities and from authorized uses of public lands through waste minimization programs that include recycling, reuse, substitution, and other innovative, safe, and cost-effective methods to prevent pollution.
9. Ensure that authorized activities on public lands comply with applicable federal, state, and local laws, regulations, policies, guidance, and procedures.
10. Ensure appropriate review of authorized activities and application of effective management controls to correct weaknesses.

As the demand for oil and gas increases, so does the potential for hazardous materials spills from well drilling and development, pipelines, compressor stations, service vehicles, and other associated activities. Like many industries, oil and gas operators use specific chemicals in their drilling, recovery, and manufacturing processes including hydraulic fracturing. Although industrial operations are regulated to minimize any potential spills, accidents will likely never be completely eliminated. Concerns related to the use of chemicals have been topics of conversation in regard to oil and gas development based upon potential human health and environmental health impacts. The Hazard Management and Resource Restoration Program will continue to manage and respond to foreseeable hazards on BLM-administered lands, emphasizing protection of public health, safety, and the environment; waste minimization; and compliance with all laws, policies, and regulations.

Hazardous materials management also involves the prevention of illegal hazardous material actions on BLM lands; the regulation, authorization and proper use of legal hazardous materials on BLM lands; and timely, safe responses to hazardous materials incidents on BLM lands.

Some dumping occurs on BLM lands in the planning area. Much of the activity is intentional, small quantity waste dumping which may include hazardous substances, household waste, petroleum products, solid waste, and agricultural materials. Dumping may occur anywhere on BLM lands, but is generally concentrated around recreation areas and along roadways. These dumping incidents may not fit the specific category of hazardous waste dumping, but the dumped materials are usually screened for hazardous components, then all of the materials are removed and disposed of properly. Instances of significant or hazardous dumping in the planning area are fairly limited, which is attributed to the relatively low population density around the BLM lands.

BLM Law Enforcement Rangers have responded to a number of vehicular accidents that involved the accidental release of hazardous materials or petroleum products from transport vehicles. The hazardous materials management program may become involved with a particular response action or cleanup when the release affects BLM lands.

In recent years, the BLM has responded to a number of dumped methamphetamine lab or related drug wastes. Methamphetamine drug lab wastes frequently include highly toxic chemicals, flammable materials, and potentially explosive materials which present a direct health and safety hazard to individuals who may inadvertently come across them and also present a hazard to wildlife. Discarded drug paraphernalia is also a concern due to potential skin puncture/disease transmission hazards.

Hazardous materials may legitimately be brought onto BLM lands for weed control or resource development. The types of hazardous materials used for weed and insect control include pesticides (herbicides and insecticides). The general types of hazardous materials that may be used include petroleum products (fuels and lubricants), solvents, surfactants, paints, explosives, batteries, acids, gases and antifreeze.

## Recreation

The most popular outdoor recreation activities statewide for Montana residents are (in decreasing order) walking, wildlife watching, hiking, biking, swimming, picnicking, nature photography, fishing, motorcycling, hunting, camping, golfing, horseback riding, and boating (MFWP 2003). Most recreation users participate in dispersed recreation activities, either individually or in small groups. While Montana resident and non-resident recreationists generally participate in the same outdoor activities, the top non-resident recreational activities are wildlife watching, day hiking, and picnicking.

Large tracts of BLM land in the planning area provide a wide variety of seasonal recreation opportunities for both residents and non-residents. Hunting dominates the scene in the fall, with snowmobiling, cross-country skiing, and ice fishing occurring during the winter. Springtime activities include fishing, sightseeing, and photography. Camping, picnicking, driving for pleasure, sightseeing, fishing, hiking, boating, dispersed OHV use, and varmint hunting dominate recreation during the summer months. OHV use is an important consideration at many of the recreation sites. Overall, BLM land supports some type of recreational activity during all times of the year with the heaviest use occurring during fall hunting seasons.

The Camp Creek and Montana Gulch campgrounds in the Little Rocky Mountains are the only two fee recreation sites in the planning area. Several smaller developed recreation sites are distributed throughout the area that attract non-resident tourists and provide recreation for local residents as well. Many fishery reservoirs offer trout and/or bass while some reservoirs have northern pike. Winter months provide opportunities for ice fishing. Access to most recreation facilities and areas is by the primary transportation corridors, including U.S. Highways 2 and 191, and various state highways.

To a limited extent, BLM lands provide access to the Milk and Missouri rivers where fishermen can catch catfish, walleye, sauger, sturgeon, paddlefish, pike and bass, and hunters can hunt deer, elk, pronghorn, waterfowl, and upland game birds. However, most of the Milk River shoreline is privately owned which limits access, especially for hunting. MFWP provides some marked fishing access sites where legal streamside access is available along the river.

Montana's population in the western and southcentral counties is increasing, while most of the eastern and northern counties lost population during the 1990s. These unequal changes have caused increased demand for recreation facilities in high growth areas and decreased ability to pay for existing facilities in areas that have lost residents. Further, Montana residents are aging and wages are low, so accessibility and affordability are becoming important facets of outdoor recreation planning. As the population ages, there is likely to be less demand for strenuous outdoor recreation activities and more demand for activities like walking, golfing, fishing, and motorized recreation.

Tourism is an important component of Montana's economy, and it creates a significant demand for outdoor recreation facilities. State and regional tourism marketing efforts are directed at attracting higher value, lower impact non-resident visitors to maximize tourism revenues while minimizing the impact of tourism on Montanans. Since demand for both motorized and nonmotorized recreation access will likely continue to increase, facilities will be needed to address this demand effectively while simultaneously managing Montana's natural and cultural assets in a sustainable manner (MFWP 2003).

Although visitor use information is lacking or incomplete for some areas, BLM lands in the planning area received a minimum of 54,000 recreation visits in 2012. The major recreation activity categories in the area, in order of approximate total use percentage, are shown in Table 3.37.



Montana Gulch Campground

Photo by Kathy Tribby

<i>Activity</i>	<i>Percentage of Total Use</i>
Hunting	42%
Sightseeing, picnicking, watching wildlife	16%
Fishing	13%
Driving for pleasure	11%
Camping	9%
Hiking, horseback riding, bicycling	3%
Winter sports	1%
Off-road vehicle activities	3%
Snowmobiling	1%
Water sports	1%

Source: BLM Recreation Management Information System (RMIS), 2012.

## Recreation Management Areas

BLM lands are classified into one of three Recreation Management Area categories, as follows:

### Special Recreation Management Areas

Special Recreation Management Areas (SRMAs) have recreational values with development potential and need more intensive recreation management because outdoor recreation is a high priority, thus requiring a greater recreation investment. Major investments in facilities within Special Recreation Management Areas can be excluded where the BLM's strategy is to target demonstrated, undeveloped, recreation-tourism market demand. Here, recreation management actions are geared toward meeting primary recreation-tourism market demands to sustain distinctive recreation setting characteristics. However, major investments in visitor services can be authorized both to sustain those distinctive setting characteristics and to maintain visitor freedom to choose where to go and what to do; all in response to demonstrated demand for undeveloped recreation.

The planning area presently has five Special Recreation Management Areas (North Missouri Breaks, Sweet Grass Hills, South Phillips, Little Rocky Mountains, and South Valley) as shown in the Recreation section of Chapter 2 and on Map 2.9.

### Extensive Recreation Management Areas

Extensive Recreation Management Areas (ERMAs) also have recreational values with development potential but require less intensive recreation management than Special Recreation Management Areas. Management of these areas focuses on supporting and sustaining the principal recreation activities and the associated qualities and conditions of the area, but these activities are commensurate with management of other resources and resource uses. Recreational uses that are not compatible with other resources may be restricted or constrained to achieve the interdisciplinary objectives of the area.

The planning area presently has three Extensive Recreation Management Areas (Havre, Phillips and Valley) as shown in the Recreation section of Chapter 2 and on Map 2.9.

### Public Lands Not Designated as Recreation Management Areas

Any BLM lands not designated as a Special Recreation Management area or an Extensive Recreation Management Area are Lands Not Designated as Recreation Management Areas (LND). This category applies to most of the BLM lands that are managed for traditional dispersed recreational use with little or no facility development.

## Special Recreation Permits

The Code of Federal Regulations (CFR) is the legal authority that allows the BLM to manage the permit program under Section 43 CFR Parts 2930, et al. “Commercial use” is defined as the recreational use of the public lands for business or financial gain. When any permittee, employee, or agent of a permittee, operator or participant makes or attempts to make a profit, salary, increase his business or financial standing, or supports in any part, other programs or activities from amounts received from or for services rendered to customers or participants in the permitted activity, as a result of having the SRP, the use will be considered commercial.

Under the authority of the Federal Lands Recreation Enhancement Act (FLREA) the BLM utilizes the Special Recreation Permit (SRP) system to satisfy recreation demand within allowable use levels in an equitable, safe and enjoyable manner while minimizing resource impacts and user conflicts. Fees for SRPs are intended to recover at least part of the cost of issuing and administering the permit plus provide a fair return to the government for the opportunity to make a profit while using BLM-administered public lands.

BLM Managers have discretion over whether to issue a Special Recreation Permit. Decisions are based on the following factors to the extent that they are relevant:

- a) Conformance with laws and land use plans,
- b) Public safety,
- c) Conflicts with other uses,
- d) Resource protection,
- e) The public interest served,
- f) Whether in the past the applicant complied with the terms of a permit or other authorization from the BLM and other agencies, and
- g) Such other information that BLM finds appropriate.

The BLM issues SRPs for specific recreational uses of BLM land and related waters. The permits are a means to manage visitor use, protect natural and cultural resources, and serve as a mechanism to accommodate commercial recreational uses. Four types of use require permits: commercial, competitive, organized groups/events, and individual or group use in special areas. Most SRPs within the planning area are issued for commercial outfitting and guiding to hunt big game, but occasionally SRPs are issued for photography, wildlife viewing, horseback trips, fishing and organized group events.

The HiLine District currently administers approximately 14 ongoing commercial SRPs for outfitted upland game bird and big game hunting as well as fishing. Outfitting and guiding is one of the uses permitted by the BLM to help satisfy public demand for recreational use of BLM land. Some outfitters and guides are ranchers or farmers who provide recreation services as a means of economic diversification. Others operate seasonal businesses as outfitters and employ some local residents as guides. These seasonal businesses, operating primarily between September and December, are permitted to lead a variety of activities, including bird, upland bird, waterfowl, prairie dog, deer, elk, and pronghorn hunting. A few permitted outfitters also provide visitors an opportunity for horseback riding and other backcountry recreation activities. In recent years, there has been an increase in applications for short-term or one-year SRPs to hold special events or organized group events on BLM land. Special events include activities such as organized trail rides and bow target shoots. Organized group SRPs are mainly related to eco-tourism activities such as bird-watching tours, guided bus tours, and guided nature hikes. These activities normally take place during the spring and summer months.

## Renewable Energy Resources

Renewable energy includes biomass, geothermal, solar power, and wind. As demand has increased for clean and viable energy to power the nation, consideration of renewable energy sources available on BLM lands has come to the forefront of land management planning. In cooperation with the National Renewable Energy Laboratory (NREL), the BLM assessed renewable energy resources on BLM, Bureau of Indian Affairs, and U.S. Forest Service lands in the western United States (BLM and DOE 2003).

Developing renewable energy projects depends on market trends and market value. The demand for renewable energy is illustrated by development projects throughout the west on public and private lands. The importance of renewable energy sources increases as nonrenewable energy prices increase and as the need grows for more and cleaner energy sources.

The BLM has received inquiries from several individuals and companies regarding renewable energy projects. The primary limiting factors in site selection include access to power transmission interconnects, acquisition of permits, and power purchase agreements between the producer and owner of the powerlines.

## Biomass

Biomass technology creates energy from plants and plant-derived materials. The BLM/NREL study (BLM and DOE 2003) did not identify the planning area as one of the top 25 BLM potential areas for biomass resources. To date, no proposal has been submitted to the BLM for developing biomass energy resources on BLM lands in the planning area.

## Geothermal Resources

Geothermal energy is energy that comes from heat stored within the earth. The energy is generated within the earth's core, about 4,000 miles below the surface, and is created by the radioactive decay of minerals, a process that occurs in all rocks. In certain states, Nevada is a good example, the BLM administers geothermal leases that involve public land. Geothermal resources found on federal mineral estate are considered leasable minerals. As such, the same laws and regulations governing other leasable minerals cover exploration and development of geothermal resources. Use of low temperature geothermal resources is most common in warm-water heating systems in homes and businesses. Although not yet widespread, low temperature geothermal use is increasing as prices for other types of energy increase. Due to a variety of geologic processes, shallow geothermal resources underlie substantial portions of many western states, including lands in the planning area. However, there is presently a low level of interest in developing Montana's federally administered geothermal resources.

Geothermal resources are rated by temperature:

- low temperature – less than 194°F.
- moderate temperature – 194-302°F.
- high temperature – greater than 302°F.

The State of Montana has more than 50 geothermal areas and at least 15 high temperature sites. High temperature areas in western Montana are located near Helena, Bozeman, Ennis, Butte, Boulder and White Sulphur Springs. Seven locations have surface temperatures above 149°F. and 20 locations have surface temperatures above 110°F. The estimated deep reservoir temperatures for some Montana sites are over 350°F.

Four principal Montana geothermal sites are located in the planning area at Landusky, Lodgepole, Mountain View, and Sleeping Buffalo.

The Little Rocky Mountains area contains considerable warm water (average 75°F.) derived from the Madison Group at surface or shallow depths. Drilling in the surrounding area may increase the available flow to 100,000-250,000 L/min (Sonderegger and Bergantino 1981). The waters at the Lodgepole spring are warm enough for significant direct heating (86°F.), but no current commercial development of the resource is occurring. The springs at Landusky have a temperature of 69°F. and a flow rate of 628 gpm.

The Mountain View geothermal site, a well located in western Toole County, has a temperature of 114.5°F. The depth and flow information are unavailable for this site.

The Sleeping Buffalo "springs" were discovered by a 1928 oil well which intersected pressurized hot water and gas. This well was cased and left in place, and the 108°F. water (with gas) flowed to the surface at 700 gallons per minute. A large resort complex was built around the well in the 1930s and became a popular destination resort. A new well,

“Legion Health Plunge 2A,” was drilled in 1958 to a depth of 3,200 feet. This well (API 25071-06384) is completed in Mission Canyon Limestone.

## Solar Power

Solar energy on BLM land was studied in a six-state area (Arizona, California, Colorado, Nevada, New Mexico, and Utah). The BLM and U.S. Department of Energy released a Final Programmatic EIS for the six-state area in July 2012 (BLM and DOE 2012), and the BLM issued a Record of Decision amending land use plans in those six states in October 2012. The study includes BLM lands with solar insolation levels greater than 6.5 kWh/m<sup>2</sup>/day and slopes of less than 5%. Solar insolation levels in the planning area range from about 4.13 kWh/m<sup>2</sup>/day to 5.02 kWh/m<sup>2</sup>/day.

### Solar Insolation

Insolation is a measure of solar radiation energy received on a given surface area in a given time. It is commonly expressed as average irradiance in watts per square meter (W/m<sup>2</sup>) or kilowatt-hours per square meter per day (kWh/m<sup>2</sup>/day).

## Concentrating Solar Power

Concentrating Solar Power (CSP) technology uses sunlight concentrated on a single point to generate power. The BLM/NREL study (BLM and DOE 2003) indicates that the potential for this type of renewable energy lies primarily in states to the south and southwest of Montana. No BLM lands within the planning area were identified as having potential for this type of energy source. To date, no proposal has been submitted to the BLM for developing CSP facilities on BLM lands in the planning area.

## Photovoltaics

Photovoltaic (PV) technology makes use of semiconductors in PV panels (modules) to convert sunlight directly into electricity. The BLM/NREL study (BLM and DOE 2003) did not identify the planning area as one of the top 25 potential areas for PV potential. To date, no proposal has been submitted to the BLM for developing PV facilities on BLM lands in the planning area.

## Wind

The BLM/NREL study (BLM and DOE 2003) did not identify the planning area as one of the top 25 potential areas for wind energy potential; however, due to the increasing interest in wind energy potential in the west and the associated applications for wind energy on BLM lands, the BLM prepared a Final Programmatic EIS on Wind-Energy Development on BLM-Administered Lands (BLM 2005). The Programmatic EIS categorized BLM lands into areas having low, moderate, or high potential for wind energy development from 2005 through 2025 on the basis of their wind power classification. Wind power classes range from 1 (lowest) to 7 (highest). Wind resources in Class 3 and higher could be developed economically with current technology over the next 20 years.

The seven wind power classes are further grouped into three distinct levels: high, moderate and low potential for wind power resources (Table 3.38 and Appendix O). Included in the low potential are the poor and marginal wind power classes; the fair wind power class is included in the moderate potential; and good, excellent, outstanding and superb are grouped within the high potential category. The percent of high potential acres managed by the BLM is 6% of the entire planning area (366,000 acres); 22% of moderate potential is managed by the BLM (1,841,000 acres); and 16% of low potential is managed by the BLM (235,000 acres).

The Western Renewable Energy Zones – Phase 1 Report identified two qualified resource areas (QRAs) in the planning area (WGA and DOE 2009). Qualified resource areas represent those lands with the greatest energy density within a contiguous area. The QRAs are located in the western and central part of the planning area (Appendix O). One of the QRAs (MT\_NW) includes the Sweet Grass Hills and Kevin Rim ACECs and areas west and southwest of the ACECs. The other QRA (MT\_NE) includes BLM land in the Little Rocky Mountains and areas northwest and southwest of the mountains. The QRAs include about 3,052,200 acres, of which 1,723,000 acres (56%) are within the planning area and about 31,000 acres (1%) are BLM land (Table 3.39).

<i>Wind Power Class</i>	<i>Resource Potential (Utility Scale)</i>	<i>50m Wind Power Density (W/m<sup>2</sup>)</i>	<i>Development Potential (20 Years)</i>	<i>Percent of Planning Area (All Ownerships)</i>	<i>Percent of Development Potential that is BLM Surface Ownership</i>
1	Poor	0-200	Low	9%	16%
2	Marginal	200-300			
3	Fair	300-400	Moderate	52%	22%
4	Good	400-500	High	39%	6%
5	Excellent	500-600			
6	Outstanding	600-800			
7	Superb	>800			

<i>Name</i>	<i>Total Area</i>	<i>Planning Area</i>	<i>BLM Land</i>
MT_NW	2,001,870	1,092,856	15,999
MT_NE	1,050,316	630,150	15,125
Total	3,052,186	1,723,006	31,123

Approximately 2,248,000 acres of BLM surface lands are open to commercial wind energy development without use limitations, and approximately 189,000 acres are subject to exclusion limitations. The wind energy development potential across the HiLine planning area is shown in Table 3.40.

<i>Wind Potential</i>	<i>Total Surface (acres)</i>	<i>BLM Surface (acres)</i>	<i>% BLM</i>
High	6,145,000	365,000	6%
Moderate	8,275,000	1,839,000	22%
Low	1,452,000	233,000	16%
Total	15,872,000	2,437,000	15%

Wind energy development in the proximity of the Interstate 15 corridor, where a new transmission line is being constructed to make the produced wind energy available for the power grid, is currently limited to isolated development on private lands. However, the potential does exist for increased commercial wind energy development, including facilities located on BLM lands. Currently, the BLM does not have any pending authorizations for wind site testing and monitoring or wind farms. The Programmatic EIS (BLM 2005) will be used by the BLM when considering development of commercial wind energy projects on BLM lands in the planning area.

## Social

This section discusses the social conditions in the planning area, with a particular emphasis on the counties where the majority of the BLM surface and subsurface acreage is located. The planning area encompasses over 2.4 million acres in Blaine, Chouteau, Glacier, Hill, Liberty, Phillips, Toole and Valley Counties. The majority of the surface and subsurface acreage is located in the eastern part of the planning area in Blaine, Phillips and Valley Counties. The information presented in this section complements the historic overview discussion in the Cultural Resources section and the information provided in the Economics section. Data for the planning area as a whole and the State of Montana are included for comparison purposes. This section is organized in the following manner: (1) social trends that have and are occurring in the study area; (2) social and demographic data on study area counties; (3) stakeholders and stakeholder values; and (4) environmental justice. A discussion concerning protection of human health and the environment is included in the Public Safety section, under Hazardous Materials.

### Social Trends

This section focuses on social trends and attitudes that affect BLM land management. One trend is the increasing popularity of BLM land for recreation. A comprehensive report on recreation by Cordell, et al. (1999) indicates demand in the Rocky Mountain West for recreation activities will increase substantially by the year 2020 with non-consumptive wildlife activities, sightseeing and visiting historic places having the greatest increases. Another trend is a concern over maintaining access to BLM land if access through private land is required to reach the BLM land. In addition, the general public's loss of access to some private land is putting more pressure on the BLM land. These changes are linked to the pursuit of a quality recreation experience and occur for a variety of reasons: lands are purchased for recreation or other reasons and are closed to others; lands are leased to outfitters for exclusive use; and private lands and roads are closed to avoid problems with safety, fire, fences, weeds, litter, and open gates.

Another trend that is occurring in the nation and Montana is the aging of the population. In 2010, the population of individuals in the planning area counties that were 65 and older ranged from 10.6 % in Glacier County to over 20% in Phillips and Valley Counties. For the state as a whole, the percentage of population 65 or older is expected to increase to 18.7% by 2020 (NPA Data Services 2008). The percentage of people 65 or older is actually increasing more rapidly in states like Montana because young people are more likely to leave for advanced education, military service and employment opportunities not available locally.

Changes in the management of BLM land are just one aspect of a broader debate on environmental and resource management that is occurring locally, nationally and globally. Social values for lands and natural resources can take many forms such as commodity, amenity, environmental quality, ecological recreation, and spiritual. While the commodity value has been prevalent in the past, a study examining public attitudes toward ecosystem management in the United States found "generally favorable attitudes toward ecosystem management (defined as maintaining and ensuring sustainability) among the general public" (Bengston, et al. 2001).

In the rural West, in places where land use has been relatively unrestricted, concern is being expressed by some individuals and groups regarding the control and management of BLM land. People with these concerns feel that change in BLM land management is being driven by government officials and environmental advocacy groups who do not have a true understanding of the lands or the people living nearby who depend upon these lands for their livelihood and recreation. Of particular concern is the loss of uses of the land such as hardrock mining, livestock grazing, and off-highway vehicle use. People with these concerns seek to balance what they consider to be environmental extremism with economic and human concerns. They may feel that local elected officials who deal with their problems on a daily basis are better equipped to make decisions about BLM land.

There has been increasing interest in and discussion about bison and possible bison reintroduction across the State of Montana. A diversity of viewpoints about this issue range from strong support to strong opposition as documented in the scoping comments for the Statewide Bison Management Plan Environmental Impact Statement (MFWP 2012a). During the MFWP scoping phase the primary issues and concerns included:

- bison distribution and movement;
- population control and management;

- fencing and confinement concerns;
- public safety concerns regarding human-bison interactions and vehicle-bison collisions;
- private property damage of cropland and fences as well as concern over whether wild bison on private land could limit owner's private property rights;
- transmission of disease between bison, livestock and other wildlife;
- hunting of bison and impact that bison may have on hunting of other species;
- genetic purity of wild bison;
- legal status and classification of wild bison;
- how grazing leases and other public land uses may be impacted if wild bison are restored;
- ecological impacts – both positive and negative;
- economic and community impacts such as possible tourism and hunting benefits and/or loss of current agricultural revenue; and
- role of tribes, federal government and other agencies and organizations in management and program costs.

The above list is meant to help show the range of issues that arose during the scoping process. This does not necessarily relay the wide variety of values and viewpoints as to the individuals/groups that may support or not support bison reintroduction. Based upon Montana Fish, Wildlife and Parks scoping comments (MFWP 2012a), some of the views and values associated with bison management and bison reintroduction include: the view that there is a sacredness to wild bison; protection of wildlife and wildlife habitat should be a priority for public lands; bison should be valued as a native wildlife species in Montana; value of agriculture and the potential negative economic impacts of bison reintroduction should be recognized; as well as prioritizing private property rights over bison reintroduction. Closer to the study area, similar comments were received during scoping for the Charles M. Russell National Wildlife Refuge Comprehensive Conservation Plan (USFWS 2012). The range of views, values, and issues of concern help highlight the complexity surrounding bison management and bison reintroduction across the State of Montana. While this discussion is at a statewide scale, similar concerns and views were noted in the Malta Resource Management Plan Scoping Summary Report (BLM 2007a). This discussion on bison management and bison reintroduction provides some of the context for this study area in terms of highlighting the range of views and values present including support for wildlife habitat conservation, desire for a strong agricultural economy, provision of hunting and fishing opportunities, and the multitude of different desires for land management. The following sections provide additional information about the study area and some additional discussion on the views and values associated with land management.

## Social Study Area Counties and Communities

The 2010 population of the planning area was 61,084, a decrease of 2.4% since 2000. During the decade 1990-2000, the planning area's population grew 1.2%. The population in the planning area is expected to increase 7.1% between 2010 and 2020 and increase 7.8% between 2010 and 2030 (Table 3.41). Across the planning area counties the percentages of male and female residents was relatively equal except for Toole County, which had a higher percentage of males (55.7%). This increased percentage of males is mostly due to a correctional facility that is located in Toole County. Individuals under 18 years old, 25-44 years old, and 45-64 years old tended to comprise larger percentages of the population across the planning counties (Table 3.41). It is important to note that the information presented on population and demographics is based upon the resident population and does not reflect any migratory or transient work populations. In other words, communities and the counties may see a difference in population and demographics due to a transient work force related to energy development. Additional information is provided below for the three counties that have the majority of surface and subsurface BLM acres.

### Blaine County

Blaine County is located along the HiLine in northcentral Montana adjacent to the Canadian border. It is bordered by Hill and Chouteau Counties to the west, the Missouri River to the south, and Phillips County to the east. The Upper Missouri River Breaks National Monument, which is managed by the BLM, occupies the southern part of the county but is not part of this planning effort. Blaine County is home to the majority of the Fort Belknap Indian Reservation which is located in the southeast portion of the county. About 12% of Blaine County is federal land (including the BLM and U.S. Fish and Wildlife Service), 20% is Indian Reservation land, 7% is state land and 61% is private land. The BLM manages 299,201 surface acres and 615,688 subsurface acres in the Blaine County portion of the planning area. (These figures do not include the Upper Missouri River Breaks National Monument.)

**Table 3.41  
HiLine Planning Area Population and Demographics**

<i>Population</i>								
	<i>1990 CENSUS<sup>1</sup></i>	<i>2000 CENSUS<sup>1</sup></i>	<i>2010 CENSUS<sup>1</sup></i>	<i>Projection 2020<sup>1</sup></i>	<i>Projection 2030<sup>1</sup></i>	<i>% change 2000-2010<sup>2</sup></i>	<i>% change 2010- 2020<sup>2</sup></i>	<i>% change 2010- 2030<sup>2</sup></i>
Montana	799,065	902,195	989,415	1,094,712	1,156,494	9.7%	10.6%	16.9%
Blaine County	6,728	7,009	6,491	6,907	7,199	-7.4%	6.4%	10.9%
Chouteau County	5,452	5,970	5,813	5,708	5,433	-2.6%	-1.8%	-6.5%
Glacier County	12,121	13,247	13,399	14,063	13,752	1.1%	5.0%	2.6%
Hill County	17,654	16,673	16,096	18,272	18,955	-3.5%	13.5%	17.8%
Liberty County	2,295	2,158	2,339	2,408	2,378	8.4%	2.9%	1.7%
Phillips County	5,163	4,601	4,253	4,276	4,234	-7.6%	0.5%	-0.4%
Toole County	5,046	5,267	5,324	5,715	5,711	1.1%	7.3%	7.3%
Valley County	8,239	7,675	7,369	8,074	8,178	-4.0%	9.6%	11.0%
Planning Area Total <sup>2</sup>	62,698	62,600	61,084	65,423	65,840	-2.4%	7.1%	7.8%
	<i>Age: Percent of Population<sup>3</sup></i>					<i>Sex: Percent of Population<sup>3</sup></i>		
	<i>Under 18 years</i>	<i>18 to 24 years</i>	<i>25 to 44 years</i>	<i>45 to 64 years</i>	<i>65 years and over</i>	<i>Male</i>	<i>Female</i>	
Montana	22.6%	9.6%	23.8%	29.2%	14.8%	50.2%	49.8%	
Blaine County	30.0%	9.0%	20.9%	26.6%	13.5%	50.0%	50.0%	
Chouteau County	26.7%	7.4%	19.6%	29.0%	17.3%	49.2%	50.8%	
Glacier County	31.6%	10.0%	22.7%	25.2%	10.6%	48.9%	51.1%	
Hill County	26.8%	10.7%	22.9%	26.9%	12.7%	50.5%	49.5%	
Liberty County	22.0%	8.0%	20.6%	29.7%	19.8%	48.1%	51.9%	
Phillips County	23.1%	5.5%	18.4%	32.7%	20.3%	49.3%	50.7%	
Toole County	20.7%	7.9%	26.0%	31.5%	13.9%	55.7%	44.3%	
Valley County	23.2%	5.4%	19.4%	31.3%	20.7%	49.7%	50.3%	

Sources: <sup>1</sup> U.S. Census Bureau, Decennial Censuses of Population (Title varies per Census), 1890-2010; Compiled June 2013 by the Census & Economic Information Center, MT Department of Commerce ([www.ceic.mt.gov](http://www.ceic.mt.gov))

<sup>2</sup> Calculated from data above

<sup>3</sup> 2010 Census, U.S. Census Bureau

Blaine County had a 2010 population of 6,491, a 7.4% decrease since 2000. The population is expected to continue to decline in the future. Of the planning area counties, Blaine has one of the lower percentages of population 65 and over, and the second highest percentage of Native Americans. Chinook, the county seat, had a 2010 population of 1,203, a decline of 13.2% since 2000. Havre, the largest town along the HiLine with a 2010 population of 9,310, is located about 20 miles west of Chinook in Hill County. Blaine County is home to the larger part of the Fort Belknap Indian Reservation. In 2007, Blaine County had 655 farms and ranches with an average size of 3,588 acres (U.S. Census of Agriculture 2007). Farming or ranching was the primary occupation of 56% of those identifying themselves as farm or ranch operators.

## Phillips County

Phillips County is located along the HiLine in northern Montana adjacent to the Canadian border. It is bordered by Blaine County to the west, the Missouri River to the south, and Valley County to the east. The Charles M. Russell and UL Bend National Wildlife Refuges, which are managed by the U.S. Fish and Wildlife Service, are located in southern Phillips County. A portion of the Upper Missouri River Breaks National Monument is also located in the southwestern part of the County. Phillips County is home to a small part of the Fort Belknap Indian Reservation. About 41% of Phillips County is federal land (including BLM, Bureau of Reclamation and U.S. Fish and Wildlife Service), 4% is Indian Reservation land, 6% is state land and 49% is private land. The BLM manages 1,029,362 surface acres and 1,744,612 subsurface acres in the Phillips County portion of the planning area. (These figures do not include the Upper Missouri Breaks National Monument.)

Phillips County had a 2010 population of 4,253, a decline of 7.6% since 2000. The county lost over 10% of its population between 1990 and 2000 due to the closing of gold mines in the Little Rocky Mountains. The population of Phillips County is projected to have a minimal (less than 1%) increase in population from 2010 to 2020; however, overall from 2010 to 2030 there is a projected decrease in population.. Malta, the county seat, had a 2010 population of 1,997, a decrease of 5.8% since 2000. Phillips County has one of the highest populations in the planning area of persons aged 65 years and older, 20.3% of the population in 2010. In 2007, Phillips County was home to 556 farms and ranches with an average size of 3,608 acres (U.S. Census of Agriculture, 2007). Farming or ranching was the primary occupation of 65% of those identifying themselves as farm or ranch operators.

## Valley County

Valley County is located along the HiLine in northeastern Montana adjacent to the Canadian border. It is bordered by Phillips County to the west, the Missouri River to the south, and Roosevelt and Daniels Counties to the east. The Charles M Russell National Wildlife Refuge and Fort Peck Dam are located in southern Valley County. Valley County is home to the eastern edge of the Fort Peck Indian Reservation. About 46% of Valley County is federal land (including BLM, Bureau of Reclamation and U.S. Fish and Wildlife Service), 9% is state land and 44% is private land. The BLM manages 1,013,209 surface acres and 1,351,730 subsurface acres in the Valley County portion of the planning area.

Valley County is the easternmost county in the planning area. The 2010 population was 7,369, a decline of 4.0% since 2000. Valley County's population is projected to increase by 9.6% from 2010 to 2020 and by 11% from 2010 to 2030. The county seat and largest city in the county is Glasgow, with a 2010 population of 3,250, a less than 1% decrease in population since 2000. Valley County has one of the highest populations in the planning area of persons aged 65 years and older, 20.7% of the population in 2010. In 2007, Valley County was home to 770 farms and ranches with an average size of 2,677 acres (U.S. Census of Agriculture, 2007). Farming or ranching was the principal occupation of 58% of those identifying themselves as farm or ranch operators in Valley County.

## Stakeholders and Stakeholder Values

Understanding the social conditions of the study area also includes understanding the views and values held by individuals or groups that are affected by or interested in natural resource issues (stakeholders). Some of this was discussed previously. This section's discussion attempts to provide a broad overview of the range and variety of views and values held by those interested in BLM management. Stakeholders base their views toward BLM resources, resource uses, and management actions on the values they hold. Oftentimes these values are put forth as an individual's

or group's focus of interest, the basis for the agenda they bring forth, and/or determines what an individual or group finds valuable.

There is considerable complexity involved in fully understanding the views and values of stakeholders. This is due, in part, to the fact that individuals and groups can hold multiple values, and at times those values could be in conflict with each other and it is up to that individual or group to prioritize those values in order to address the issue at hand. One way to understand possible views and values toward BLM resources, resource uses, and management actions is to identify a range of values that can be held by an individual or group. There are several ways one can discuss the range of possible value typologies, including work done by Brown and Reed (2000). Brown and Reed (2000) developed a list of thirteen value typologies as a way to understand stakeholder values toward natural resources. The adaptation of Brown and Reed's list presented below highlights the variety of values a person may hold toward BLM resources, resource uses, and management. The thirteen value typologies adapted from Brown and Reed (2000) are listed below along with an associated statement describing the value.

- Aesthetic – I value the BLM resources and uses because I enjoy the forest scenery, sights, sounds, smells, etc.
- Biological diversity – I value the BLM resources because it provides a variety of fish, wildlife, plant life, etc.
- Life-sustaining – I value BLM resources because they help produce, preserve, clean and renew air, soil, and water.
- Recreation – I value BLM resources and resource uses because it provides a place for outdoor recreation activities.
- Moral/ethical – I value BLM resources in and of themselves for their existence, no matter what I or others think about those resources.
- Historical/cultural – I value BLM resources and resource uses because they have places and things of natural and human history that matter to me, others or the nation and/or I value BLM resources and resource uses because it is a place for me to continue and pass down the wisdom and knowledge, traditions, and way of life of my ancestors.
- Therapeutic – I value BLM resources and resource uses because it makes me feel physically and/or mentally better.
- Scientific/learning – I value BLM resources because we can learn about the environment through scientific observation or experimentation.
- Spiritual – I value BLM resources because they provide a sacred, religious, or spiritually special place to me or because I feel reverence and respect for nature there.
- Economic – I value BLM resources and resource uses because they provide timber, fisheries, minerals, grazing, or tourism opportunities that provide economic benefit.
- Subsistence – I value BLM resources because they provide necessary food and supplies to sustain my life.
- Future – I value BLM resources because they allow future generations to know and experience these resources.

While the above list of value typologies is not exhaustive, it does provide a glimpse at the variety of values individuals or groups may hold toward BLM resources and resource uses. All of these are valid values and many of us hold several to all of them. Conflicts surrounding BLM resources, resource uses, and management often stem from how individuals/groups prioritize their values – one may prioritize his/her value of recreational opportunities over his/her historical value of an area. Additionally, these are broad and somewhat simplistic value typologies and there can be conflicts within a value typology such as conflict between people's values of different recreational opportunities. What people value and how they prioritize their values helps to determine their quality of life and if the values they prioritize exist in the surrounding area. Quality of life is often associated with communities, community infrastructure, relationships among residents, educational opportunities, and the like. Additionally, quality of life can be associated with the amount and quality of available resources such as recreation opportunities and resolution of problems related to resource activities. Other, less tangible beliefs that could affect social well-being include individuals having a sense of control over the decisions that affect their future, and feeling that the government strives to act in ways that consider all stakeholders' needs.

As a way to discuss the variety of values that relate to the HiLine BLM resources, resource uses, and management, we have grouped similar value priorities and categorized these as stakeholder groups. These are generalized groupings and an actual individual or group likely falls into multiple groups. Moreover, one should not consider these stakeholder groups as homogenous. In other words, even within the categorized stakeholder groups differences in values may still occur. The categorized stakeholder groups, however, provide a useful way to discuss similar value priorities and set up a

way to discuss potential impacts to those values. Based upon local understanding of the views and values associated with HiLine BLM resources, resource uses, and management as well as based upon the comments received during this planning process the following stakeholder groups were categorized: groups and individuals that prioritize ranching, ranching livelihood and agricultural lifestyle, groups and individuals that prioritize local communities and local community benefits, groups and people that prioritize recreational opportunities (including motorized and nonmotorized), groups and individuals who prioritize resource protection, groups and individuals who prioritize resource use, and Native Americans. Again, it should be noted that these groups are not mutually exclusive and examples of households that fit into all categories are likely to be present. Below we discuss these stakeholder groups as a basis for the impact discussion in Chapter 4.

### **Groups and Individuals that Prioritize Ranching, Ranching Livelihood and Agricultural Lifestyle**

Ranching is an important part of the history, culture, and economy of the HiLine. The Great Northern Railway brought European immigrants to the northern Great Plains to homestead. While the Homestead Act was signed in 1862, many settlers arrived in Montana during a ten-year period from 1908-1918 prompted by the advertising campaign of the railroads. By 1918, many ranches and farms were crippled by the drought and onslaught of grasshoppers and settlers left the land. See the Historical Overview in the Cultural section, the Livestock Grazing section and the Economic section of this chapter for more information on livestock grazing and BLM grazing permits.

Many of the farmers and ranchers in the planning area are third and fourth generation farmers and ranchers who enjoy living off the land, being self-employed, working outdoors, and living a rural lifestyle. They pride themselves in “keeping the ranch in the family” and conserving and improving the land. Many farmers and ranchers view their farming and ranching enterprise not only in economic terms, but also consider the ecological and cultural “products” that their farm or ranch contribute to society. They are very concerned about maintaining the health of the range because their livelihood and lifestyle depend on it and about enhancing the ability of younger people to set up a family ranching operation because the local ranching communities and rural schools depend on this. The closeness to the land and link with their parents and grandparents makes ranching a precious opportunity to provide children with a heritage filled with values that many families wish to duplicate. Lessons taught by drought, floods, wildfire, predators, depressed markets, and life and death are learned through ranching experiences.

Ranchers and farmers face many challenges today, including changing federal regulations, aging rancher populations, economic issues, trends in agricultural practices, and changing land use. In the past, many small farms and ranches have been consolidated into larger units that can better compete in the marketplace. In addition, many ranchers have diversified their income by seeking supplemental work off the ranch, providing outfitting and guest ranch services, and/or diversifying their output.

Concerns expressed by groups and individuals that may fall under this stakeholder group include continuation of current BLM management for livestock grazing as well as maintaining motorized access to grazing allotments, and future designation of relinquished allotments as reserve common allotments.

Scoping comments from those concerned with livestock grazing include: *Grazing in the Malta area is an integral part of the area’s economy and should receive special consideration as its own planning issue. With good water development and sound grazing management plans that include a rest rotation, grazing can benefit the area. More emphasis should be placed on range management and grazing.*

### **Groups and Individuals that Prioritize Recreational Opportunities – Including Motorized and Nonmotorized**

Recreation is a component of most lifestyles in the planning area and is important to many residents. Recreationists are very diverse and changes in management can affect the people who engage in the various activities differently. Recreational activities include OHV use, hunting, fishing, wildlife watching, sightseeing and hiking. See the Recreation section of this chapter for more information on recreation areas and activities.

Some scoping comments on recreation concerned the potential loss of activities such as OHVs on roads, primitive roads and trails and traveling off road to retrieve game. Some commenters discussed the importance of motorized recreation to their lifestyles.

Scoping comments from OHV proponents include: *I believe off road travel should be allowed for hunting. There are a large number of people who are not in shape due to age, etc., to walk several miles and drag an animal back to a vehicle. I've talked to several who are quitting hunting for this reason. With no hunting, us landowners will be overrun with deer and antelope. As far as damage from the land, you can find very little that came from off road travel.*

The HiLine is well known for its hunting and fishing opportunities. In addition, visitors/tourists are increasingly drawn to the area to observe wildlife.

Scoping comments from groups and individuals that may fall in this stakeholder group include: *Hunting, angling, and general outdoor recreation has a substantial economic and historical legacy on the public lands. Please recognize the cultural values of hunting, fishing, and sustainable fish and wildlife and the need for maximum measures to ensure their future and not sacrifice it for energy production.*

Many outfitting guides specialize in providing accommodations and services for hunting, fishing and other recreational activities. While outfitting provides additional jobs to the economy and supplemental income to many ranches, some locals are concerned that outfitters are to blame for the closure of private access to public lands, thus giving them unparalleled access to prime hunting. They feel that landowners, present or absentee, are blocking road access and outfitters are paying for the privilege to access public lands through private lands.

One scoping comment indicated: *Identify public land that cannot be accessed by the public where outfitting takes place and seek opportunities to secure access to these areas.*

### **Groups and Individuals Who Prioritize Resource Protection**

A variety of groups and individuals give resource protection in the planning area a high priority. The following concerns were among those received from groups and individuals that may fall in this stakeholder group during scoping: habitat for wildlife including special status species, riparian health, noxious weed management, energy and mineral development, transportation management, and special management designations.

One scoping comment indicated: *The Malta RMP planning area is an American treasure. Not all of the public will see it that way, of course. For some it will be a "wasteland" or a land with "nothing out there." Others will view it as a revenue source, principally from oil and gas, wind power, or grazing. But increasingly, people recognize the prairie of northern Montana as a dramatic, scenic and historic landscape still embracing significant natural tracts and offering tremendous potential for prairie restoration.*

### **Groups and Individuals Who Prioritize Resource Use**

Some groups and individuals including many local residents have expressed concerns about the potential limitations to oil and gas and other types of development within the planning area. Some indicated that oil and gas development, along with wind powered development, would bring an economic boost to the area, including jobs and revenue. Others indicated that these resources can be developed in an environmentally friendly manner.

One scoping comment indicated: *The oil and gas need to be developed so we have lower energy costs and also are creating revenue. Any time we can produce something from our natural resources, for example, cattle from the grass or oil and gas from the ground, we are creating wealth for the United States. It does this because the money is spent here and we don't have to import the products.*

### **Groups and Individuals that Prioritize Local Communities and Community Benefits**

The planning area is rural and largely unpopulated, with an agricultural-based lifestyle that is highly prized by the residents. Some of the qualities the residents find most satisfying are the good people, small close-knit communities,

natural beauty and wide open spaces, and the feeling this is a good place to raise children. Residents have indicated a willingness to forego amenities found in more urban environments (e.g., more available medical care, higher incomes and employment levels, etc.) to pursue what they consider a high quality of life. The area experiences a low crime rate, fewer social problems than larger urban areas, and plentiful uncrowded outdoor recreation opportunities.

Small rural communities can be tied to the BLM and other public lands in a variety of ways. Local businesses and governments depend upon BLM employees to support businesses and public services. Use of public lands for recreation activities, livestock grazing, minerals/energy development, and other activities can provide economic and leisure-time opportunities.

While planning area residents feel this way of life is desirable, they observe with real concern the rate of population outmigration from the area and the lack of opportunity for employment. These values and concerns can lead to conflicts in resource issues. Generally, residents are in favor of economic growth through resource development or other industry because it would provide employment for them or their children and would promote overall economic well-being. On the other hand, they wish to continue to enjoy the outdoor recreational opportunities associated with a sparse population and a largely pristine environment.

One scoping comment indicated: *It is vital to the local stakeholders that issues directly impacting their properties, livelihoods and communities be handled appropriately. While all uses should be considered the BLM must ensure that the balance between more recently developed uses such as recreation, and other uses that have endured over the years and support the local economy, be given special consideration.*

## Native Americans

Indian tribes with an interest in the planning area include the Turtle Mountain Band of Chippewa Indians, the Fort Belknap Indian Community, the Chippewa Cree Tribes, the Northern Cheyenne Tribe, the Fort Peck Assiniboine and Sioux Tribes, the Little Shell Tribe of the Chippewa Indians, the Crow Tribe, the Blackfoot Nation, the Nez Perce (Nee-Me-Poo) Tribe, and the Confederated Salish and Kootenai Tribes. These tribes are either located within or close to the planning area or, on occasion, visit locations within the planning area that are of particular cultural and spiritual significance. Areas of particular spiritual interest to many of the tribes include the Sweet Grass Hills in the western part of the planning area and the Little Rocky Mountains in the central part of the planning area. Other sites within the planning area that have cultural and religious significance include vision quest sites, ceremonial and/or dance grounds, rock art sites and plant gathering areas. See the Cultural section of this chapter for a more detailed discussion of the cultural features and Native American history of the planning area.

Three Indian reservations are located in the planning area, and one is located directly to the east of the planning area. The Blackfoot Reservation is located on the western edge of the planning area predominately in Glacier County, and encompasses 2,371 square miles. The Native American population of the reservation was 8,944 in 2010. Browning is the hub of the reservation, with a population of 1,016 in 2010. Ranching and farming are major uses of reservation land.

The Rocky Boy's Reservation is located in Chouteau and Hill Counties, encompasses 171 square miles, and is home to members of the Chippewa-Cree Tribe. In 2010 the Native American population of the reservation was 3,221. Box Elder is the largest community within the reservation with a population of 87 people in 2010. Many community and tribal services are located in Box Elder. Tribal government, education, and medical/social services employ many of the tribal members.

The Fort Belknap Indian Reservation is located in Phillips and Blaine Counties and is home to the Gros Ventre and Assiniboine Tribes. The reservation encompasses 1,014 square miles and 2,704 Native Americans lived on the reservation in 2010. There are several unincorporated communities on the reservation including Fort Belknap Agency, Lodgepole, and Hayes. The 2010 populations of these communities were 1,293, 265, and 843 respectively. Many community services are located in Harlem, which had a 2010 population of 808. Harlem is located just north of the reservation. The Tribes and Bureau of Indian Affairs (BIA) are the largest employers on the reservation.

The Fort Peck Reservation is located directly east of the planning area. The reservation is home to the Sioux and Assiniboine Tribes. The reservation encompasses approximately 3,289 square miles and was home to 6,714 Native

Americans in 2010. Tribal governments and associated services are located in Poplar, which had a population of 810 in 2010. The largest community on the reservation is Wolf Point, with a 2010 population of 2,621.

According to scoping comments, the Sweet Grass Hills are of religious importance to many of the northern plains tribes, contain many medicinal and ceremonial plants, and should be protected. The Sweet Grass Hills were designated as an ACEC in 1992 and withdrawn from mineral entry for twenty years in 1996. An effort headed by a member of the Blackfoot Tribe is underway to place the Sweet Grass Hills on the National Register of Historic Landmarks. One commenter in the scoping process stated that the “Sweet Grass Hills is our church.”

One scoping comment indicated: *There are four Indian reservations—home to seven tribes—within or close to the RMP area. Other tribes have close historical ties to the region. The BLM should reach out to Native interests to ensure that sites of cultural and historical importance are respected and protected.*

## Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, states “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...” (Executive Order 12989). Therefore, based upon Council on Environmental Quality (CEQ) guidance under the National Environmental Policy Act (CEQ 1997) and BLM Environmental Justice principles outlined in BLM H-1601-1 Land Use Planning Handbook, the Environmental Justice considerations for this planning action include the following:

- identification of low-income and/or minority populations;
- determination of disproportionately high and adverse human health effects on low-income, minority populations and/or Indian tribes;
- determination of disproportionately high and adverse environmental effects on low-income, minority populations and/or Indian tribes;
- identification and implication of differential patterns of consumption of natural resources by low-income, minority and/or Indian tribes; and,
- provision of opportunities for full involvement of low-income, minority and/or Indian Tribes in BLM decision making processes.

Low-income populations are determined by the U.S. Census Bureau based upon poverty thresholds developed every year. Minority populations as defined by Council on Environmental Quality (CEQ) guidance under the National Environmental Policy Act (CEQ 1997) include individuals in the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. A minority population is identified where “(a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater...” (CEQ 1997). Additionally, “[a] minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds” (CEQ 1997).

Data for the identification of low-income is from the U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE). The SAIPE program produces yearly single-year poverty estimates for states, counties, and school districts and is considered the most accurate for these geographic scales, especially for areas with populations of 65,000 or less (U.S. Census 2014a). Minority populations are identified using the U.S. Census Population Estimates program which provides estimates for the resident population by age, sex, race, and Hispanic origin at the national, state and county scales. Estimates from SAIPE and the Population Estimates program are used in federal funding allocations.

The analysis was conducted at the county level due to the large geographic area as well and the availability of the most current data; however, implementation-level analysis may need to be employed that is much more localized in nature. The aforementioned data is used to determine whether the populations residing in the eight-county study area constitute an “environmental justice population” through meeting either of the following criteria:

- At least one-half of the population is of minority or low-income status; or
- The percentage of population that is of minority or low-income status is at least 10 percentage points higher than for the entire State of Montana.

CEQ guidance does not provide specific criteria for determining low-income populations as it does for minority populations, so for this planning effort the BLM uses the criteria for minority populations, which are discussed above, as the criteria for low-income populations. We identify low-income and minority population percentages that are “meaningfully greater” as at least 10 percentage points higher than for the entire State of Montana.

Table 3.42 shows that Blaine, Chouteau, Glacier, and Hill Counties have American Indian/Alaska Native populations that meet at least one criterion above and would be considered as having a minority environmental justice population. The remaining counties do not meet the criteria above for minority environmental justice populations even when considering the aggregated minority percentages. In terms of low-income, Glacier County meets the “meaningfully greater” criterion by having a poverty percentage of 30.4% which is 14.8 percentage points higher than the State of Montana (15.6%). Based upon the data provided in Table 3.42, there are identified populations that require environmental justice considerations (disproportionate impacts) in this planning process. These considerations will be addressed in the Chapter 4, Environmental Justice section.

Opportunities for low-income, minority, and Indian tribes’ involvement in this planning process are documented in the scoping discussion and in Chapter 5, Consultation and Coordination.

	<i>Race and Ethnicity: Percent of Population<sup>1</sup></i>								<i>Poverty Measures<sup>2</sup></i>	
	<i>White</i>	<i>Black or African American</i>	<i>American Indian and Alaska Native</i>	<i>Asian</i>	<i>Native Hawaiian and Other Pacific Islander</i>	<i>Two or More Races</i>	<i>Hispanic</i>	<i>Aggregated Minority Percentage</i>	<i>Percent Below Poverty</i>	<i>Median Household Income</i>
Montana	89.7%	0.6%	6.5%	0.7%	0.1%	2.5%	3.1%	13.5%	15.6%	\$45,030
Blaine County	48.1%	0.2%	49.4%	0.3%	0.0%	2.0%	2.1%	54.0%	23.5%	\$36,250
Chouteau County	77.3%	0.2%	20.3%	0.4%	0.1%	1.8%	1.8%	24.6%	17.6%	\$39,833
Glacier County	32.5%	0.2%	63.7%	0.3%	0.0%	3.2%	2.3%	69.8%	30.4%	\$34,508
Hill County	73.3%	0.4%	22.1%	0.6%	0.1%	3.5%	2.7%	29.4%	17.0%	\$41,194
Liberty County	98.3%	0.1%	0.2%	0.1%	0.0%	1.2%	0.7%	2.4%	20.7%	\$35,414
Phillips County	87.7%	0.0%	8.0%	0.3%	0.0%	4.0%	2.2%	14.5%	16.1%	\$38,913
Toole County	91.6%	0.7%	5.2%	0.6%	0.0%	2.0%	3.2%	11.6%	16.6%	\$42,057
Valley County	87.5%	0.3%	9.6%	0.5%	0.0%	2.2%	1.6%	14.1%	15.0%	\$41,694

Source: <sup>1</sup>U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2012.

<sup>2</sup>U.S. Census Bureau, Small Area Income and Poverty Estimates.

## Soil Resources

Stable and quality soils in the planning area provide the foundation for other resources (e.g., biological resources) and for resource uses (e.g., livestock grazing). Soils are also an engineering medium upon which roads, trails, facilities, etc. are built. Soil is a living system that is linked to nutrient and hydrologic cycles, energy flows, and other ecological processes.

Indicators of soil resource condition include both visual and nonvisual factors. Visual indicators include evidence of soil loss (water and wind erosion) or transport (mass movement, slope failure, deposition), and changes in soil profile (thickness, structure). Some indicators are indirect. These include changes in vegetation (species, abundance, seral stage), changes in drainage, and changes in land use (grazing, cultivation, development). Changes outside the normal range are identified by comparison to historical observations or to similar (control, reference) areas.

Nonvisual indicators of soil condition include soil chemistry (pH, salinity, sodium absorption ratio (SAR)), physical properties (permeability and infiltration rates, moisture retention), and yield or productivity.

Data sources include soil survey data, rangeland health assessments, field observations, vegetation monitoring, grazing allotment evaluations, and baseline data provided from previous NEPA analyses.

Soils in the planning area are derived mainly from glacial till, weathered sedimentary or igneous bedrock and alluvium from mixed sources. These parent materials, along with variable climate, topography, vegetation, and management create complex and diverse soil patterns, varying greatly in suitability, limitation and productivity characteristics.

Detailed soil surveys have been published by the United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) for Blaine-Soil Survey Area (SSA) 608 (USDA-NRCS 1986), Chouteau-SSA 615 (USDA-NRCS 2003), Glacier-SSA 600 (USDA-NRCS 1980), Hill-SSA 041 (USDA-NRCS 2003), Liberty-SSA 051 (USDA-NRCS 2002), Phillips-SSA 641 (USDA-NRCS 2004), Toole-SSA 101 (USDA-NRCS 2002) and Valley-SSA 105 (USDA-NRCS 1984). These soil surveys were performed by the NRCS according to National Cooperative Soil Survey standards and were conducted at the second and third order of detail. Spatial (State Soil Geographic [STATSGO]) and Soil Survey Geographic [SSURGO]) and tabular soil datasets are available on the internet at the following site: <http://websoilsurvey.nrcs.usda.gov/app/>. This website provides up-to-date spatial data as well as interpretive ratings and soil characteristics for each soil map unit (SMU).

Suitability and limitations of soils for specific proposed actions (including, but not limited to range improvements, mineral development, roads or rights-of-way locations) are determined by conducting site-specific soil investigations. Soils are investigated to determine erosion hazard and reclamation suitability by evaluating slope and soil properties such as texture, organic matter content, structure, permeability, depth, available water capacity, and salt concentration.

Soils in the planning area are grouped geographically by Major Land Resource Areas (MLRAs) for descriptive purposes (see Map W.10, which is available on the internet at <http://blm.gov/8qkd>). The following descriptions of MLRA are derived from the USDA Agriculture Handbook 296 (NRCS 2006).

**Brown Glaciated Plain (MLRA 52)** is generally covered by glacial till plains. Glacial till ranges from a few feet to about 200 feet thick and is generally underlain by clayey and loamy shale. Landscapes range from nearly level to gently rolling and strongly rolling to steep along drainageways. Alluvial deposits are extensive along the Milk River, but occur in narrow and discontinuous strips along other streams and rivers. Shale, siltstone, or sandstone bedrock can be exposed along the valley walls of deeply dissected drainages. Upland potholes, valley bottoms, terraces, and fans are common inclusions. Soils are dominantly well developed, moderately deep to very deep (from 20 to more than 60 inches) and well drained. Textures generally vary from loamy to clayey. The dominant soil orders in this MLRA are Alfisols, Entisols, and Mollisols. The soils in the area dominantly have a frigid soil temperature regime, an ustic soil moisture regime, and mixed or smectitic mineralogy. Natrustalfs (Elloam and Thoeny series) and Haplustalfs (Phillips series) formed in till on till plains. Ustorthents (Hillon and Sunburst series) formed in till on till plains and hills. Argiustolls formed in till on till plains and hills (Bearpaw, Joplin, Scobey, Telstad, and Vida series) and in alluvium on alluvial fans, stream terraces, and hills (Ethridge and Evanston series). Erosion hazards are slight to moderate due to the relatively gentle rolling topography and short slope lengths.



Black Elk Coulee, Blaine County

Photo by Craig Miller

**Northern Dark Brown Glaciated Plains (MLRA 53A)** is covered by glacial till plains. The gently undulating to rolling till plains in this area are interrupted by more strongly rolling and steep slopes adjacent to kettle holes, kames, moraines, and major stream valleys. The dominant soil orders in this MLRA are Inceptisols and Mollisols. The soils in the area dominantly have a frigid soil temperature regime, an ustic soil moisture regime, and mixed or smectitic mineralogy. They generally are very deep, moderately well drained or well drained, and clayey or loamy. Calciustepts (Zahill series), Natrustolls (Niobell series), and Calciustolls (Zahl series) formed in till on till plains and moraines. Haplustolls (Tally series) formed in eolian deposits, alluvium, or glaciofluvial deposits on fans, terraces, and outwash plains and in drainageways. Argiustolls formed in till (Vida and Williams series) and mixed till and alluvium (Bowbells series) on till plains, moraines, and hills. Argiustolls also formed in alluvium or eolian deposits over till (Dooley series), alluvium (Turner series), and alluvium, lacustrine deposits, or glaciofluvial deposits (Farnuf series) on lake plains, fans, and terraces and in drainageways.

**Northern Rolling High Plains, Northern Part (MLRA 58A)** consists of eroded plateaus and terraces. Slopes generally are gently rolling to steep, with areas of steeply sloping badlands bordering the larger streams and rivers. Marine and continental sediments of the Cretaceous Montana Group underlie this MLRA. The Montana Group includes the Bearpaw shale; Judith River sandstone, siltstone and shale; Claggett shale; Eagle sandstone; and Telegraph Creek sandy shale. Soils are mostly fine textured, high in smectitic 2:1 clays, and shallow to moderately deep (from 10 to over 40 inches). Soils are loamy or sandy where high sandstone ridges occur. The dominant soil orders in this MLRA are Entisols and Inceptisols. The soils in the area dominantly have a frigid soil temperature regime, an ustic soil moisture regime, and mixed or smectitic mineralogy. Ustorthents formed in residuum on hills and ridges (Cabbart, Neldore, and Yawdim series) and in alluvium on fans and terraces (Lambert series). Ustifluvents (Havre series) formed in alluvium on fans, terraces, and flood plains. Haplustepts (Delpoint and Yamacall series) formed in alluvium, eolian deposits, and residuum on terraces, fans, and hills. Natrustalfs (Gerdrum series) and Haplustolls (Shambo series) formed in alluvium and glaciofluvial deposits on fans and terraces and in drainageways. These soils can have severe erosion hazards and have poor reclamation suitability because of the dominance of steep and very steep slopes (greater than 20% slope) and extreme physical properties such as high clay content, slow permeability, and shallow depth and sparse vegetative ground cover. Soils are generally low in organic matter and high in sodium and soluble salts.

**Northern Rocky Mountain Foothills (MLRA 46), Northern Rocky Mountains (MLRA 43A), and Central Rocky Mountains (MLRA 43B)** are characterized by rugged hills and low mountains to rugged glaciated mountains and thrust-and-block faulted mountains. The bedrock formations range from Precambrian to Cretaceous in age. Rocks consist of shale, siltstone, sandstone, limestone, dolomite, argillite, quartzite, gneiss, schist, and granite. These areas receive more

precipitation than the other MLRAs (15 to over 20 inches annually); therefore, vegetative cover is higher. Soils are shallow to very deep, very poorly drained to well drained, and have most of the soil texture classes. The dominant soil orders in these MLRAs are Mollisol, Entisol, Andisols, Inceptisols, and Alfisols. Mineralogy is mixed or smectitic. Erosion hazards are slight to severe. Shallow soils are difficult to reclaim after surface-disturbing activities.

Table 3.43 lists the dominant STATSGO soil map units in the planning area and the dominant associated MLRA and acreages. These units total 69% of the entire surface acreage in the planning area (all ownerships).

<i>Map Unit ID</i>	<i>Map Unit Name</i>	<i>MLRA</i>	<i>Acres</i>
MT036	Vida-Bearpaw-Zahill	52	472,342
MT058	Bowdoin-Marvan-Vaeda	52	111,480
MT071	Leavitt-Burnette-Babb	46	159,916
MT088	Cabbart-Badland-Neldore	58A	104,668
MT102	Cabbart-Delpoint-Rock Outcrop	58A	123,783
MT141	Cowood-Rock Outcrop-Rubble Land	43A	120,500
MT186	Kobar-Ethridge-Marias	52	417,703
MT191	Fairfield-Martinsdale-Cabba	46	336,258
MT245	Harlem-Havre-Lallie	52	196,013
MT257	Harlem-Havre-Lardell	52	195,615
MT270	Hedoes-Castner-Belain	46	377,197
MT277	Hillon-Neldore-Cabbart	52	527,792
MT343	Loberg-Garlet-Evaro	43A	190,954
MT385	Marvan-Vaeda-Marias	52	144,867
MT395	Michelson-Redchief-Adel	46	128,981
MT418	Neldore-Bascovy-Rock Outcrop	58A	235,839
MT422	Neldore-Dilts-Rock Outcrop	52, 58A	449,908
MT423	Neldore-Hillon-Rock Outcrop	52, 58A	148,482
MT425	Neldore-Rock Outcrop-Marvan	52	103,373
MT428	Neldore-Elloam-Sunburst	52, 58A	455,133
MT429	Neldore-Rock Outcrop-Bascovy	58A	343,453
MT453	Phillips-Elloam-Thoeny	52	1,017,617
MT526	Scobey-Kevin-Hillon	52	2,101,449
MT564	Telstad-Joplin-Hillon	52	1,873,105
MT593	Vaeda-Ustic Torrifluvents-Harlem	52	133,608
MT635	Williams-Bearpaw-Vida	52	217,329
MT639	Williams-Zahill-Cabba	46	144,041
MT685	Zahill-Bearpaw-Vida	46	113,307

Source: STATSGO, USDA-NRCS 2007.

## Water Erosion

Water erosion is a function of many factors including: soil erodibility; slope gradient; length of slope; rainfall amount, duration, and intensity; and vegetation cover. Erosion hazard is the susceptibility of soil to erosion.

The soil erodibility factor (Kw) quantifies soil detachment by runoff and raindrop impact. This erodibility factor is an index used to predict the long-term average soil loss, from sheet and rill erosion. The Kw factor applies to the whole

soil, which includes rock fragments and is based primarily on the percentage of silt, sand, and organic matter, soil structure, saturated hydraulic conductivity, and rock fragments. Values of Kw range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet erosion by water (USDA-NRCS 2007).

Slope gradient is the difference in elevation between two points, expressed as a percentage of the difference between those points. Representative Value (RV) Slope indicates the expected slope value for a given SMU (USDA-NRCS 2007). For example, the Lisam-Dilts clays, 8% to 35% slopes SMU has a RV slope of 22%.

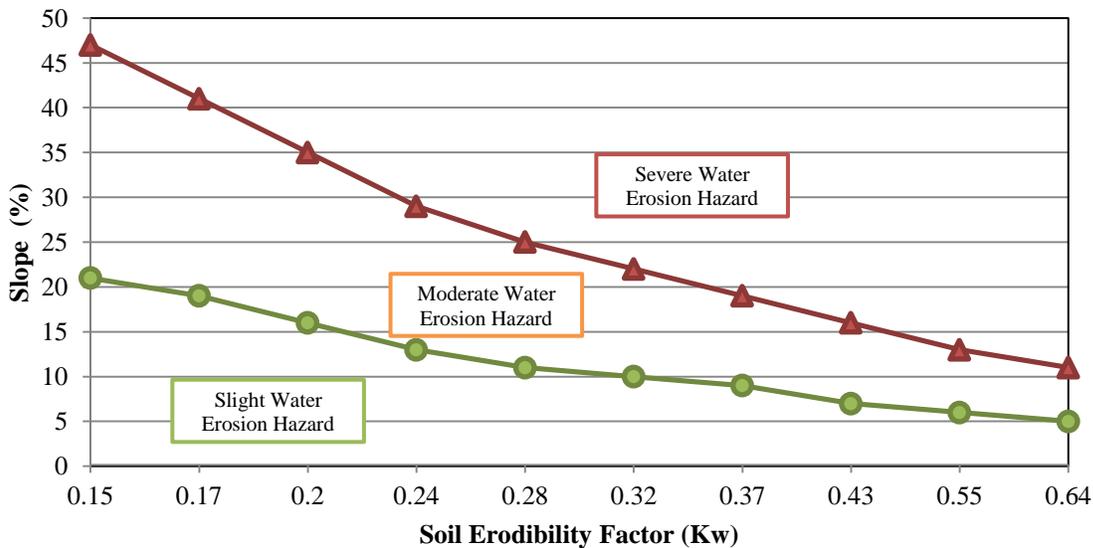
Kw and RV Slope for each named component in a SMU can be found in the respective Soil Survey or on USDA-NRCS's Soil Data Mart on the internet at <http://soildatamart.nrcs.usda.gov/>.

The water erosion hazard for bare non-compacted soil is estimated by using the formula: Water Erosion Hazard = Kw factor x RV Slope. Water erosion hazard is divided into three rating classes: slight (0 to < 3.21), moderate (3.21 to 7), and severe (> 7). Table 3.44 depicts the approximate surface and subsurface acreage amounts associated with each of these classes. Figure 3.12 shows water erosion hazard by soil erodibility factor and slope. A map that displays the water erosion hazard ratings by SMU (Map W.11) can be found on the internet at <http://blm.gov/8qkd>.

<b>Table 3.44 Water Erosion Hazard Ratings (Acres)</b>		
<i>Erosion Hazard Rating Class</i>	<i>BLM Land</i>	<i>Federal Mineral Estate</i>
Slight	1,254,858	2,270,022
Moderate	206,992	395,147
Severe	816,467	1,513,174

Source: GIS calculated acres using USDA-NRCS's SSURGO datasets (Kw-dominant condition x RV slope-dominant condition) downloaded from Soil Data Mart in April and August 2007.

**Figure 3.12  
Water Erosion Hazard by Soil Erodibility Factor and Slope**



## Wind Erosion

Wind erosion is a critical issue following the removal of protective vegetation which results in the displacement or loss of topsoil in some areas, increased sediment deposition in other areas, and impacts to ambient air quality from elevated dust levels.

The wind erosion index (WEI) is a numerical value indicating the susceptibility of soil to wind erosion, or the tons/acre/year that can be expected to be lost to wind erosion. This index is divided into three rating classes: slight (0, 38, 48, 56), moderate (86), and severe (134, 160, 180, 220, 250, 310).

A close correlation exists between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion (USDA-NRCS 2007).

WEI for each named component in a SMU can be found in the respective Soil Survey or on USDA-NRCS’s Soil Data Mart on the internet at <http://soildatamart.nrcs.usda.gov/>.

Table 3.45 depicts the approximate surface and subsurface acreage amounts associated with each class. A map that displays the wind erosion hazard ratings by SMU (Map W.11) can be found on the internet at <http://blm.gov/8qkd>.

<b>Table 3.45 Wind Erosion Hazard Ratings (Acres)</b>		
<i>Erosion Hazard Rating Class</i>	<i>BLM Land</i>	<i>Federal Mineral Estate</i>
Slight	1,068,818	1,789,134
Moderate	1,294,165	2,283,438
Severe	23,740	90,276

Source: GIS calculated acres using USDA-NRCS's SSURGO datasets (WEI-dominant condition) downloaded from Soil Data Mart in August 2007.

## Reclamation Suitability

Reclamation is the reconstruction of topographic, soil, and plant conditions after disturbance, which may not be identical to the predisturbance site, but which permits the degraded land mass to function adequately in the ecosystem of which it was and is a part (Munshower 1994). The needs of modern society necessitate that disturbed areas be returned to some type of stable ecosystem (not actively eroding) as rapidly as possible (Munshower 1994). Reclamation is not the restoration of a site; instead, the long-term objective of reclamation is to set the course for eventual ecosystem restoration (BLM 2007b).

Reclamation suitability criteria are based upon the inherent ability of the soil to recover from degradation often referred to as soil resilience. The ability to recover from degradation means the ability to restore functional and structural integrity after a disturbance. Both the rate and degree of recovery need to be considered. Soil functions that are important include sustaining biological activity, diversity and productivity; capture, storage and release of water; storing and cycling nutrients and other elements; filtering, buffering, degrading, immobilizing and detoxifying contaminants; and providing support for plant and animal life.

Factors for reclamation suitability include relative risk of water and wind erosion, salinization, sodification, organic matter and nutrient depletion, effective precipitation, and the loss of adequate rooting depth to maintain desired plant communities. Steep slopes increase the vulnerability to water erosion. Low available water capacity, shallow rooting depth, and excess salt or sodium can reduce plant diversity, resistance to stress, and seedling survival. Inadequate precipitation limits seedling survival and species selection for reclamation.

Table 3.46 depicts the approximate surface and subsurface acreage amounts associated with each class. A map that displays the SMUs with a poorly suited rating (Map W.12) can be found on the internet at <http://blm.gov/8qkd>.

<i>Reclamation Suitability Rating Class</i>	<i>BLM Land</i>	<i>Federal Mineral Estate</i>
Well Suited	444,658	875,197
Moderately Suited	457,610	853,079
Poorly Suited	1,533,484	2,422,506

Source: GIS calculated acres using NASIS datasets in an Access Database Template given by USDA-NRCS (Montana State Office -Bozeman) in August 2007.

**Prime farmland** is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods. In general, prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium, and few or no rocks. Its soils are permeable to water and air. Prime farmland is not excessively eroded or saturated with water for long periods of time, and it either does not flood frequently during the growing season or is protected from flooding (7 CFR 657.5 (a)). Approximately 15,462 acres of potential prime farmland soil mapping units are on BLM lands and approximately 131,598 acres are on the federal mineral estate (designated by the USDA-NRCS). Most of the prime farmland occurs along stream and river valleys and terraces as well as on gently sloping upland areas. To meet the criteria of a prime farmland unit, most soils on BLM lands would require additional moisture, such as dependable irrigation water which is lacking on BLM lands.

**Unique farmland** is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables (7 CFR 657.5 (b)). By definition, no unique farmlands occur within the planning area.

## Solid Minerals

### Leasable

Mineral resources are managed under the Mineral Leasing Act of 1920. Coal is a leasable solid mineral with occurrence potential in the planning area; however, no leases have been issued, no production is occurring, and the potential for development is considered to be low enough that there is no interest in obtaining leases. Factors contributing to this lack of potential include the poor coal quality as well as the prominence of thin, discontinuous beds which are not amenable to surface mining. Much of the coal in the planning area is contained in beds less than five feet thick.

In the western portion of the planning area, small portions of western Liberty, northern Chouteau, and southwestern Blaine Counties contain the only assumed recoverable coal deposits. These coal deposits are contained in the Upper Cretaceous age Eagle, Judith River and Hell Creek formations and in the Tertiary age Fort Union formation. Past coal production in the area was predominantly from numerous, very small underground operations. An estimated 850,000 tons of coal was mined for local use from the Big Sandy and Milk River coal fields in Blaine County between 1890 and 1960 (USBOM 1966).

In the eastern portion of the planning area, coal beds are present in the Cretaceous Kootenai, Eagle, Judith River, and Fort Union formations. Coal has been reported at one location in the Jurassic Morrison formation on the flank of the Little Rocky Mountains uplift near Zortman. Generally, the coal in the planning area is classified as sub-bituminous in grade with a British Thermal Unit (BTU) rating of 8,300-11,500 BTUs per pound. The most likely area for development would be associated with a small area of Fort Union coal in Valley County. The coal there is near the western limit of the Scobey Lignite Field and contains the only surface minable coal identified in the planning area.

The planning area has no occurrence potential for phosphate, potassium, sodium, asphaltic material or oil shale resources.

## Locatable

The General Mining Law of 1872, as amended, allows the location and maintenance of mining claims on those federal mineral estate lands open for mining claim location and patent. The BLM manages the Mining Law program on federal mineral estate, including lands where the surface is private and the claimant does not receive written consent from the surface owner. BLM management includes authorizing and permitting mineral exploration, mining, and reclamation actions. For exploration or operations other than casual use, the operator is required to submit a Notice or a Plan of Operations under regulations at 43 CFR 3809. These regulations require all operations to be conducted in a manner that prevents unnecessary or undue degradation.

Management actions may recommend closures to mineral entry by withdrawing areas from further location of mining claims or sites and may apply mitigation needed to protect other resource values when conducting activities under the operation of the mining laws.

Potentially locatable metallic (gold, copper, lead, zinc and silver deposits), nonmetallic (bentonite), and precious to semi-precious (diamond/kimberlite) minerals exist in the planning area (based on historical mining, geology, and known deposits). Areas of occurrence of precious metal deposits (gold and silver) are confined to portions of the Sweet Grass Hills and the Little Rocky Mountains. Approximately 19,671 acres in the Sweet Grass Hills and 3,505 acres in the Little Rocky Mountains are currently withdrawn from locatable mineral entry, subject to valid existing rights, which means that no new mining claims can be filed on those lands and valid existing claims must be honored.

Several igneous intrusions about the size of a city block are found near the Missouri River Breaks region of Phillips and Blaine Counties. These intrusions originated at extreme depth from within the earth and are called diatremes. The composition of these diatremes is similar to kimberlite, which contains diamonds in South Africa and other diamond producing areas. To date, sampling and analysis of these diatremes has not revealed any occurrence of diamonds. Several mining claims have been located in this area and presumably have been located on these diatremes.

Bentonite is composed of clay minerals from the montmorillonite group. The clay commonly has great ability to absorb water and swell from 10 to 15 times its dry volume. Swelling properties of the individual clay minerals determine the commercial use of the deposit. Deposits of bentonite are generally created from metamorphism of volcanic ash deposited in a marine environment. The geologic formations that contain the most noted bentonite deposits are the Bearpaw shale of the Montana Group, and the Mowry shale in the Colorado Group. Although bentonite does occur in other formations, these are considered to have the necessary thickness and physical properties to contain commercial deposits. The Bearpaw shale in Phillips and Valley Counties contains commercial bentonite deposits. Mineable bentonite in the Glasgow area is from a middle member of the Bearpaw formation. The upper and lower bentonite beds in this formation are each two to three feet thick. The upper bed has the best quality, but is the most difficult to mine due to limestone and iron concretions.

Bentonite can be considered locatable, leasable or salable (under the mining and mineral leasing laws) depending on quality of the material and whether the mineral estate is public domain or acquired. At present there are no bentonite leases or sale permits within the planning area.

Commercial mining of bentonite has occurred across the state since the turn of the century. Up until the late 1970s the general use of bentonite in the Phillips and Valley Resource Areas was pit-run bentonitic shale for sealing stock ponds and lining canals.

In 1976, Federal Bentonite opened a small processing plant southeast of Glasgow. The bentonite mining claims were leased from the Brazil Creek Bentonite Company of Glasgow. This was an open pit mine with plant processing capacities of approximately 200,000 tons annually. The final product was used for production of taconite pellets (used in iron ore refining). The plant was in production until 1979 and processed less than a million tons of bentonite. Although the plant was shut down, bentonite was mined from 1983 through 1985. Federal Bentonite produced approximately 180,000 tons during that three-year period. The bentonite was solar dried and shipped in bulk by rail.

In 1978, after several years of exploration, American Colloid opened a bentonite processing plant in Malta. This was an open pit operation with the capabilities of processing approximately 250,000 tons annually. The final product was used for drilling fluid additives or in the production of taconite pellets for the iron industry. The bentonite deposits were just south of Malta, located along outcrops of the Bearpaw shale. Up to the time the plant closed in 1986, American Colloid had processed approximately one million tons of bentonite. The plant was forced to close due to lack of a market for oil and gas drilling mud additives and taconite pellets. In 1988, American Colloid withdrew its patent application on 28 mining claims due to lack of a market for bentonite.

Although no active mining of bentonite is occurring in the Glasgow area, 450 active, unpatented mining claims located for bentonite are controlled by S&B Industrial Minerals Inc., North America. In the past few years, work has included exploration drilling and a Plan of Operations for a small five acre bentonite mine. Any future mining would require a large infusion of capital investment and a clear market indication for any significant operation to be feasible.

Major markets for bentonite 20 to 30 years ago were the Canadian oil and gas industry and the Great Lakes iron ore (taconite) industry. At present there is no increase in demand from either industry. The surge in oil and gas production in northeastern Montana and northwestern North Dakota has occurred with no new bentonite projects being initiated in the planning area, and the taconite industry in the Great Lakes region is nearly defunct. The distance from this source area to available markets is the primary limiting factor.

Table 3.47 shows current active mining claims by county.

<i>County</i>	<i>Active Mining Claims</i>		<i>Commodity</i>	
	<i>Lode</i>	<i>Placer</i>	<i>Lode</i>	<i>Placer</i>
Blaine	40	0	gold	
Chouteau	0	0		
Glacier	0	0		
Hill	0	0		
Liberty	15	0	gold	
Phillips	32	201	gold	bentonite
Toole	6	0	gold	
Valley	0	450	bentonite	

Source: BLM LR2000 (2009).

## Salable

Salable minerals were designated under the Materials Act (July 1947), which authorizes the disposal of petrified wood and common varieties of sand, gravel, stone, pumice, cinders and clay through a contract of sale or free use permit. Uncommon varieties of these same minerals are locatable under the Mining Law. Management actions for salable minerals determine areas open or closed to mineral material development and identify mitigation needed to protect other resource values.

Salable minerals include, but are not limited to, sand, gravel, stone (e.g., decorative stone, limestone, and gypsum), clay (e.g., shale), limestone aggregate, and common clay; all of which occur within the planning area. These commodities are classified as industrial minerals and typically are characterized as high bulk, low value. As long as the development potential remains limited and the unit valuation remains low, mineral materials are not expected to be significant contributors to the mineral industry sector of the local economy.

The planning area contains deposits of sand and gravel that originated from fluvial and glacial sources. The BLM issues permits for the use of these materials. Most of the commercially developed gravel sources are privately owned. The

primary users of federally owned mineral material deposits are state and county governments which remove material under free use permits issued by the BLM.

Tertiary gravels make good material for road surfacing and construction projects. Most deposits contain adequate fines for roadwork, though some may require crushing. Some of the quaternary terrace deposits consist almost entirely of limestone pebbles and cobbles, and may not be as durable as deposits containing more igneous material.

The deposits of glacial origin contain a large percentage of igneous material. The amount of fines is variable depending on the specific depositional environment. The till or moraine material has a high clay content and makes a good low permeability liner for ponds and canals.

In the past, chemical grade limestone has been mined from the Beaver Creek area in the Little Rocky Mountains for use as caustic lime at the Zortman/Landusky Mine.

Extensive deposits of bentonitic shale (common clay) occur throughout the planning area. This material is useful in construction projects where low permeability barriers are required such as for reservoirs or irrigation canals. When active, the Zortman/Landusky Mine used bentonitic shale as liner material for cyanide leach pad and pond construction. Several hundred thousand cubic yards of bentonitic shale have been mined from BLM lands within 10 miles of the Zortman/Landusky Mine. This production ended when the mine closed and future use of similar material is not anticipated to be significant.

The entire planning area typically experiences a relatively low and steady level of salable minerals disposal activity. The primary commodity produced within the planning area is sand and gravel. Table 3.48 shows current gravel pits by county and estimated average annual production.

<b>Table 3.48 Active Gravel Pits on BLM Land in the Planning Area</b>		
<i>County</i>	<i>Mineral Materials Sites</i>	<i>Average Annual Production (estimated) (cubic yards)</i>
Blaine	4	5,000
Chouteau	1	1,000
Glacier	0	0
Hill	0	0
Liberty	0	0
Phillips	9	10,000
Toole	4	5,000
Valley	9	5,000

Source: BLM LR2000 (2009).

## Special Designations

### Areas of Critical Environmental Concern

#### *Existing ACECs*

#### **Azure Cave ACEC**

The Azure Cave ACEC (141 acres) was designated in 1994 to protect cave resources and potentially the northernmost bat hibernaculum in the United States. Azure cave is a limestone solution cavern located near Zortman in the Little Rocky Mountains (shown on Map K.1 in Appendix K). The cave has national significance because of its bat

hibernaculum values. A colony of nine bat species including little brown myotis (*Myotis lucifugus*) and least brown bat (*Myotis leibii*) occupies the cave during the winter.

Azure Cave is located at an altitude of 4,465 feet. The inner temperature is 41°F. The entrance is a 20-foot diameter opening on the south side of a steep canyon. At the rear of the entrance, a 6-foot-high passage leads into the top of a large room (Big Room); a 70 foot drop is required to reach its floor. Big Room has two pits leading downward to the lower level; the pits are about 40 feet deep and require rope for descent. Most of the lower level is horizontal and contains several rooms connected by small crawlways. One crawlway leads upward to a series of small rooms and dome pits. Many of the rooms are partly clay filled, and most of the crawlways are plugged with red clay after a short distance. Several false floors in the cave are probably due to cementation of the upper clay by vadose water and then excavation of clay under the false floors. Many stalagmites are built on these false floors. The cave reaches a depth of -220 feet and has 1,580 feet of mapped passage (Campbell 1978).

The cave contains a significant amount of speleothems. The lower level has many stalactites and stalagmites, some of which are more than 6 feet long. Cave popcorn and flowstone decorate the walls of the cave. In one room, very large clusters of helectites are found that are probably the best in Montana. The cave is still active and wet; the formations are still growing. A large colony of bats occupies the cave during the winter (Campbell 1978).

Azure Cave was again surveyed in 1979 (Chester, et al. 1979). An additional 298 feet of passage was mapped, bringing the length of the cave to 1,878 feet. They identified this as one of two known caves in the Northwest that contains hibernating bats. Because of the cave importance as a hibernaculum the report also recommended that entry by the public take place only between June 15 and August 15 each year during the absence of hibernating bats (Chester, et al. 1979).

Unrestricted access to the cave could represent a hazard to people inexperienced with caves and cave features, so only experienced cave explorers with knowledge of vertical caving techniques are allowed in it after receiving a permit from the BLM.

The lands were transferred to the BLM from the National Forest System by Public Land Order No. 3938 on February 23, 1966. This order withdrew 139.41 acres around the entrance to the Azure cave for the protection of public recreation values and the significant cave values and resources it contains. This withdrawn area is within the ACEC boundary. The withdrawal removed the land from all forms of appropriation under the public land laws, including the mining laws (30 U.S.C. Chapter 2) and reserved it under the jurisdiction of the Secretary of the Interior for the protection of public recreation values. The withdrawal does not alter the applicability of the public land laws governing the use of the land under lease, license, or permit, or governing the disposal of their mineral or vegetative resources other than under the mining laws.

### **Big Bend of the Milk River ACEC**

The Big Bend of the Milk River ACEC (1,972 acres) was designated in 1994 to protect and manage archaeological resources, including the Henry Smith and Beaucoup sites, which represent bison hunting and prehistoric ceremonial use of the Northwestern Plains. The Henry Smith site is managed for interpretation and the Beaucoup site is managed for research.

The Big Bend area of the Milk River, northeast of Malta (shown on Map K.2 in Appendix K), has a high density of archaeological resources, many with rare or unique characteristics and scientific values. The cultural resources are between 1,000 and 2,000 years old and provide an exceptional opportunity for the study of relatively pristine sites encompassing a broad range of cultural functions established during a short period of prehistory. Sites include prehistoric bison kills in the form of traps, jumps and pounds with associated drivelines; prehistoric ceremonial and religious locales such as petroglyph boulders, medicine wheels, intaglios and burials; and complex habitation and resource exploitation manifestations characterized by large numbers of stone circles and cairns.

Two archaeological sites have been determined eligible for the National Register of Historic Places (NRHP) (24PH188 and 24PH189). Collectively termed the Beaucoup Site Complex, the two sites represent the nearly intact archaeological remains of Besant and Avonlea bison hunting cultures in primary archaeological context.

The Henry Smith Buffalo Jump Site (24PH794), an Avonlea bison kill site, is also considered eligible for NRHP listing. This site contains bison kill areas, drive lines, meat processing areas, petroglyph boulders and numerous concentrations of tipi rings and intaglios.

Vegetation types in the area include grassland, grassland-sagebrush and woodland. The latter type occupies a narrow strip of land along the Milk River and in coulee bottoms. Tree and shrub species include chokecherry, common snowberry, creeping juniper, plains cottonwood, silver sage, big sage, rose, silver buffaloberry, willow, box elder and a half shrub, fringed sagewort. Grass species include blue grama, green needlegrass, western wheatgrass, inland saltgrass, little bluestem, needleandthread, plains muhly, and prairie junegrass. The ACEC has no known endangered, sensitive, or threatened plant species. It may contain small patches of noxious plants (Canada thistle, leafy spurge, and knapweed).

Topography in the area varies from gentle rolling grasslands to level terraces along the Milk River, to river breaks composed of exposed shales, clays, and sandstones.

### **Bitter Creek ACEC**

The Bitter Creek ACEC (60,701 acres) was designated in 2003 for its scenic diversity and variety of vegetation types and wildlife habitats. The ACEC (as shown on Map K.3 in Appendix K) is the same area as the Bitter Creek WSA in Valley County. Since this is a WSA, current management of this area is guided by BLM Manual 6330-Management of BLM Wilderness Study Areas, until Congress determines its eligibility into the National Wilderness Preservation System. If Congress does not designate this area as wilderness, a plan for management of the ACEC would be developed through a public process and initiated within two years. Following release by Congress and until an ACEC management plan is completed, the ACEC would be managed under BLM Manual 6330 as an extensive recreation management area where a limited commitment of resources will provide dispersed and unstructured recreational activities.

Numerous cultural sites are known to occur in the vicinity of the ACEC. Prehistoric inhabitants of this area were semi-nomadic hunter-gatherers. They were dependent on the abundant bison, pronghorn, deer and elk of the region as well as seasonally important plant species. They left behind chipped stone tools, fire hearths and tipi rings. These prehistoric features are still visible in the ACEC. This region was later homesteaded and cultural features associated with farming and raising livestock are also in the area.

Major recreation interests include hunting, wildlife viewing, hiking, sightseeing, nature study, and photography. Other recreational uses include camping, backpacking, and visiting homesteads. This area is managed for sparse use which is appealing to individuals who value challenge, remoteness, harsh conditions, risk taking, pioneering, self-reliance, and minimal social encounters. This semi-primitive nonmotorized area diversifies the recreation opportunities in northeastern Montana.

Seventy percent of the soils consist of shallow to moderately deep Lisam and Dilts soils on shale uplands. Surface runoff is rapid and water erosion hazard is severe. Thirty percent of the soils are mainly Phillips, Elloam and Thoeny. They are deep, well drained soils on glaciated uplands. Surface runoff is medium and water erosion hazard is moderate.

The Bitter Creek ACEC is located in the glaciated Missouri Plateau. Land characteristics of this area include rolling terrain, denuded badlands, and lush riparian areas. The major drainages support shrubs, willows, and cottonwood trees. Large plateaus converge into rugged eroded breaks. There are some high cliffs and classic badlands type areas. A "blow-out" type of landscape exists where the shale soils are held in place by horizontal juniper, buffaloberry, and a variety of small shrubs.

The Bitter Creek ACEC contains a variety of plant communities in healthy condition, including riparian, wetland, shortgrass prairie benches, woody draws, and shale badlands. The ACEC is within the Grama-Needlegrass-Wheatgrass (*Bouteloua-Stipa-Agropyron*) Potential Natural Vegetation type (Kuchler 1966) and is representative of this type in late successional status. The wooded draws include buffaloberry, Rocky Mountain juniper, green ash, chokecherry, and less commonly aspen.

The dominant vegetation of the stream channels is a sedgerush and/or streambank willow community at the wettest zone with rose-snowberry, buffaloberry and silver sagebrush with western wheatgrass, green needle grass, Canada wildrye

and other deep rooted perennial grasses at the upper terrace level. Tree cover is very limited; species include green ash, plains cottonwood and peachleaf willow.

Minimal visual intrusions do not detract from the scenic experience. Scenic qualities include the vast, unhampered domain; lack of facilities such as paved roads, buildings, and billboards; and spatial organization such as line, form, visual compositions that dominate the landscape. These visual compositions can be defined as vegetation characteristics, geological features, visual clarity, and social imprints.

The entire ACEC is within the Willow Creek watershed. No perennial streams are located in this area and existing waters in reservoirs and seasonal runoff contain high levels of salts. Willow Creek, Bitter Creek, Chisholm Creek, and Eagles Nest Coulee are the primary stream courses in the ACEC.

The Bitter Creek area combines a lack of road development with a variety of habitats that support diverse grassland wildlife species. Included in this area are excellent examples of prairie riparian, wetland, grassland, woody draw, and breaks habitats. Migratory game, upland game and nongame birds; raptors; game and nongame resident wildlife; fur-bearing species; predatory wildlife species; amphibians and reptiles are present in the area either yearlong or seasonally. The predominant wildlife species in the area are ones that migrate. Game species include mule deer, pronghorn antelope, sharp-tailed grouse, and Greater Sage-Grouse. The sensitive species that could use the area at some time during the year include peregrine falcon, ferruginous hawk, loggerhead shrike, northern goshawk, Baird's sparrow, canvasback, common loon, long-billed curlew, Swainson's hawk, and burrowing owl.

A watchable wildlife area is situated on the eastern rim where hawks and eagles can be seen soaring over the ACEC. This rim differs in elevation by as much as 600 feet from the floor of the ACEC.

### **Kevin Rim ACEC**

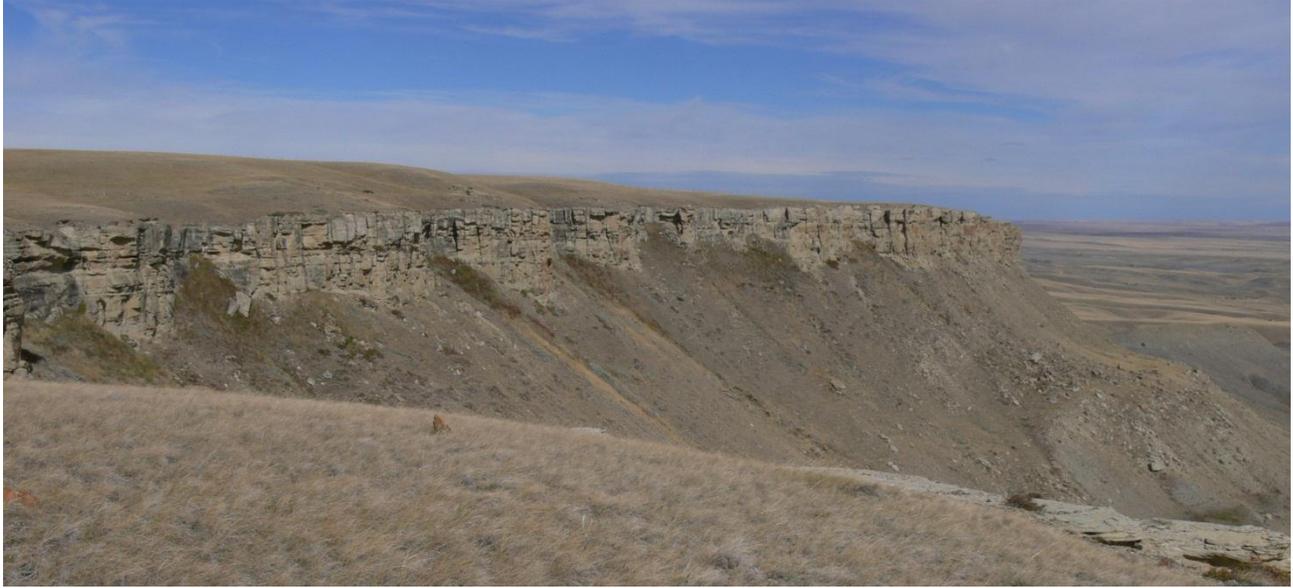
The Kevin Rim ACEC (4,557 acres) was designated in 1988 to protect, maintain, and/or enhance the peregrine falcon habitat, other sensitive raptor habitat, and cultural resources while encouraging other types of multiple use activities to the extent they are compatible with the ACEC designation. This ACEC is located in Toole County, and is shown on Map K.5 in Appendix K.

Archaeological resources in the ACEC are significant. Kevin Rim is a major escarpment located near numerous lakes and ponds. The area offered excellent buffalo hunting opportunities during prehistoric and early historic times. The rim was used for jumps which involved driving the buffalo over the edge to be killed by a fall of over 60 feet. The buffalo were then processed and consumed on the plains below as evidenced by hundreds of occupation sites along the base of the rim and extending outward for several miles. Most of the sites consist of stone circles, or tipi rings, and many of these are quite extensive (one site covers 160 acres and contains almost 300 tipi rings).

Most of the oil and gas resources within the Kevin Rim area are located in the Kevin-Sunburst field and the Amanda gas field. The discovery well for the Kevin-Sunburst field was drilled in March of 1922. By 1930, approximately 400 oil and gas wells had been drilled. By this time the margins of the field were fairly well defined (except for the west side) and it was quite obvious this area contained a large volume of oil and gas.

Kevin Rim serves as a primary breeding and nesting area for a number of raptors including state sensitive species such as the golden eagle and ferruginous hawk. Other raptors using the rim include the prairie falcon and rough-legged hawk. The steep, south facing walls of the rim provide optimum habitat for raptor breeding and nesting and is an uncommon feature in this area of gently rolling plains. Yearlong raptor use of the rim also occurs. Most raptors, including those using the rim, are quite susceptible to disturbance. This is especially crucial during the breeding and nesting period and may be a significant factor limiting maximum raptor use of the rim.

Kevin Rim also has potential high value habitat for peregrine falcons. No known use of the rim is presently occurring. However, peregrine falcons have used a nest site on Kevin Rim in the past. The rim has been identified as a peregrine reintroduction site.



Kevin Rim ACEC

Photo by Craig Miller

## Mountain Plover ACEC

The Mountain Plover ACEC (24,762 acres) was designated in 2003 to provide natural habitat for the mountain plover, a prairie bird. The ACEC is located in south Valley County, Montana and is shown on Map K.4 in Appendix K. The eastern corner of the area is in the Milk River Basin, approximately 20 miles west-southwest of Glasgow, Montana.

This ACEC contains breeding habitat for mountain plovers. The area is unique because the hardpan areas along Beaver Creek provide habitat for mountain plovers away from traditional habitat associated with prairie dogs. The area contains approximately 160 mountain plovers, which is greater than 1% of the global population of this species. The area is also recognized as a Globally Important Bird Area by the National Audubon Society because of the numbers of breeding mountain plovers in the area.

Numerous cultural inventories have been conducted in south Valley County which have resulted in the discovery of cultural sites. These are generally small prehistoric sites consisting of stone tools, remnants of fire pits or hearths, stone cairns, and tipi rings. The area also contains cultural features associated with farming and raising livestock.

Dispersed recreation opportunities exist within this area being used primarily for hunting and OHV travel. The primary season of use is September 1 through December 1.

A common soil along the watercourses is a Vaeda silty clay. This nearly level and gently sloping soil (0 to 3%) is on fans and terraces. The Vaeda series consists of deep, well-drained soils that formed in alluvium deposited by water from ancient rivers. Permeability is very slow. The available water capacity is low or moderate. They have a high content of sodium (alkali) which causes a dispersed condition, and intake of water into the soil is restricted. This soil is subject to rare flooding. Surface runoff is medium to rapid. The hazard of wind erosion is slight and the hazard of water erosion is moderate. A common term to describe these soils is “hardpan.” Mountain plovers were found to primarily use these areas.

Surrounding the Vaeda silty clay soils are predominantly Lisam-Dilts clays with Thebo-Lisam clays, with 5 to 35% slopes. The ACEC consists of undulating to strongly rolling soils on uplands. The soils occur in an unpredictable pattern on the landscape. In places cobbles and stones are on the surface. Surface runoff is rapid. The hazard of wind erosion is moderate and the hazard of water erosion is severe.

The major upland vegetation types that occur in this area include the grass, big sagebrush/grass, and saltbush types. Clubmoss does not cover any appreciable amount of land in this area. Nuttall's saltbush is the dominant plant on broad

alluvial valleys associated with sedimentary badlands. Associated grass species include Sandberg bluegrass and western wheatgrass. Important forbs include prickly pear, wild onion, and wild parsley. Greasewood is often associated as a fringe type.

Mountain plovers primarily use the Nuttall's saltbush habitat on the valley bottoms. On the gentle rises on either side of the valleys is the wild buckwheat habitat. Both habitats have an extremely low vegetative height profile (4 inches) and large amounts of bare ground, primarily found in the bottom lands of the major drainages. Other habitats used by the mountain plovers included bentonitic soils dominated by a sparse growth of knotweed species, low rises in the bottom lands containing almost pure stands of blue grama, and shale soils with western wheatgrass. This latter habitat occurs on the ridge sides among the horizontal juniper habitat. Other similar appearing areas of vegetation (or lack of vegetation) are elsewhere in south Valley County and also in north Valley County, but are not as extensive.

This ACEC is within the Little Beaver Creek watershed. The area drains into Willow Creek, which flows into the Milk River downstream of Glasgow. Water quality is limited by salt content and high sedimentation rates due to the sparsely vegetated shale uplands. Grub Reservoir is the only large waterbody and covers 250 acres.

### **Prairie Dog Towns within the 7km Complex ACEC**

The Prairie Dog Towns within the 7km Complex ACEC (16,403 acres) were designated in 1994 to provide additional management of prairie dog habitat for black-footed ferret reintroduction and long-term ferret recovery, associate species (mountain plover, burrowing owl, and ferruginous hawk), recreational viewing, and prairie dog shooting. The ACEC is shown on Map K.6 in Appendix K.

The Prairie Dog 7km Complex is in the southern portion of Phillips County. This area contained a significant amount of high quality habitat for endangered black-footed ferret. Prairie dogs are essential as the primary prey species for the black-footed ferret. The 7km Complex is based on the USFWS habitat assumptions for ferret management: the area encompasses two or more prairie dog towns that are not more than 7 kilometers apart (Biggins, et al. 1989).

The black-footed ferret, thought to be nearly extinct, was rediscovered at Meeteetse, Wyoming late in 1981 and a successful captive breeding program allowed USFWS to plan reintroduction of the ferret in its natural environment. In 1986, the Montana Black-Footed Ferret Working Group proposed eight possible reintroduction sites (Clark, et al. 1987). In 1987, they narrowed the selection to the top four Montana sites which were all in or associated with the Phillips Resource Area. The four sites were further evaluated after additional inventory data in 1988, and a paper by Clark and Minta (1989) selected this as the best possible site for reintroduction of the ferret in Montana.

The area still contains many acres of prairie dogs, but the overall acreage of prairie dogs is greatly reduced due to the presence of plague, and the ferret reintroduction effort has not succeeded here because of the reduction in prey.

### **Sweet Grass Hills ACEC**

The Sweet Grass Hills ACEC (7,419 acres) was designated in 1992 to protect habitat which has high potential for reintroduction of the peregrine falcon; protect areas of traditional spiritual importance to Native Americans; and protect seasonally important elk and deer habitat and aquifers in the area that provide potable water to local residents. The area is also unique because of its gold, coal, silver and copper mining history. The ACEC is comprised of West and Middle Buttes, which are located in northeastern Toole County, and East Butte, which is located in northern Liberty County. The entire ACEC lies within the Sweet Grass Hills TCP. The ACEC is shown on Map K.7 in Appendix K.

The Sweet Grass Hills are important to the Blackfeet, Chippewa-Cree and Gros Ventre tribes for their traditional use. Numerous published and unpublished sources document this importance. For example, the Sweet Grass Hills were noted as important to traditional Blackfeet religious activities in the Congressional report on the American Indian Religious Freedom Act hearings in 1978. The Gros Ventres are reported to have used Middle Butte and Porcupine Butte for vision quests in the late 1880s. Modern religious use of Mount Brown by members of the Rocky Boy's Reservation is documented in BLM files. The Sweet Grass Hills offer the solitude and undisturbed environment which are key elements for traditional uses. Documented archaeological sites on the summit of Mount Royal and on the slopes of West Butte consist of the remains of structures regarded by Plains archaeologists as vision quest structures.

Soil types include loamy and clayey soils on fans and footslopes of mountains and foothills; loamy and clayey soils on forested mountains; loamy and loamy-skeletal soils on bedrock ridges and footslopes of mountains; and medium texture soils on terraces, footslopes, and fans.

Gold prospecting was widespread on East Butte near the turn of the century. The principal areas of placer mining were on Tootsie Creek and on the south slope of East Butte.

At the Sweetgrass Mine on East Butte, several tons of copper, lead, zinc, and 651 ounces of silver were produced before it was abandoned. In 1966, the Anaconda Company smelted 100 tons of a high silica ore containing lead, copper, silver, and traces of gold from the vicinity of the Brown-eyed Queen Mine.

Historical records and physical evidence indicate exploration interest in lode and placer deposits on all three buttes within the Sweet Grass Hills at various periods through the early 1960s. Approximately 2,000 ounces of gold from placers near Gold Butte within the Middle Butte complex is the only reported production (BLM 1996b).

Contemporary exploration in the Sweet Grass Hill commenced in the early 1970s. Several companies have had exploration interest in all three buttes, particularly in the Tootsie Creek area of East Butte, up through to the early 1990s. In 1993, the BLM completed the validity examination of 14 unpatented mining claims on East Butte as a result of the area being segregated for evaluation of Native American traditional interests and hydrologic concerns. The results indicated eight of the claims meet the test of discovery under the mining law and were valid. (BLM 1996b). The BLM currently has no Notices for exploration or Plans of Operation in the Sweet Grass Hills. The area is currently withdrawn from mineral entry and location. The withdrawal will expire in 2017.

Stone and riprap have been extracted from quarries in the intrusives in the Sweet Grass Hills. An inactive riprap quarry is located on a patented mining claim in Section 32, T. 36 N., R. 5 E. The Bureau of Reclamation has a withdrawal in Sections 29 and 32 for preserving riprap sources needed for reclamation projects. However, no riprap sources were ever developed on the withdrawn lands.

The Sweet Grass Hills also provide excellent habitat for elk, mule deer and white-tailed deer. The forested habitat, topographic relief, and lush drainages are unique to the prairies of northern Montana. Elk inhabiting East Butte tend to concentrate during winter on the east side in the general locale of Mount Lebanon. Here they use the windswept (mostly warmer, southerly exposures) slopes where grasses are available, while bedding in the nearest timber where thermal cover provides protection. Elk on West Butte use southern exposures in the winter.

Mule deer also prefer the south-facing windblown slopes during the winter, concentrating at the prairie timber edges; however, mule deer are scattered throughout the Hills and heavy concentration areas are hard to pinpoint. Deer also form smaller wintering groups than elk; therefore, winter concentration areas are more numerous and scattered. Mule



Sweet Grass Hills ACEC

Photo by Kathy Tribby

deer use drainage bottoms, hay and alfalfa croplands during all seasons of the year. The use of some of the higher elevation timbered areas, dominated by public lands, is highest during the summer.

White-tailed deer are common to all drainages extending from the hills. The rank deciduous-shrub vegetation lining these drainages creates excellent cover as well as forage for whitetails. The heads of some of these drainages lie midslope in the hills and the deer habitat can extend for over 5 miles down their length. Hay cropland can be important feeding sites for the whitetails.

## ***Potential ACECs***

### **Frenchman Breaks ACEC**

The Frenchman Breaks ACEC (42,020 acres) is nominated to protect scenic values, fish and wildlife resources (crucial mule deer winter range, diversity of wildlife and native fish), and an unfragmented fragile landscape.

The Frenchman Breaks are located mostly in extreme northeastern Phillips County and partially in northwestern Valley County (see Map K.8 in Appendix K). The area provides habitat for a variety of wildlife species and important winter habitat for several big game species. For further information on this potential ACEC, see Appendix K.

### **Grassland Bird/Greater Sage-Grouse Priority Areas ACEC**

The Grassland Bird/Greater Sage-Grouse Priority Areas ACEC (461,220 acres) is nominated to protect habitat for Greater Sage-Grouse, Sprague's pipit, and other sagebrush and grassland-dependent species and protect this habitat from fragmentation.

The Grassland Bird/Greater Sage-Grouse Priority Areas are located in north Valley and Phillips Counties (see Map K.14 in Appendix K). The area provides relatively unfragmented habitat for multiple special status species birds including USFWS candidate species Greater Sage-Grouse and Sprague's pipit, and BLM sensitive species long-billed curlew, Baird's sparrow, McCown's longspur and chestnut-collared longspur. For further information on this potential ACEC, see Appendix K.

### **Greater Sage-Grouse Protection Priority Area ACEC**

The Greater Sage-Grouse Protection Priority Area ACEC (930,265 acres) is nominated to protect habitat for Greater Sage-Grouse and other sagebrush-dependent species and protect this habitat from fragmentation.

The Greater Sage-Grouse Protection Priority Area is located in southern Valley and Phillips Counties (see Map K.15 in Appendix K). The area provides a large expanse of high quality Greater Sage-Grouse habitat. For further information on this potential ACEC, see Appendix K.

### **Little Rocky Mountains ACEC**

The Little Rocky Mountains ACEC (27,177 acres) is nominated to protect prehistoric and historic archaeological resources and spiritual and traditional resources. Located in western Phillips County, the area is shown on Map K.17 in Appendix K.

Cultural resources consist of both prehistoric and historic archaeological resources, and spiritual and traditional resources. For further information on this potential ACEC, see Appendix K.

### **Malta Geological ACEC**

The Malta Geological ACEC (6,153 acres) is nominated to protect paleontological resources. The proposed ACEC location (Map K.9 in Appendix K) has a high likelihood for the presence of rare and significant vertebrate and non-vertebrate fossil remains.

The area is known in the local, national, and international paleontological community for producing some of the more unique vertebrate specimens. For further information on this potential ACEC, see Appendix K.

### **Woody Island ACEC**

The Woody Island ACEC (32,869 acres) is nominated to protect habitat for grassland-associated birds, including Montana BLM species of concern.

The Northwest Woody Island ablation moraine is a block of intact grassland habitat entirely on public land (22,411 acres) which is located in northern Blaine County and bordered by Canada to the north. The portion in Phillips County (9,699 acres) is also entirely on public land. It is separated from the Blaine county portion by six miles of mostly private land and is located two miles south of Canada. See Map K.10 in Appendix K.

### **Zortman/Landusky Mine Reclamation ACEC**

The Zortman/Landusky Mine Reclamation ACEC (3,575 acres) is nominated to promote successful reclamation, protect associated infrastructure, and ensure public safety on BLM lands affected by prior mining activities. For further information on this potential ACEC, see Appendix K and Map K.11.

## **National Historic Trails**

### **Lewis and Clark National Historic Trail**

The Lewis and Clark National Historic Trail was designated in 1978 in recognition of the historic expedition by Lewis and Clark in 1804-1806. A portion of the Marias River exploration trail of the Lewis and Clark National Historic Trail (the trail explored by Meriwether Lewis while exploring the Marias River in 1805 during the outbound journey and in 1806 during the Expedition's return journey) crosses BLM land.

### **Nez Perce National Historic Trail**

On October 6, 1986, the Nez Perce National Historic Trail was designated in recognition of the national significance of the 1877 conflict that began in Lapwai, Idaho, and ended at the Bears Paw Mountains where the Nez Perce surrendered on October 5, 1877. A portion of the Nez Perce National Historic Trail crosses BLM land north of the Upper Missouri River Breaks National Monument.



Lewis and Clark National Historic Trail on the Upper Marias River

Photo by Craig Miller

## Watchable Wildlife Areas

Four Watchable Wildlife Areas are located on BLM land within the planning area: BR-12, Lonesome Lake, Wards Dam, and portions of the Northeastern Plains Birding Trail.

The BR-12 Watchable Wildlife Area is located in northern Blaine County. This 200 acre prairie marsh in the midst of open grasslands is narrow and long, and is a great place to view ducks, Canada geese, golden eagles, ferruginous hawks, Swainson's hawks, shorebirds, and songbirds for much of the year.

The Lonesome Lake Watchable Wildlife Area is located in Chouteau County and is a unique prairie wetland complex. The shallow lake provides a resting spot for migrating waterfowl and shorebirds, especially in the spring. Look for pintails, mallards, blue winged teal, gadwalls, shovelers, willets, American avocets, and dowitchers. Occasionally tundra swans and snow geese have been spotted.

The Wards Dam Watchable Wildlife Area is located in north Valley County near the Bitter Creek WSA. This small prairie marsh provides open water and cattail habitat for a variety of waterfowl such as pintails and pied-billed grebes and other wetland-dependent species. The wetland is surrounded by rolling grasslands teeming with grassland birds such as Sprague's pipits and sharp-tailed grouse.

The Northeastern Plains Birding Trail is comprised of thirteen specific locations within northeastern Montana, of which only two are located on BLM land: one at the Camp Creek Campground within the Little Rocky Mountains and the second within the Bitter Creek WSA north of Glasgow. This vehicle-based trail showcases three National Wildlife Refuges, two campground/recreation areas, several Wildlife Management Areas, a National Historic Site, a National Park, a city park, and numerous tracts of public land.

- The Camp Creek Campground Watchable Wildlife Area within the Little Rocky Mountains is the first island mountain range visible from U.S. Highway 2 for travelers heading west and is a haven for mountain and forest wildlife, from pinyon jays in pines to bighorn sheep in mountain meadows.
- The Bitter Creek Wilderness Study Area north of Glasgow is part of a globally-important bird area that harbors pipits, longspurs, and grassland sparrows, and is the only place on the Northeastern Plains Birding Trail to see the swift fox.

## Wild and Scenic Rivers

The BLM has identified and evaluated various river segments to determine their potential inclusion in the National Wild and Scenic Rivers System per Section 5(d) of the Wild and Scenic Rivers Act. Initial screening resulted in a list of 160 river and stream segments on BLM land for further consideration. Additional review focused on whether any of these 160 segments met free-flowing criteria and contained any outstandingly remarkable values, as defined in the WSR Act. Based on the review, 158 rivers and streams were determined to be free flowing, but only one river segment (Marias River) was determined to contain outstandingly remarkable values. The .75 mile segment of the Marias River from State Highway 87 near Loma downstream to the confluence of the Missouri River was found to be free-flowing and possess outstandingly remarkable fish and historic values. Appendix L, the Wild and Scenic Rivers Report of Eligibility and Suitability Determinations, includes a complete list of the rivers and streams that were assessed for free-flowing and outstandingly remarkable values.

## Wilderness Study Areas

### Bitter Creek Wilderness Study Area

The Bitter Creek WSA is located in Valley County, about 25 miles northwest of Glasgow and 18 miles south of the Canadian border. The WSA contains 60,701 acres in three roadless segments identified as Bitter Creek South, Bitter Creek West and Bitter Creek East.

The WSA consists of flat to rolling terrain varying less than 500 feet in elevation from south to north. Some extensive erosion resulting from glacial melt formed the denuded badland terrain through the center of the WSA. Vegetation consists of prairie grasses, creeping juniper, buffaloberry and other shrubs. Isolated stands of aspen and cottonwood are located in the drainages. The climate is semi-arid, characterized by fluctuations in precipitation and temperature, moderately low rainfall, low humidity, hot summers and cold winters.

Use in the WSA is mostly confined to the occasional outdoor enthusiast and grazing operators. Recreational use has primarily been by seasonal hunters. Some boundary signs have been installed at key access routes. Local demand to specifically use the WSA for wilderness values is minimal per year. The fall hunting season creates extensive use of primitive routes within the WSA and unauthorized cross-country travel. This area is also described in further detail in the *Existing ACECs*, Bitter Creek ACEC section above.



Bitter Creek WSA

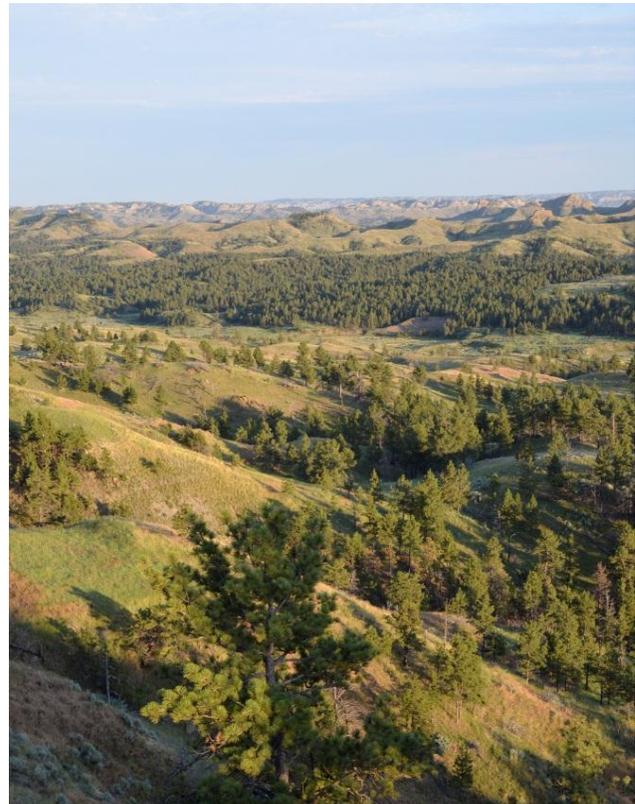
Photo by Kathy Tribby

### Burnt Lodge Wilderness Study Area

The Burnt Lodge WSA lies a mile north of the Missouri River in Phillips and Valley Counties. It is bounded by a combination of a road, private land, state land and BLM land. Except for the road, the boundary is difficult to follow on the ground. The southern border is contiguous with the Charles M. Russell National Wildlife Refuge. The WSA contains 13,727 acres.

Most of this WSA has a natural appearance. The unit has a typical river breaks topography formed by tributaries that drop mostly from the northwest to the river. The steep slopes are badlands, but the majority of the area is covered with low tablelands. Its topography and trees hide the few developments. The primitive routes lie along flat ridgetops that finger into the WSA from the north. Most show old signs of construction, but are seldom used and difficult to follow. A person can drop below the ridges to escape these imprints.

Use in the WSA is mostly confined to the occasional outdoor enthusiast and grazing operators. Recreational use has primarily been by seasonal hunters. Some boundary signs have been installed at key access routes. Local demand to specifically use the WSA for wilderness values is minimal per year. The fall hunting season creates extensive use of primitive routes within the WSA and unauthorized cross-country travel.



Burnt Lodge WSA

Photo by Brian Hockett

## Vegetation – Rangeland

Fire and grazing were integral components sustaining the native prairie ecosystem prior to European settlement. Current vegetation communities reflect the many influences serving to shape them since then. Existing vegetative land cover in the planning area is displayed on map W.13 available on the RMP website at <http://blm.gov/8qkd>. Human activities have affected rangeland and forest plant communities primarily through livestock grazing and dryland farming, although a variety of other activities such as timber harvesting, fire suppression, mining, oil and gas development, and introduction of exotic plant species can also be included. These activities have resulted in alteration of the natural fire regime, an increase in woody plant species, and alteration of nutrient and hydrologic cycles. Alteration of the natural fire regime has likely had the greatest influence on native plant communities of any single ecosystem component; however, recent studies indicate that change from a natural grazing scenario, whereby herds of migrating animals used the landscape in a high-intensity, short-duration mode, to most currently managed livestock grazing systems, where grazing tends to be lower intensity but for a longer duration, may have had more impact than previously suspected.

Grassland communities, indicative of the climate, are the most prevalent of all community types across the planning area. Livestock grazing serves to maintain the health and functionality of the native prairie we know today, which provides a diversity of heterogeneous vegetation communities across the landscape.

Generally, most grass species are adapted to frequent fire intervals. It is widely thought that under natural conditions these grassland communities burned every five to seven years. With successful fire suppression over the last century, many grasslands are becoming shrublands, with an associated loss of habitat features provided by grasslands. Additionally, increased shrub growth increases the risk of high severity fires that alter soil and vegetation characteristics, increasing the risk of invasion by noxious weeds. With the addition of woody fuels from encroachment of trees and shrubs, the potential for very hot fires that burn duff and litter down to mineral soil has increased.

Two types of sagebrush communities can be found throughout the planning area. The silver sagebrush type is found in areas with well drained soils, while the Wyoming big sagebrush type is adapted to much drier sites and more clayey soils. Other commonly found species of shrubs include fringed sagewort, rabbitbrush, and winterfat. Large tracts of mature sagebrush communities were likely isolated and uncommon under natural conditions due to the frequency of the natural fire cycle (NRCS 2011). Most existing large tracts of sagebrush likely represent a disclimax, or aberrant plant community brought about from historic heavy grazing and fire suppression.

Other shrub communities occur in areas with unique site characteristics. Black greasewood and fourwing saltbush communities can be found in areas where more saline, heavy clay soils prevail. Woody draw shrub communities exist where soils are more productive and soil moisture conditions are favorable. These communities include chokecherry, currant, buffaloberry, snowberry, and aspen, which are particularly important to wildlife species, as well as green ash, box elder, and redosier dogwood.

The Frenchman Creek, Rock Creek, Milk River, Marias River, and Missouri River areas all have typical breaks type terrain. Breaks topography is rugged and supports relatively little vegetation due to steep terrain, shale and rock outcroppings, and an abundance of coarse clay soils.

Dense clubmoss (*Selaginella densa* Rydb.) is a major component of most upland vegetation communities, and is considered to be one of the main causative factors restricting improvement in ecological status where it has become dominant in the plant community. Once a site is dominated by dense clubmoss, a threshold is considered to have been crossed from which the plant community is unable to recover without considerable effort. Conversely, it also contributes to the stability of sites from decreases in ecological status and soil erosion. These sites are consequently very static. It is theorized that fire suppression and alteration of the natural fire cycle in an ecosystem where natural fires occurred frequently has in part allowed dense clubmoss to dominate many sites where it otherwise would likely have been suppressed.

Nonnative perennial communities are widespread across the planning area, by far the most common of which is crested wheatgrass, although annual bromes (e.g., cheatgrass) are increasing rapidly. When possible to manage as such, crested wheatgrass pastures can provide early season forage so grazing can be deferred on native rangeland. When intermixed

with native communities, however, it more often than not serves to increase grazing pressure on native species as livestock are reluctant to utilize the early maturing plant.

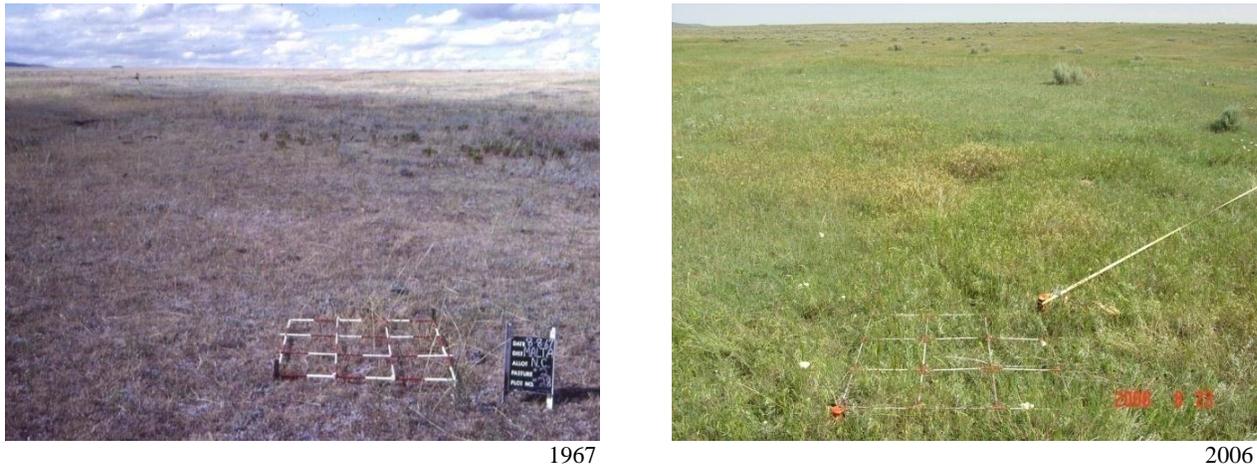
No major changes in existing vegetation composition across the planning area are expected to occur in the foreseeable future; however, some smaller scale, site-specific trends are likely to continue. Sagebrush will likely continue to increase in areas south of the Milk River, primarily in response to fire suppression and management activities that support alteration of the natural fire regime. Although the cause is unknown, a continued decline in woody-draw plant communities, primarily buffaloberry, will likely continue. Competition and encroachment from invasion of weedy species is likely to increase, particularly salt cedar encroachment from the Missouri River basin and knapweeds and leafy spurge from the west and the Milk River corridor. Currently, cheatgrass and annual bromes are rapidly becoming more prevalent in native communities, particularly in those areas occurring downwind of Conservation Reserve Program (CRP) fields (see Figure 3.13).

The first photo in Figure 3.13 was taken in 1967; the second was taken in 2006 at the same location. Note the prevalence of annual bromes in the foreground of the 2006 photo. Visual observations indicate the occurrence of annual bromes across much of the planning area now seems to be the norm, rather than the exception.

The factors that affect vegetation resources can be relatively obvious (e.g., wildfire, floods, logging, mining, and road construction) or more subtle (e.g., fire suppression, livestock grazing, or climate change).

Grasslands are adapted to, and to a certain extent require disturbance. How these disturbances are managed is generally more important than the type of disturbing factor itself.

**Figure 3.13**  
**Prevalence of Annual Bromes in 1967 versus 2006**



## Vegetation - Riparian and Wetland

Riparian and wetland communities are the transition zones between terrestrial and aquatic ecosystems. Riparian areas may be associated with lakes, reservoirs, estuaries, potholes, springs, bogs, wet meadows, and ephemeral, intermittent, or perennial streams. Because of the high productivity of riparian areas, they are very important resources for wildlife and livestock. The lush vegetation in riparian communities provides valuable food and cover. Riparian and wetland systems in the planning area are shown on map W.13 on the RMP website at <http://blm.gov/8qkd>.

BLM Manual 1737 defines wetlands as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and which, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, shallows, swamps, bogs, muskegs, wet meadows, estuaries and riparian areas.”

Jurisdictional wetlands, those that are regulated by the U.S. Army Corps of Engineers (COE) under Section 404, must exhibit all three characteristics: hydrology, hydrophytes, and hydric soils (COE 1987). It is important to understand that some areas which function as wetlands ecologically, but exhibit only one or two of the three characteristics, do not currently qualify as COE jurisdictional wetlands; thus activities in these wetlands are not regulated under the Section 404 program. Such wetlands, however, may perform valuable functions.

The typical prairie pothole on the glaciated plains is a wetland by the above definition because it supports vegetation adapted for life in saturated soil conditions. The typical pothole does not get flooded every year and often has water for only a short time, but when flooded it will support wetland vegetation.

Vegetative species common to riparian areas vary widely from site to site. Common species which occur in riparian areas are listed in Riparian Dominance Types of Montana (Hansen, et.al. 1988). Riparian communities along the perennial drainages and larger intermittent streams are often dominated by cottonwood and willow with occasional stands of green ash and box elder. The understory often consists of woody plants such as buffaloberry, snowberry, and Woods' rose, and grasses and forbs. The higher terraces adjacent to the floodplains are often dominated by silver sage or greasewood with a grass understory.

The West HiLine RMP/EIS (BLM 1992b), Judith-Valley-Phillips RMP/EIS (BLM 1994a), Rangeland Reform '94 EIS (BLM 1994b), and the grazing regulations (CFR 4100) provided extensive guidance on managing riparian areas in the early 1990s. Standards pertaining to riparian areas were identified in the grazing regulations and were further defined by the Standards and Guidelines (BLM 1997a) as Proper Functioning Condition (PFC). Riparian standard assessments have been accomplished through the watershed planning and permit renewal process that has occurred continuously since 1997.

Extensive riparian habitat inventory and vegetation monitoring has occurred within the planning area since the early 1990s. The areas were assessed using the Montana Wetland Riparian Association (MWRA) form developed by Hansen, et al. at Ecological Solutions Group. All riparian habitats are dependent on a balanced combination of physical (stream bank, channel, and soil characteristics), hydrologic (regular occurrence of surface water), and vegetative (hydrophytic communities) components. If any of those three components are negatively affected, the functional capacity of a riparian habitat may be degraded.

Riparian-wetland areas are properly functioning when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows and flooding, thereby reducing erosion and improving water quality. Vegetation filters sediment and aids in floodplain development, improving floodwater retention and groundwater recharge. Deep soil-binding root masses stabilize stream banks against erosion. Stream channels develop to provide diverse ponding and channel characteristics that support enhanced water quality, fish production, waterfowl breeding, and greater biodiversity.

Riparian areas are invaluable to the function of other resources in the planning area. These areas support the highest densities and diversity of breeding birds, including bald eagle, great blue heron, Swainson's hawk, waterfowl, and numerous migratory birds. They also provide crucial habitat for furbearers such as beaver, white-tailed deer, red fox, and coyote. Riparian and wetland areas are especially important to the livestock industry, in that they often produce 10-15 times the amounts of forage compared to drier upland sites. Riparian areas are also critical for stabilizing stream banks and shading to reduce water temperatures of streams that support trout and other cold water species.

Approximately 962 miles of lotic (flowing water) riparian habitat and approximately 53,667 acres of lentic (standing water) wetland habitats are currently identified on BLM land in the planning area. The estimated miles and acres of the functional condition of streams and wetlands in the planning area are displayed in Table 3.49.

<i>Streams in Proper Functioning Condition (miles)</i>	<i>Streams Functioning at Risk (miles)</i>	<i>Streams Nonfunctioning (miles)</i>	<i>Wetlands in Proper Functioning Condition (acres)</i>	<i>Wetlands Unknown Condition (acres)</i>
621	309	32	6,785	47,844

Source: BLM data (2007) and National Wetlands Inventory 1987.

It has been determined that an average of about 20% (68 miles) of the Functioning at Risk (FAR) and Nonfunctioning (NF) riparian zones along streams exhibited less than PFC at the time of assessment due to improper livestock grazing. As the functioning condition of riparian zones along streams improves or declines, which has occurred during the current RMP process, the reportable mileage varies. The BLM has implemented actions including riparian fences, livestock reductions, and updated grazing plans on 100% of the lotic riparian areas where the riparian zones were not meeting standards due to improper livestock grazing. Where trend information is available for lotic riparian areas that previously exhibited FAR, the trend is either improving or the riparian zones are moving towards or are now at PFC. Long-term trend is documented in the updated watershed reports and grazing permit renewal environmental assessments.

The lotic riparian miles that are FAR due to causes other than livestock grazing, which is roughly 80% of all FAR stream miles, are not meeting the riparian standard due to soils, weeds, road crossings, water control structures, and/or drought. Weed control measures have been taken over a large portion of the FAR riparian miles but little long-term trend information is available. The naturally occurring reasons for FAR riparian areas, such as soils and drought, are occurring in areas that will require extensive monitoring and science-based control measures that can be feasibly implemented by management.

Riparian areas can be impacted through natural processes or human activities. Natural processes include such things as drought, flood, fire and wildlife use; human-caused activities include livestock grazing, mineral extraction, oil and gas development, farming, and recreation. Improper grazing of riparian areas can affect the streamside environment by changing and reducing riparian vegetation. Roads within or close to riparian areas can also have negative effects on the riparian vegetation. They adversely affect these areas by vegetation removal, dust generation, sediment delivery to streams and associated wetlands, fragmentation by preventing channel migrations, and by increasing human activities such as camping and OHV use.

## Vegetation – Special Status Plants

Special status species of plants require particular management attention due to rarity and habitat concerns and include:

- federally listed threatened or endangered species and designated critical habitats;
- federally proposed species and proposed critical habitats;
- federal candidate species; or
- Montana BLM sensitive species.

The HiLine planning area has no federally listed threatened or endangered special status plant species or federally proposed species.

### Federal Candidate Species Plants

The USFWS added whitebark pine (*Pinus albicaulis*) to their candidate species list on July 19, 2011. The primary threat to the species is from disease in the form of the nonnative white pine blister rust and its interaction with other threats. Whitebark pine is also threatened by significant mortality from predation by the native mountain pine beetle. Past and ongoing fire suppression is also negatively impacting populations of whitebark pine through direct habitat loss. Environmental effects resulting from climate change also threaten the species through direct habitat loss and by exacerbating the effects of some of the other threats (USFWS 2011).

Whitebark pine is known from Glacier, Chouteau, Liberty and Toole Counties in the planning area. The only documented occurrences of whitebark pine on BLM land are in the Sweet Grass Hills. Kendall (1998) found both whitebark (five individuals) and limber pine (7 individuals) trees with dead, rust infection, and crown kill at similar rates. A subsequent, preliminary visit by the BLM to East Butte in September 2012 found dead, rust infection, and crown kills in both whitebark and limber pines. Two individual trees, one whitebark and one limber, were found to be living with rust infections and have been identified for cone collection and genetic testing for rust resistance. Future visits are planned to continue inventory and evaluation of both whitebark and limber pine on both East and West Buttes of the Sweet Grass Hills.

The Sweet Grass Hills population is currently the most northeastern known population of whitebark pine in the lower 48 states and occurs at lower elevations than other known populations through the U.S.

## Montana BLM Sensitive Species Plants

Montana BLM sensitive species occurring in the planning area include five plant species. Table 3.50 shows the species and their general habitat association.

<i>Common Name</i>	<i>Scientific Name</i>	<i>Status*</i>	<i>General Habitat</i>
Whitebark pine	<i>Pinus albicaulis</i>	Candidate	Subalpine and treeline habitats
Longsheath waterweed	<i>Elodea bifoliata</i>	Sensitive	Wetland
Dwarf woolyheads	<i>Psilocarphus brevissimus</i>	Sensitive	Wetland
Slender bulrush	<i>Schoenoplectus heterochaetus</i>	Sensitive	Wetland
Slender-branched popcorn-flower	<i>Plagiobothrys leptocladus</i>	Sensitive	Wetland

Source: MT IM-2009-039.

\* Candidate – USFWS Federal Candidate ; Sensitive – BLM Sensitive Species

Four BLM sensitive plant species are found in and around water and riparian areas. Not much is known of the status of these species in the planning area. General condition and trend of these habitats could be used to estimate the habitat conditions until the sites can be revisited and site-specific data collected. Effort is needed to inventory for these species and document habitat and trend conditions.

Long-sheath waterweed is known in the planning area from two sites in Phillips County. Six occurrences are known statewide. The aquatic habitat of this species is affected by drought and wetland modification to the lakes and ponds it occupies.

Dwarf woolyheads is found on two sites in the planning area, both in Phillips County, and six sites statewide.

Slender bulrush is known in the planning area from one site in Phillips County. Statewide, it is only known from two sites, the one in Phillips County and a second site in Sheridan County. Surveys in Sheridan County in 2000 failed to find the species. It had been observed as abundant in Sheridan County in the 1940s (Heidel, et al. 2000).

Slender-branched popcorn-flower is known in the planning area from one site in Phillips County. Five occurrences are known statewide.

## Visual Resources

Visual resource inventories for the planning area were completed during the development of the Missouri Breaks Grazing Environmental Statement (BLM 1979) and the Prairie Potholes Environmental Impact Statement (BLM 1982). These inventories evaluated the visual features of land, water surface, vegetation, and structures. The evaluations were then used to determine visual resource management (VRM) classes for the planning area.

## Visual Resource Management Classes

No VRM Class I ratings are currently assigned to the planning area. This class preserves the existing character of the landscape. It provides for natural ecological changes; however, it does not preclude limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. All VRM classes for the planning area are shown on Map 2.16.

Approximately 417,334 acres of BLM land (17%) are rated as VRM Class II and include the Bitter Creek and Burnt Lodge WSAs, Little Rocky Mountains, Frenchman Creek area, portions of the Milk River, Sweet Grass Hills, portions of the Marias River, portions of the Missouri Breaks north of the Charles M. Russell National Wildlife Refuge and the Upper Missouri River Breaks National Monument, and small acreages within the Bears Paw Mountains. This class retains 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.

Approximately 58,213 acres of BLM land (slightly more than 2%) are rated as VRM Class III. This includes small acreages in and around the Milk River, areas south of the Sweet Grass Hills, Kevin Rim, and the Lonesome Lake area. This class partially retains the existing character of the landscape. The level of change to the characteristic landscape could 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.

The remaining 1,961,928 acres of BLM land (81%) are rated as VRM Class IV. This class provides for management activities that 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.

**Visual Resource Inventory Classes  
and  
Visual Resource Management  
Classes**

*Visual resource inventory classes* are assigned through the inventory process. Class I is assigned to those areas where a management decision has been made previously to maintain a natural landscape. Classes II, III, and IV are assigned based on a combination of scenic quality, sensitivity levels, and distance zones.

*Visual resource management classes* are assigned through the resource management plan. The assignment is based on management decisions considering visual values, actions that may result in surface disturbances, and impacts on the visual values.

## Water Resources

The BLM manages water resources for resource values (e.g., watershed health, wildlife, riparian) and resource uses (e.g., recreation and water supply) within the framework of applicable laws, regulations, and agency policies. Water resources traverse BLM lands and are affected by BLM management activities.

## Hydrology and Watershed

This section addresses both surface water and groundwater quality and quantity. Watershed management is the protection, conservation, and use of natural resources of a specific watershed in a manner that keeps the soil mantle in place and productive. The BLM manages watersheds to ensure that water yield and quality are not degraded and meet the desired uses. Natural or human-caused vegetation and soil disturbance can ratify undesirable watershed responses (e.g., severe flooding or erosion). Surface-disturbing activities could affect watershed health by increasing sedimentation and erosion rates which can affect water quality.

Portions of the middle Missouri, Marias River, and Milk River basins are located within the planning area. Within these basins are 23 subbasins, or fourth order watersheds (Table 3.51). These watersheds are defined by a hydrologic unit code (HUC) that identifies the specific hydrologic unit and consists of a two-digit sequence for each specific level within the delineation hierarchy. Perennial streams, intermittent and ephemeral drainages, and glacial lakes, ponds and pits make up the primary surface water resources within the planning area. The fourth-order watersheds are shown in Figure 3.14.

**Surface Water Resources**

*Perennial Stream:* A stream that normally has water in its channel at all times.

*Intermittent Stream:* A stream that flows only when it receives water from rainfall runoff or springs, or from some surface source such as melting snow.

*Ephemeral Stream:* A stream or part of a stream that flows only in direct response to precipitation; it receives little or no water from springs, melting snow, or other sources; its channel is at all times above the water table.

Critical watershed areas include soils that have a high potential for salt yield, are subject to severe water and wind erosion when disturbed, have high runoff potential during storm events, are subject to frequent flooding, or have a potential for loss of vegetation productivity under high rates of wind and water erosion. For more discussion on soils susceptible to wind and water erosion within the planning area, refer to the Soils section.

<b>Table 3.51 Fourth Field Hydrologic Unit Code (HUC) Watersheds in the HiLine Planning Area</b>			
<i>Basin/Sub-Basin Name</i>	<i>Hydrologic Unit Code</i>	<i>Total Watershed Area (sq. mi.)</i>	<i>BLM Land in Watershed (%)</i>
<b>Marias</b>			
Two Medicine	10030201	1,320	< 1.0
Cut Bank	10030202	1,230	< 1.0
Marias	10030203	3,680	1.7
Willow	10030204	985	< 1.0
Teton	10030205	1,960	1.6
<b>Middle Missouri</b>			
Bullwhacker-Dog	10040101	1,930	18
Fort Peck Reservoir	10040104	5,350	29
<b>Milk</b>			
Milk Headwaters	10050001	520	0.0
Upper Milk	10050002	1,040	< 1.0
Wild Horse Lake	10050003	91	19.8
Middle Milk	10050004	3,390	10.7
Big Sandy	10050005	851	2.7
Sage	10050006	1,050	< 1.0
Lodge	10050007	244	6.0
Battle	10050008	485	29.8
Peoples	10050009	735	2.8
Cottonwood	10050010	926	24.8
Whitewater	10050011	536	48.5
Lower Milk	10050012	1,740	42.0
Frenchman	10050013	286	32.0
Beaver	10050014	1,750	35.8
Rock	10050015	878	54.2
Porcupine	10050016	750	5.0

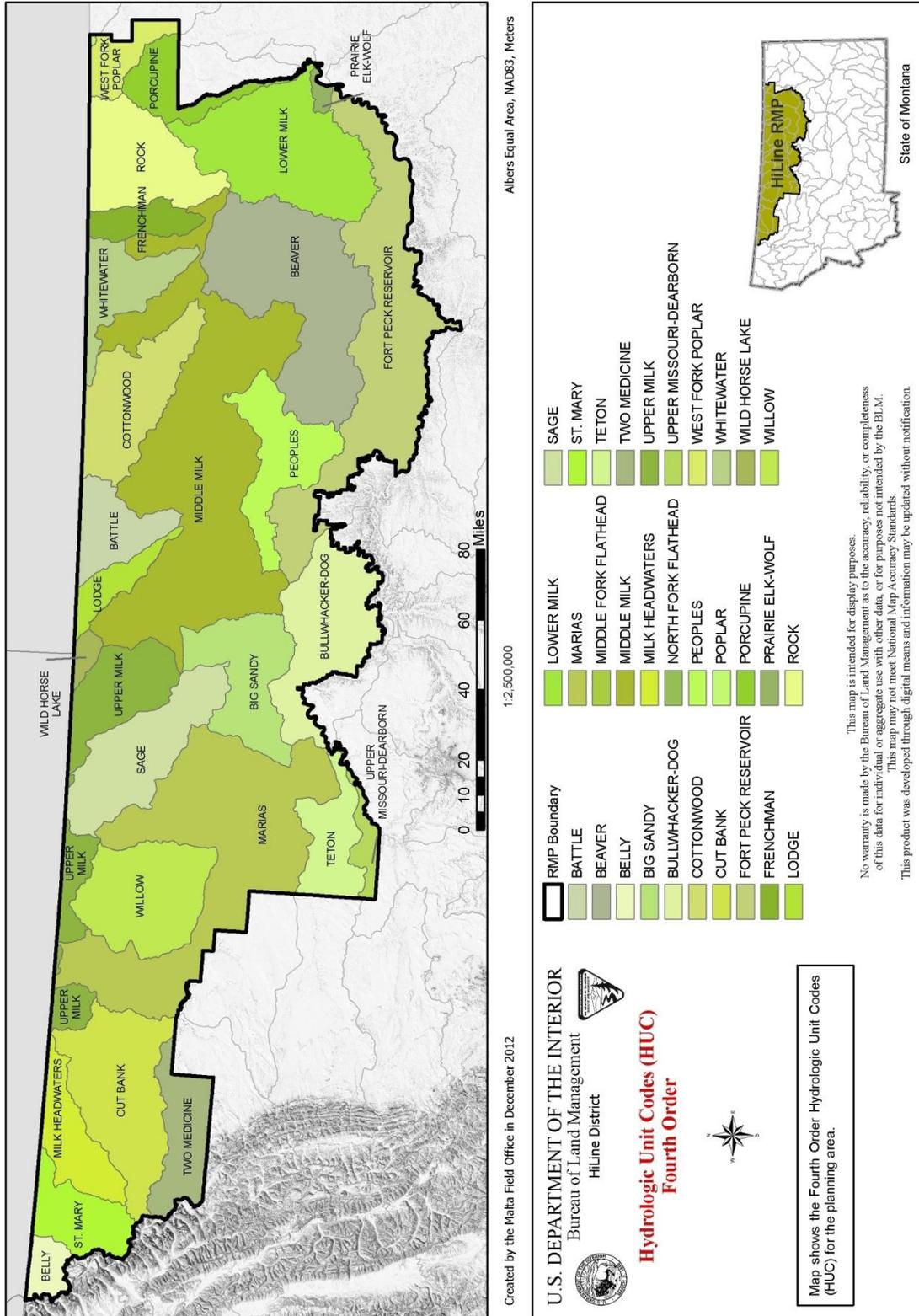
Source: U.S. Geological Survey (USGS) 2007, modified by BLM 2007.



Sand Creek, Chouteau County

Photo by Steve Zellmer

**Figure 3.14**  
**Hydrologic Unit Codes (HUC) Fourth Order**



## Factors Affecting Water Availability and Use

Water use in the planning area is affected by human factors that relate to water demand and natural factors associated with water availability. The supply of water is extremely variable from place to place across the planning area and can be highly variable from year to year. Average annual precipitation across most of the planning area ranges from less than 10 inches, to more than 20 inches in the Bears Paw Mountains and the westernmost portion of the planning area near Glacier National Park (USGS 2004). The annual precipitation that falls within the planning area is largely consumed by plant transpiration and evaporation from land and water surfaces. Average annual runoff ranges from one inch for Valley, Phillips, Blaine (excluding the southwest corner of the county), and the northern portions of Hill, Liberty and Toole Counties; to 1-5 inches for portions of Blaine, Hill, Liberty, Toole, Chouteau, and Glacier Counties. Average annual runoff for the higher elevation areas of Glacier County ranges from 10 inches to greater than 30 inches. Figure 3.15 depicts average annual runoff in Montana as reported from 1951-1980 (USGS 2004).

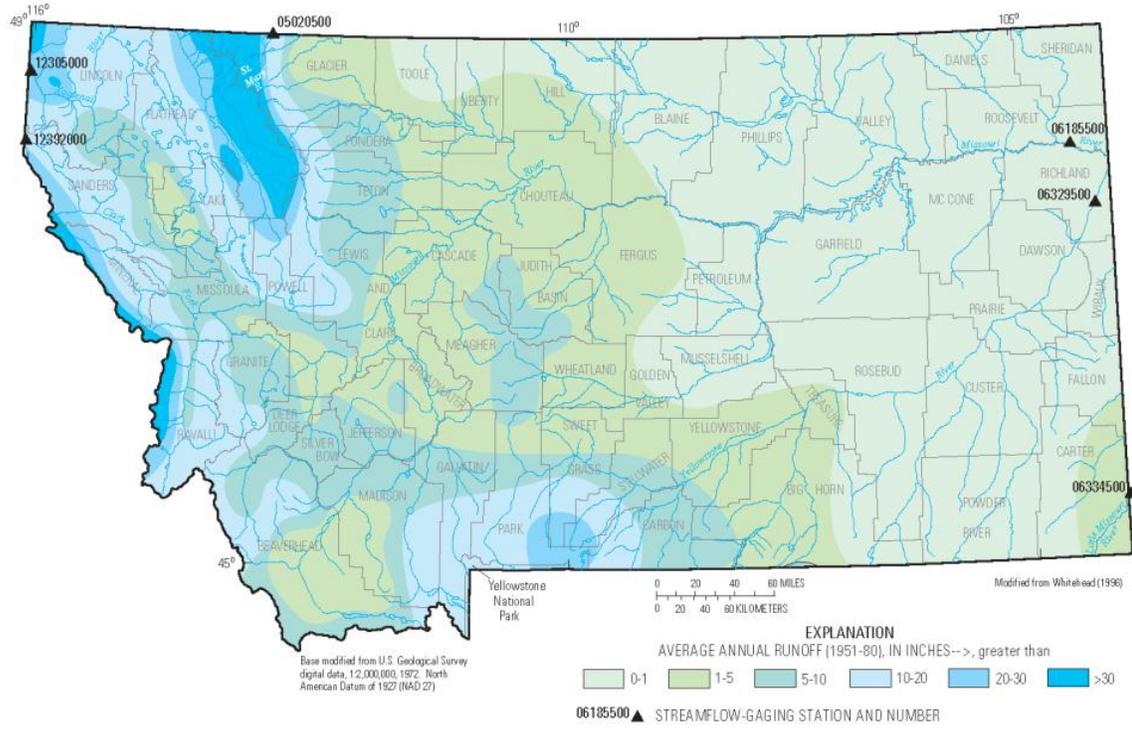
Groundwater availability is determined in a large part by the unconsolidated deposits and different rock types that compose the diverse geology of the planning area (described in detail in the Geology section). Large areas of the planning area are underlain by shale and fine grained sandstone of the Cretaceous and Tertiary age that yield small amounts of water, or yield water that is not regularly administered for many beneficial uses due to excess mineralization. Many of the rocks that form the distinct island mountain ranges (Little Rocky Mountains, Bears Paw Mountains and the Sweet Grass Hills) typically yield small amounts of water but do not form principal aquifers. Unconsolidated deposits of the Quaternary (or Tertiary and Quaternary) age, including coarse-grained glacial deposits, alluvium, and basin fill, generally are the most productive and utilized aquifers in the planning area. Many stock, domestic, irrigation, and public supply wells are completed in these productive aquifers that underlie the narrow river and stream valleys of the planning area. Figure 3.16 depicts other unconsolidated deposits across the planning area such as till and fine-grained glacial lake deposits of the Quaternary age that generally yield small quantities of water to wells (USGS 2004).

The population of the planning area is concentrated along the Burlington-Northern rail line and the Milk, Marias and northern margin of the Missouri River valleys. The 2005 population of the planning area was 60,304, a decrease of 4.9% since 2000 (for more detailed discussion of demographics, refer to the Social and Economic sections). Water demand for most non-agricultural uses is closely tied to this population distribution. Agriculture is one of the planning area's largest industries, with farms and ranches making up approximately 80% of the planning area (USDA Agricultural Facts 2008). The most prevalent off-stream water uses in the planning area, due to the large agricultural industry and relatively dry climate, are pasture irrigation and irrigation of crops (primarily hay production). Table 3.52 depicts the planning area's total population and water withdrawals by county for 2000 (excerpt from USGS 2004).

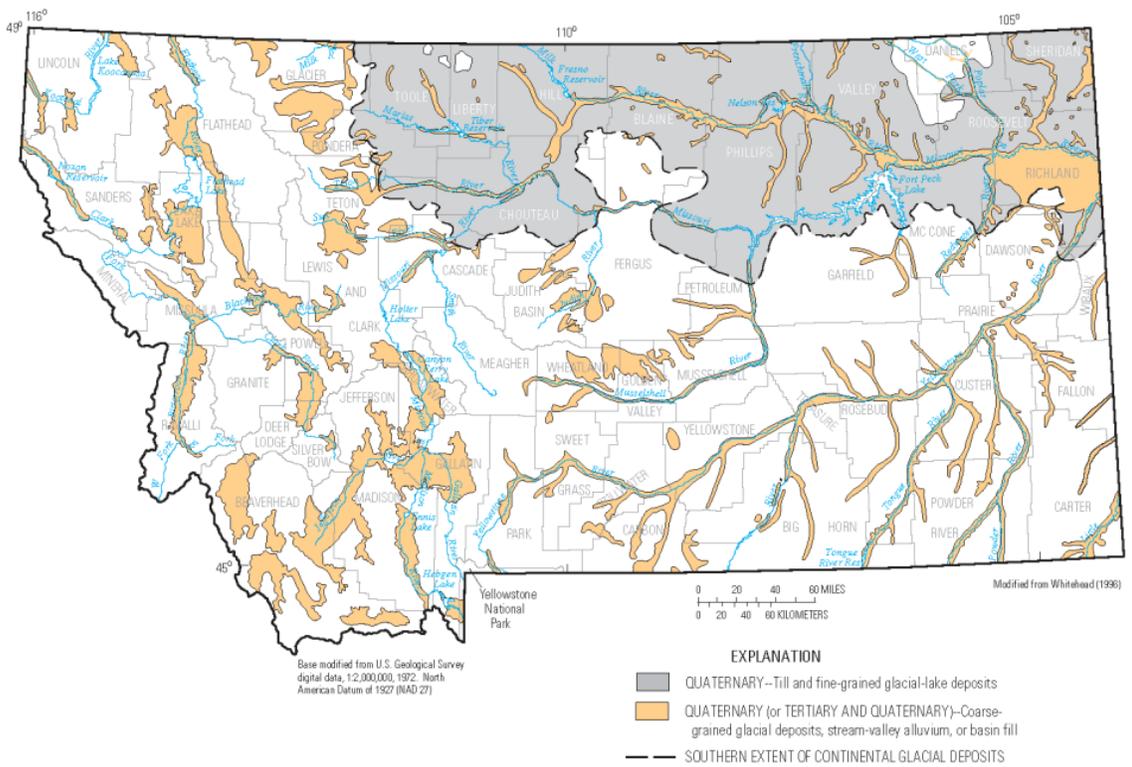
<i>Demographics</i>		<i>Withdrawals by Category (Mgal/d)</i>					<i>Totals</i>	
<i>County</i>	<i>Population of County</i>	<i>Irrigation</i>	<i>Public Supply</i>	<i>Self-Supplied</i>	<i>Self-Supported Industrial</i>	<i>Livestock</i>	<i>Total Withdrawals (Mgal/d)</i>	<i>Total Withdrawals (acre-ft/yr)</i>
Blaine	7,009	326.90	.78	.15	0	1.10	328.94	369,470
Chouteau	5,970	44.46	1.21	.18	0	.69	46.54	52,280
Glacier	13,247	111.18	1.92	.21	0.30	.66	114.26	128,340
Hill	16,673	10.85	1.61	.22	0.01	.47	13.15	14,770
Liberty	2,158	30.48	.38	.04	0	.32	31.22	35,070
Phillips	4,601	276.22	.39	.12	0	1.20	277.93	312,170
Toole	5,267	10.74	.88	.03	0.22	.39	12.26	13,780
Valley	7,675	201.53	1.40	.13	0.06	.98	204.11	229,260
<b>Total</b>	<b>62,600</b>	<b>1,012.36</b>	<b>8.57</b>	<b>1.08</b>	<b>0.59</b>	<b>5.81</b>	<b>1,028.41</b>	<b>1,155,140</b>

Source: Modified from USGS 2004.

**Figure 3.15**  
Average Annual Runoff in Montana 1951-1980



**Figure 3.16**  
General Extent of Unconsolidated Deposits that Yield Water to Shallow Wells



Water in the planning area is used for agricultural, municipal, industrial and recreation purposes. Table 3.53 shows the types and number of water developments located on BLM lands.

<i>Type of Improvement</i>	<i>Glasgow Field Office</i>	<i>Malta Field Office</i>	<i>Havre Field Office</i>	<i>Total</i>
Reservoirs (number)	1,690	2,292	754	4,736
Wells (number)	22	42	29	93
Pipelines (miles)	66	16	46	128
Springs (number)	26	44	12	82
Water spreaders (acres)	5,755	0	3	5,758
Water savers (number)	0	4	0	4

Source: BLM 2011.

Instream uses of water for recreation and fish and wildlife habitat are important to the planning area's expanding tourism industry. Rivers and reservoirs in the planning area are popular vacation destinations for float trips, fishing, and wildlife viewing. Guided river trips (floats and fishing) are popular on the Missouri and Marias Rivers. Nelson and Fort Peck Reservoirs are prime fishing destinations while the Bowdoin National Wildlife Refuge is a premier bird watching destination due to the combined presence of uplands, open-water, and wetland-riparian habitats.

### **Factors Affecting Water Quality**

Several factors affect water quality; however, the probable sources for impairment fall under two categories: human activity or natural occurrences. Metals are the number one cause of water quality degradation in the planning area, followed by nutrients, stream alteration, and sediment (Montana 303(d)/305(b) Integrated Report, 2012). Water quality is negatively impacted by any activity that destroys or removes the vegetative buffer along stream channels. Resource extraction, livestock grazing, recreation, energy development, and natural events are the main causes of water quality impairment.

Vegetation holds soil in place, absorbs the impact from precipitation, and decelerates overland water flow. Erosion rates are accelerated when fires, grazing, and other activities induce the removal of vegetative cover. The condition of the drainage, streambed characteristics, and channel geometry reflect rates of erosion. Stable channels tend to have consistent streambed grade and well vegetated banks that are neither steep nor deeply incised. Unstable drainages show evidence of downcutting, gullying, and excessive sedimentation and erosion.

### **Surface Water (Quality)**

Surface water quality can be affected by either point or nonpoint source pollution. Point sources (direct discharges of pollutants into surface waters) are regulated by the State under the Montana Pollution Discharge Elimination System (MPDES). Nonpoint source (NPS) water pollution is Montana's single largest source of water quality impairment. NPS pollution is contaminated runoff from the land surface generated by agriculture, forestry, urban and suburban development, mining, and other land use activities that cannot be tied to an exact discharge point. Common NPS pollutants include sediment, nutrients, temperature, heavy metals, pesticides, pathogens, and salt.

The Montana Nonpoint Source Management Plan (MDEQ 2012) informs the state's citizens about NPS pollution problems and establishes goals, objectives and both long-term and short-term strategies for controlling NPS pollution on a statewide basis.

The goal of Montana's NPS Management Program is to protect and restore water quality from the impacts of nonpoint sources of pollution in order to provide a clean and healthy environment. The Memorandum of Understanding Regarding Water Quality Management on Bureau of Land Management Lands in Montana (BLM and MDEQ 2010) is an important component of the Montana NPS Program. This Memorandum of Understanding (MOU) was developed to clarify the process for cooperatively controlling and abating water pollution from BLM lands in Montana. The MOU also provides the mechanism for ensuring project consistency with the State's NPS Management Program.

The 2012 Montana 305(b)/303(d) Integrated Report identifies the known conditions of surface waters across the planning area. Table 3.54 identifies those waters impaired by either point or nonpoint source pollution. It also identifies probable causes of impairment and the probable sources of the pollutant. The HiLine District manages 3,464 miles of perennial, intermittent, and ephemeral streams. Nine percent of this total (308 miles) has been designated as impaired by the State of Montana and EPA. The primary pollutants affecting these streams are riparian alterations, nutrients, metals, sediment, mercury, flow alterations, and habitat alterations. The primary sources are hydrologic and stream bank modifications, riparian and rangeland grazing, natural causes, and crop production. Heavy metals and mercury are the contaminants most associated with unknown and natural pollutant sources. Heavy metal contamination has been generated by local sources such as past resource extraction in the Little Rocky Mountains.

<b>Table 3.54</b>				
<b>Impaired Water Bodies by Fourth Level Hydrologic Unit Code</b>				
<i>Fourth Level Hydrologic Unit Code</i>	<i>Stream Segment within BLM Land</i>	<i>Miles within BLM Land (% of total stream miles)</i>	<i>Probable Impairment Type(s)<sup>A</sup></i>	<i>Probable Impairment Source(s)<sup>B</sup></i>
<b>Marias Watershed</b>				
Cut Bank (10030202)	Cut Bank Creek	2.39 (11.3%)	2, 6, 12	2, 9, 10
Marias (10030203)	Marias River	10.47 (14.8%)	14	4, 5
	Pondera Creek/Coulee*	0.75 (0.6%)	3, 5, 16	2, 3
	Corral Creek	1.09 (4.7%)	2	2
Teton (10030205)	Teton River	1.19 (1.0%)	6, 7	2, 6, 10, 11, 13
<b>Middle Missouri Watershed</b>				
Ft. Peck Reservoir (10040104)	Alder Gulch**	3.24 (81.0%)	1, 3, 4, 8	1, 5, 7
	Mill Gulch**	1.55 (91.2%)	1, 2, 3, 4, 8	1, 3, 7
	Montana Gulch**	1.64 (82.0%)	1, 8, 9	1, 5, 7
	Rock Creek**	4.91 (12.5%)	1, 3, 4, 8, 13	1, 5, 7, 8
	Ruby Gulch**	2.08 (71.7%)	1, 4, 8	1, 5, 7
	Sullivan Creek**	0.80 (100%)	3, 5, 6	1, 7
<b>Milk River Watershed</b>				
Middle Milk (10050004)	Milk River (011)	0.20 (0.18%)	4	2, 3, 5, 6
	Milk River (012)	6.52 (11.20%)	4	2, 3, 5, 6
	Milk River (013)	15.13 (14.72%)	4	2, 3, 5, 6
	Milk River (020)*	1.33 (3.5%)	1, 2, 3, 6	2, 3, 5, 6, 10
	Little Box Elder Creek*	0.08 (0.15%)	2, 7, 11, 12	3, 4, 5
Lodge (10050007)	Lodge Creek*	3.74 (4.5%)	2, 4, 6, 10	2, 3, 4, 6, 9
Battle (10050008)	Battle Creek*	5.13 (6.9%)	3, 5, 7, 11, 14	2, 3
Peoples Creek (10050009)	Lodge Pole Creek**	3.85 (89.5%)	1, 3, 4, 14	1, 4, 7
	King Creek**	0.14 (15.6%)	1, 3, 5	1, 7
	Big Horn Creek**	0.89 (86.4%)	1, 9	1, 5, 7
	Swift Gulch Creek**	1.27 (62.9%)	1, 8, 9, 18	1, 5, 7
Cottonwood (10050010)	Cottonwood Creek*	12.35 (21.3%)	1, 3, 7	4, 5, 8
Whitewater (10050011)	Whitewater Creek	31.7 (46.9%)	4	4
Lower Milk (10050012)	Milk River (010)*	4.17 (3.1%)	1, 4, 13	2, 3, 4, 5, 6
	Buggy Creek	15.42 (33.16%)	1	5

<b>Table 3.54</b>				
<b>Impaired Water Bodies by Fourth Level Hydrologic Unit Code</b>				
<i>Fourth Level Hydrologic Unit Code</i>	<i>Stream Segment within BLM Land</i>	<i>Miles within BLM Land (% of total stream miles)</i>	<i>Probable Impairment Type(s)<sup>A</sup></i>	<i>Probable Impairment Source(s)<sup>B</sup></i>
	Lone Tree Creek*	22.2 (100%)	2,3	6, 8, 11
	Willow Creek (031)*	6.49 (62.43%)	3, 5, 6, 7	3, 6, 8, 11
	Willow Creek (033)	55.78 (73.3%)	3, 5, 6, 7	2, 3, 8
	Little Beaver Creek *	15.44 (74.95%)	2, 3, 7, 11	8
Frenchman (10050013)	Frenchman Creek*	8.52 (10.33%)	3, 6, 11	2, 3, 4, 6, 8
Beaver (10050014)	Beaver Creek (011)**	5.14 (95.09%)	1	1, 4, 7
	Beaver Creek (013)	1.76 (3.20%)	2, 4	4
	Beaver Creek (014)	17.97 (18.33%)	2, 4	4
	Beaver Creek (020)*	0.80 (0.92%)	2, 3, 5, 15	2, 3, 4
	Big Warm Creek*	2.12 (3.71%)	2, 3, 5, 6, 7, 16	2, 3, 6, 8, 11
	Flat Creek	15.74 (42.64%)	1, 2, 7, 9, 10	4, 5
	Larb Creek*	20.87 (27.21%)	1, 2, 3, 10	2, 3, 4, 5, 12
Porcupine (10050016)	Porcupine Creek	3.04 (6.14%)	2, 16	2
<b>Reservoirs</b>				
Fresno Reservoir (100500208)			5, 6	6
Nelson Reservoir (10050014)			2, 6	2, 6

Source: Montana 303(d)/ 305(b) Integrated Report, 2012.

<sup>A</sup> Impairment Type: 1 = Metals; 2 = Nutrients-Phosphorus/Nitrogen; 3 = Alt. of Streamside Veg.; 4 = Mercury; 5 = Habitat Alterations; 6 = Flow Alteration; 7 = Sedimentation; 8 = pH; 9 = Arsenic; 10 = Oxygen Depletion; 11 = Algae; 12 = Temperature; 13 = Escherichia coli; 14 = Impairment Unknown; 15 = Uranium; 16 = Salinity; 17 = Sulfates; 18 = Cyanide.

<sup>B</sup> Impairment Source: 1 = Resource Extraction; 2 = Crop Production; 3 = Rangeland Grazing; 4 = Unknown Source; 5 = Natural Sources; 6 = Hydromodification; 7 = Historical Mining; 8 = Riparian Grazing; 9 = Urban Runoff; 10 = Water Diversions; 11 = Streambank Modification; 12 = Feedlot; 13 = Highways, Roads, Bridges, Infrastructure (New Construction).

\* Segment potentially impacted by grazing (including hydrologic modifications such as reservoirs and pits).

\*\* Segment potentially impacted by resource extraction (oil and gas, mining, timber).

Of the thirteen potential water quality impairment sources identified within Table 3.54, only six can be directly related to BLM management: (1) resource extraction, (2) rangeland grazing, (3) historical mining, (4) riparian grazing, (5) hydromodification, and (6) streambank modification. Table 3.55 identifies the primary causes and sources of stream impairments within the planning area.

Five segments in the Little Rocky Mountains (Middle Missouri watershed) are covered under a reclamation plan approved by the BLM and MDEQ (BLM and MDEQ 2002). Two segments, Teton River (Marias Watershed) and Lone Tree Creek (Milk River watershed), are covered by existing Total Maximum Daily Loads (TMDLs). Conditions are expected to improve as pollutant levels are reduced through the implementation of reclamation and management plans.

Various portions of the 15 BLM segments that are potentially impacted by grazing have been assessed for PFC (Table 3.56). The use of PFC as a first tier water quality assessment tool assists in defining appropriate lotic reaches to apply management actions. PFC indicates that BLM-managed segments are in good condition and suggests that the actual source of impairment may be located off of BLM lands. Upward trends suggest that current management may be appropriate for conditions to improve. When last assessed, nearly all of the segments that were FAR expressed an upward trend, except for 12.92 miles of Willow Creek (033), where the trend was identified as Not Apparent, and 0.91 miles of Cottonwood Creek, which exhibited a static trend.

<b>Table 3.55 Primary Causes and Sources of Stream Impairments</b>		
	<i>Miles</i>	<i>% of Total</i>
<b>Pollutant</b>		
Alt. of Streamside Veg.	166.27	54
Sediment	114.32	37
Nutrients	110.12	36
Mercury	96.82	31
Metals	94.59	31
Flow Alterations	82.36	27
Habitat Alterations	69.89	23
Oxygen Depletion	40.35	13
Algae	29.17	9
Arsenic	19.54	6
pH	14.69	5
Escherichia coli	9.08	3
Unknown	8.98	3
Salinity	7.10	2
Temperature	2.47	1
Cyanide	1.27	<1
Sulfates	1.19	<1
Uranium	0.80	<1
<b>Source</b>		
Unknown	137.20	45
Riparian Grazing	133.18	43
Crop Production	132.77	43
Rangeland Grazing	127.81	42
Natural	116.31	38
Hydrologic Modifications	71.61	23
Streambank Modification	32.00	10
Resource Extraction	25.51	8
Historic Mining	25.51	8
Feedlots	20.87	7
Urban Runoff	6.13	2
Diversions	4.91	2
Highways, Roads, Bridges, Infrastructure (New Construction)	1.19	<1

Source: Montana 303(d)/ 305(b) Integrated Report, 2012

<b>Table 3.56 Condition Assessments for Stream Segments Potentially Impacted by Grazing</b>			
<i>Stream</i>	<i>Proper Functioning Condition (miles)</i>	<i>Functioning at Risk (miles)</i>	<i>Nonfunctioning Condition (miles)</i>
Battle Creek*	4.15	0.21	
Beaver Creek	All		
Big Warm Creek		2.06	
Cottonwood Creek	1.08	7.80	1.43
Frenchman Creek	1.27	7.20	
Larb Creek	16.87	4.03	
Little Beaver Creek		11.43	
Little Box Elder Creek**	NA	NA	NA
Lodge Creek	2.12		
Lone Tree Creek	All		
Milk River (020) in Milk River Watershed		0.19	
Milk River (010) in Lower Milk Watershed		0.92	
Pondera Creek/Coulee		0.74	
Willow Creek (031)	6.50		
Willow Creek (033)	29.46	12.92	

\* 0.14 miles of Battle Creek was removed from BLM management in a land exchange.

\*\* The 0.08 mile long segment of Little Box Elder Creek has not had a conditional assessment completed by the BLM.

Inasmuch as the primary management-related sources of water quality impairment are grazing and riparian-related, the BLM should continue utilizing the upland and riparian Standards for Rangeland Health as primary indicators of BLM's contribution to water quality. Relevant indicators of water quality for the HiLine District (identified in the Standards and Guidelines for Rangeland Health, BLM 1997a) include: pH, sediment, turbidity, temperature, dissolved oxygen, fecal coliform, color, and toxins. Manageable streams should be evaluated at least every five years to ensure that conditions are maintained or moving toward desired conditions. Site-specific BMPs should be designed to improve water quality where current management actions do not appear to be producing desired results.

The EPA has approved the Assiniboine and Sioux Tribes (Fort Peck Reservation) and the Blackfoot Tribe (Blackfoot Reservation) for treatment as a State for purposes of the Clean Water Act Section 303 water quality standards program. The Assiniboine and Sioux Tribes (Fort Peck Reservation) have water quality standards in place. The Tribes' water quality standards are applicable to "waters of the Tribe." All stream segments that have received beneficial use designations (Big Muddy Creek, Big Porcupine Creek, Little Porcupine Creek, Missouri River, Poplar River, Smoke Creek, Tule Creek, and Wolf Creek) are within watersheds outside of the planning area. The Blackfoot Tribe (Blackfoot Reservation) has tribally adopted standards that are not yet approved by the EPA.

### Groundwater (Quality)

Groundwater in the planning area occurs in unconsolidated materials (alluvium, glacial outwash, or terrace deposits) and in consolidated rocks such as sandstones, shaley sandstones, coal, limestone, or igneous rocks.

Shallow groundwater, where present, can be found in alluvial deposits along the larger stream valleys and in buried pre-glacial alluvial channels. These unconsolidated, shallow aquifers are generally 20-40 feet below the surface. Yields range from 1-100 gallons per minute (gpm); however, average reported yields are approximately 2-5 gpm. According to EPA drinking water standards, the groundwater quality of these unconsolidated, alluvial deposits exceeds the recommended level of 500 milligrams per liter (mg/L) of Total Dissolved Solids (TDS). Therefore, groundwater use is not recommended for domestic purposes without treatment, but is deemed suitable for agricultural use, including but not limited to watering of livestock. TDS concentrations are usually in the 1,000 to 5,000 mg/L range.



Rock Creek, Phillips County

BLM Photo

The Judith River formation underlies most of the eastern portion of the planning area and is a widely used source of groundwater with TDS levels generally ranging from 800 to 2,000 (mg/L). The Judith River formation consists of approximately 500 feet of grayish-white sandstone and light to dark gray sandy shale and clay. These sandstones constitute the water-bearing horizons. The depth to water in the Judith River formation decreases in a northward direction. Wells range from approximately 1,000 feet deep near the Missouri River to 200 feet deep in the northernmost portion of the planning area approaching the Canadian border.

The structural attitude of the Judith River formation dips to the southeast. Most wells artesian flow at the surface in the UL Bend region. Static water levels decrease to the north and can be located 200 feet below the surface in the Whitewater area. Yields range from 2-20 gpm, but most yield 3-4 gpm. Wells near the Canadian border are generally 200-250 feet deep with yields of 3-4 gpm and static water levels reported at 150 to 200 feet below the surface.

The Bearpaw shale outcrops over a large portion of the planning area. The Bearpaw shale is 1,100 feet thick on average and is composed essentially of dark, lead-gray or almost black, clayey shale which forms an infertile, alkaline, “gumbo” soil. The Bearpaw formation contains thin, widely scattered, and isolated sandstone stringers, which seldom yield significant quantities of water to wells. Several springs and seeps occur in the deeply dissected drainages in the planning area. Yields are low, generally less than 1 gpm. Water quality is poor, with TDS levels precluding both livestock and domestic use; however, wildlife occasionally use these springs when other water sources are unavailable.

Aquifers are occasionally present at the contact between terrace gravel deposits and the underlying Bearpaw shale. These aquifers usually appear as low yield springs and seeps (less than 2 gpm) on hillsides above drainages. Water quality is generally suitable for livestock, but not for domestic use.

Other shallow aquifers occur in the area such as those residing in the Eagle Sandstone, but their extent is so limited that they cannot be considered major sources of groundwater.

Groundwater of better quantity is available from deeper aquifers, such as those found in the Madison formation, but the costs associated with development preclude exploitation by anything other than large commercial interests or municipalities.

If current trends continue there will be negligible increases in rural development and in industrial water demand. Historical meteorological data, as well as evidence from the geologic record, suggest that climate conditions have been highly variable in the region and that prolonged cycles of drought are possible.

Increased public demand for recreation may result in a small increased demand for water resources. Current development of potable water facilities for recreational use is negligible due to the high maintenance cost and monitoring requirements.

Improved management of watersheds is expected to lead to gradual and widespread improvements in water quality and watershed condition. Strategies for managing water resources involve multidisciplinary approaches. For example, water quality is expected to improve as impacts of surface-disturbing activities on vegetation cover are reduced through implementation of BMPs in riparian areas. The primary management-related sources of water quality impairment are grazing and riparian degradation. Utilizing BMPs for grazing and surface-disturbing activities, such as energy development and road construction, will protect riparian vegetation, which in turn will provide a buffer between overland flow and the stream channel. Prevalent riparian vegetation would protect stream banks, prevent excess erosion, and increase sediment delivery to surface water channels.

## **Floodplains**

Floodplains are those land areas in and adjacent to streams and watercourses subject to continuous or periodic inundation from flood events with a 1% chance of occurrence in any given year (i.e., the 100-year flood frequency event). When stream banks overflow during or after a storm, the floodplain provides natural storage for the excess water. The 100-year frequency storm is used to determine the limits of the floodplain.

Floodplain function is essential to watershed function, water quality, soil development, stream morphology, and wetland and riparian community composition. Floodplains reduce flood peaks and velocities, thereby reducing erosion; enhancing nutrient cycling; reducing frequency and duration of low flows; and increasing infiltration, water storage, and aquifer recharge. Floodplains enhance water quality by facilitating sedimentation and filtering overland flow. Floodplains support high plant productivity, high biodiversity, and habitat for wildlife.

Hydrologic modifications via water diversions, dams, and channelization have altered the natural flooding regime and have reduced or eliminated floodplain functionality within some watersheds of the planning area. Periodic flooding is essential to riparian communities of active floodplains. In particular, plains cottonwood (*Populus deltoides*) recruitment is dependent on flood scour and maintenance of the historical magnitude, duration, and flood recurrence interval.

Although available since 1987, the Federal Emergency Management Agency (FEMA) flood maps have not been evaluated to determine the acreage defined within the 100-year floodplain demarcation. Therefore, the extent (in acres) of defined 100-year floodplains occurring on BLM lands within this planning area is unknown.

Floodplains receive special protection under Executive Order (EO) 11988 (1977), which directs federal agencies (including the BLM) to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by floodplains. EO 11988 directs each agency to take floodplain management into account when formulating or evaluating any water and land use plans and requires that land and water resources be appropriate to the degree of hazard involved. Regulations and operating procedures for the licenses, permits, and loan or grants-in-aid programs that agencies administer are to include adequate provision for the evaluation and consideration of flood hazards. Agencies are to encourage and provide appropriate guidance for applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for federal licenses, permits, loans or grants.

## Water Rights

The BLM will apply for water rights to water sources on BLM land under the same regulations as all other appropriators. The State of Montana began adjudicating water rights in the early 1980s. The BLM filed claims on all existing water developments and natural sources (reservoirs, springs, potholes, etc.) occurring on BLM land. The BLM manages the land for multiple uses and files water rights to protect these uses. The BLM holds water rights for such beneficial uses as livestock, fisheries, waterfowl, and wildlife. Many BLM reservoirs have more than one water right attached to them so the varying uses listed above will be protected. The current BLM water rights (by purpose) in the planning area are summarized in Table 3.57.

Within the planning area, 27 of the commercial water rights (12 in Phillips County [57.6 total acre feet] and 15 in Valley County [104.7 acre feet]) are provisional permits that claim a volume of water for multiple beneficial uses. The water appropriated pursuant to the permits pertaining to commercial beneficial uses shall be used for multiple purposes including wildlife, waterfowl, stock-watering, and gas and oil well drilling from either April 1 or May 1 to December 31, inclusive, or each year. The appropriations shall not exceed a quantity of 162.3 acre-feet per annum. All appropriations with the purpose of gas and oil well drilling were acquired by the BLM prior to 1976 and the BLM does not intend to acquire additional commercial water rights with such a purpose over the life of this plan. The additional commercial water rights held by the BLM apply to water supply at recreation areas and campsites.



John Retention Reservoir in Valley County

BLM Photo

**Table 3.57  
BLM Water Rights in the HiLine Planning Area**

<i>Purpose</i>	<i>Glacier County</i>	<i>Toole County</i>	<i>Liberty County</i>	<i>Chouteau County</i>	<i>Hill County</i>	<i>Blaine County</i>	<i>Phillips County</i>	<i>Valley County</i>	<i>Total Water Rights</i>
Agricultural Spraying	0	0	0	8	0	0	0	0	8
Commercial	0	0	0	2	0	0	16	15	33
Fish and Wildlife	0	0	0	33	0	1	43	22	99
Fishery	0	0	0	0	0	3	0	1	4
Flood Control	0	0	0	0	0	0	10	177	187
Irrigation	0	0	0	0	0	3	3	52	58
Lawn and Garden	0	0	0	1	0	0	0	0	1
Multiple Domestic	0	0	0	0	0	1	0	0	1
Recreation	0	0	0	33	0	0	12	0	45
Stock	0	15	2	40	2	1,617	5,677	2,405	9,758
Wildlife	0	6	2	32	2	1,393	4,830	1,502	7,767
Wildlife/Waterfowl	0	3	0	2	0	71	350	78	504

Source: Natural Resource Information System and the Montana Department of Natural Resources and Conservation 2009.

## Wilderness Characteristics

The BLM maintains an inventory of all lands under its jurisdiction, pursuant to Section 201 of FLPMA. As required by law, the BLM will continue to maintain inventories of lands under its jurisdiction, including lands with wilderness characteristics. Also, consistent with FLPMA and other applicable authorities, the BLM will consider the wilderness characteristics of BLM land when undertaking its multiple-use land use planning.

The existing inventory of BLM land in the HiLine planning area was updated and evaluated to determine whether additional lands other than the existing WSAs have wilderness characteristics. The inventory update process began in early 2011 in response to Secretarial Order 3310. This work continued until Congress passed and the President signed the Full-Year Continuing Appropriations Act for Fiscal Year 2011 that included a provision prohibiting the use of appropriated funds to implement, administer, or enforce Secretarial Order 3310. All work on updating the inventory ceased until additional guidance was received from the Secretary of the Interior on June 1, 2011. The inventory update resumed shortly thereafter and was completed under guidance contained in Instruction Memorandum No. 2011-154. Throughout the inventory update, the criteria for analyzing and determining the presence of wilderness characteristics remained unchanged. Areas with wilderness characteristics must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. In addition, it may also possess supplemental values.

The 2011 inventory update identified 26 areas meeting the criteria for wilderness characteristics. These areas include 386,462 acres of BLM land and vary in size from 4,118 to 49,564 acres. The locations of these areas are shown on Map W.9, which is available on the internet at <http://blm.gov/8gqkd>. During the comment period for the HiLine Draft RMP/EIS, the Montana Wilderness Association (MWA) submitted a report and comments based on their own inventories. The MWA document presented information that was new and significantly different from that considered in the BLM’s previous inventories. In July 2013, BLM resource specialists completed on-site surveys of three inventory units (Carpenter Creek, Lena and Long Coulee) based on this new information and concluded that the Lena and Carpenter Creek units meet the criteria for wilderness characteristics, bringing the total number of areas with wilderness characteristics to 28 and the total acres to 399,482. Alternative E (Preferred Alternative) in this document was modified to include the new wilderness characteristics units. Copies of the updated inventory forms for all 28 units, including the

three areas proposed by MWA, are available on the internet at [http://www.blm.gov/mt/st/en/prog/lands\\_with\\_wilderness.html](http://www.blm.gov/mt/st/en/prog/lands_with_wilderness.html).

The 28 areas that meet the criteria for wilderness characteristics in the HiLine planning area have been combined into five groups based on location, topography, habitat types, and similarity of wilderness characteristics. Following is a brief description of the groups.

### **Eastern Breaks and Badlands: Areas 49B, 52L and 53**

Located in southeast Phillips and southwest Valley Counties, the Eastern Breaks and Badlands areas (16,393 acres) lie between one and six miles north of the Charles M. Russell National Wildlife Refuge. The Plum Creek Road forms the southern boundary of Area 49B and separates it from the Burnt Lodge Wilderness Study Area.

Topography of these areas is diverse with breaks, rolling hills, sandstone capped uplands and badlands. Major types of vegetation are a mixture of short- and mid-grasses, sagebrush, conifers, greasewood and bare soil. Two-track vehicle routes and pasture fences are the most common anthropogenic features present in these areas, but during field reviews conducted in the summers of 2011 and 2013 these features were considered substantially unnoticeable and did not detract from the apparent naturalness of the areas. The areas appear to be in a natural condition.

The broken topography and scattered timber create outstanding opportunities for solitude. A variety of primitive and unconfined recreation activities are available including hiking, backpacking, horseback riding, snowshoeing, and sightseeing for botanical, zoological and geological features. Big game hunting is currently the most popular recreational use occurring in these areas and elk hunting opportunities are considered outstanding for those fortunate enough to draw a permit.

Mule deer, pronghorn and elk are year-long residents. Other values include paleontological resources and prehistoric cultural resources. Prehistoric features include sites such as subsistence gathering and processing areas, rock alignments, spiritual locales, and numerous habitation sites. Historic cultural resources such as the physical remains of sites associated with farming, ranching, mining, and the homestead era are also present in many of these areas.

No inholdings are located in these areas. Livestock grazing is the principal commercial use of these lands.

### **Intact Prairie Grasslands: Areas 32A, 32B, 33, 84, 90, 91A, 91B, and 93**

The Intact Prairie Grasslands areas are located north of the Milk River in northern Blaine, Phillips and Valley Counties (139,654 acres). These large tracts of BLM land are part of a relatively unfragmented landscape dominated by a mix of native cool and warm season grasses intermixed with grasslands, badlands and riparian systems. These areas provide excellent examples of glaciated short- and mid-grass prairies that stand out as some of the most extensive naturally functioning glaciated plains grasslands in North America (Cooper, et al. 2001).

Portions of some of these areas have been cultivated in the past, but all have reverted back to native vegetation. Barely visible linear piles of rock along some old field edges are the only remaining evidence of the previous farming activity. All of these areas contain additional evidence of human impacts such as reservoirs, fences and two-track vehicle routes. During field reviews conducted in the summer of 2011, it was determined that these man-made features were for the most part substantially unnoticeable and did not detract from the apparent naturalness of the areas. The areas appear to be in a natural condition.

Hunting is currently the most popular and prevalent recreational use occurring, with many of these areas offering outstanding opportunities to hunt big game animals and upland birds. Outside of the hunting season, visitor use in most of these areas is extremely light. Unexploited primitive and unconfined recreation activities possible in these areas include hiking, backpacking, horseback riding, snowshoeing, cross-country skiing, photography, bird watching, and sightseeing for botanical, zoological and geological features.

The size and remoteness of these areas combined with their rolling topography provide outstanding opportunities for solitude. Most private lands directly adjacent are either native range or have been seeded or reverted back to grass and are no longer farmed. With the possible exception of big game hunting season, vehicle use of routes in these areas and on adjacent lands is infrequent.

The diversity of native grasses provides excellent grassland bird and waterfowl nesting habitat. Other values include paleontological locations and prehistoric cultural resources such as subsistence gathering and processing areas, rock alignments, spiritual locales, and numerous habitation sites. Historic cultural resources such as the physical remains of sites associated with farming, ranching, railroads, and the homestead era are also present in many of these areas.

Livestock grazing on private and state inholdings is managed in conjunction with adjacent BLM grazing allotments. Existing oil and gas leases may limit the BLM's ability to manage wilderness characteristics in some areas.

### **Intact Sagebrush Grasslands: Areas 19A, 19B, 19C, 20A, 20B, 49A, 49C, 54, 55, 56, 62, 64 and 94**

The Intact Sagebrush Grasslands areas are located south of the Milk River in southern Phillips and Valley Counties (211,056 acres). These large tracts of nearly level to rolling grasslands are sporadically dissected with intermittent streams, coulees and break lands. Large expanses of upland habitat are dominated by Wyoming big sagebrush while terraces adjacent to riparian areas support stands of silver sagebrush. Salt-affected soils in similar landscape positions support black greasewood communities. Scattered cottonwood, willows, boxelder, silver buffaloberry and common chokecherry can be found in major drainages.

All of these areas contain some evidence of human impacts such as reservoirs, fences and two-track vehicle routes. A few plugged and abandoned oil and gas wells are scattered throughout. During field reviews conducted in the summer of 2011 and 2013, it was determined that these man-made features were for the most part substantially unnoticeable and did not detract from the apparent naturalness of these units. From some of the higher vantage points the view stretches on for miles with very little evidence of man's work, even on adjacent ownerships. The areas appear to be in a natural condition.

The rolling grasslands, breaks and coulees provide sufficient topographic screening for visitors to avoid the sights, sounds, and evidence of other people. The size and remoteness of these areas combined with their rolling and broken topography provides outstanding opportunities for solitude.

A variety of primitive and unconfined recreation activities are available, including hiking, backpacking, hunting, horseback riding, snowshoeing, cross-country skiing, photography, and sightseeing for botanical, zoological and geological features. These areas offer outstanding opportunities to photograph and/or hunt native species of grassland and sage-grasslands-obligate grouse in Montana.

Greater Sage-Grouse strutting grounds are found in most of these areas and many of them also contain sharp-tailed grouse dancing grounds. The diversity and cover of native grasses in most of the areas provide quality grassland bird and waterfowl nesting habitat while some of the more open habitat supports black-tailed prairie dogs. Pronghorn and mule deer are year-long residents in all areas, and elk winter range is present in the southern portion of the grassland landscape. Other values include paleontological locations and prehistoric cultural resources such as subsistence gathering and processing areas, rock alignments, spiritual locales, and numerous habitation sites. Furthermore; this area of the intact sagebrush grassland was part of a longstanding tradition of the open range cattle industry, followed by an influx of homesteaders from the 1910s to 1930s. Historic cultural resources reflect this history and are represented by the remains of corrals, livestock activities, and homesteads.

A total of 1,160 acres of private inholdings are located in Area 49C, and 10 sections (6,400 acres) of state land inholdings are scattered throughout the rest of the areas. Livestock grazing on the private and state inholdings is managed in conjunction with adjacent BLM grazing allotments. Existing bentonite mining claims may limit the BLM's ability to manage wilderness characteristics on the surface of portions of Area 62.

## Island Mountain Range: Area 1

The Island Mountain Range area is located in northwestern Liberty County and includes about 4,118 acres of BLM land. Undulating mid-grasslands ascend to steep timbered ridges dotted with course talus slopes, which makes this area stand out from the surrounding rolling prairies. While the area is relatively small (i.e., <5000 acres), the majority of the surrounding private and state lands are being managed in a manner that complements current BLM management that is adequate to protect wilderness characteristics. The entire area is closed to use by motorized vehicles. Vehicle use of routes on adjacent private lands is infrequent and is controlled by private landowners.

The area contains several abandoned mine sites and reclaimed vehicle routes. While some of the reclamation work is still visually evident when viewed from the opposing ridge tops, the reclaimed sites are not visible after dropping into the timber, nor are they visible from the many drainage bottoms. Communication towers on top of Mount Royal can readily be seen from outside the area, but for the most part are substantially unnoticeable from within due to topographic and vegetative screening. The area appears to be in a natural condition.

Despite the relatively small size of the area, multiple coniferous forest types combined with steep canyons that drain in different directions provide excellent opportunities to find solitude. Current usage by Native American religious practitioners is indicative of this area's solitude.

A variety of primitive and unconfined recreation activities are available, including hiking, backpacking, hunting, horseback riding, snowshoeing, photography, and sightseeing for botanical, zoological and geological features. Devil's Chimney Cave is a popular hiker's destination in the summer months. In the fall, hunters can pursue upland game birds and deer during the general hunting season. Opportunities to hunt moose and bull elk with firearms are limited, but would be considered outstanding if one was fortunate enough to draw a permit.

Livestock grazing on adjacent private and state lands is managed in conjunction with adjacent BLM grazing allotments. Existing mining claims may limit the BLM's ability to manage wilderness characteristics on a small portion of this area.

The most common big game animal in the Sweet Grass Hills is the mule deer. Densities as high as 22 deer per square mile have been recorded. Mule deer can be found in most areas throughout the year, but tend to prefer similar windswept exposures as elk during the winter with heaviest concentrations at the prairie timber edges. Approximately 350 elk inhabit the Sweet Grass Hills, with about half using East Butte. The management goal for the Sweet Grass Hills is 350 +/- 20%.

## Western Breaks and Badlands: Areas 3A, 3B, and 4

Three areas identified as the Western Breaks and Badlands (see Map W.9, which is available on the internet at <http://blm.gov/8gkd>) are located in southeast Chouteau and southwest Blaine Counties (28,262 acres). They contain vegetation and topography typical of the Missouri River breaks region. Barren clay and sandstone outcrops (badlands) and gumbo soils (shale) with little or no plant cover are common features over portions of these areas. Upland benches are scattered throughout with mid-grasses as the dominant plant community. Nearly level to slightly sloping upland areas support sagebrush grasslands dissected by steep timbered coulees.

Plugged and abandoned wells provide evidence of past oil and gas exploration, but only the wells marked with a metal standpipe could be relocated during the field inspection. Numerous reservoirs and several miles of vehicle routes and pasture fence are scattered across these areas. All reservoirs observed during the field inspection were full of water and appeared to be natural components of the landscape, even though the straight line of the dam was noticeable from some angles. The remaining man-made features were considered to be substantially unnoticeable and did not detract from the apparent naturalness of these areas. Most private lands directly adjacent are either native range or have been seeded back to grass and are no longer farmed. The areas appear to be in a natural condition.

Vehicle use on routes is infrequent and controlled by the adjacent private landowners. Public access to Areas 3A and 3B is non-motorized only from the Cow Island Trail (county road) across state lands. Public access to Area 4 is limited to the very southern tip and could be reached traveling by foot from the Missouri River overland for about 2 miles. The

remoteness of these areas combined with the broken topography and scattered timber creates outstanding opportunities for solitude.

A variety of primitive and unconfined recreation activities are available including hiking, backpacking, horseback riding, snowshoeing, and sightseeing for botanical, zoological and geological features. The areas offer outstanding opportunities to view, photograph, film or hunt antelope, mule deer and bighorn sheep. All three areas lie within bighorn sheep hunting district 680, which is known for producing world-class trophy rams. Cross-country skiing is possible across the benches and along broad ridges, and would offer outstanding panoramic views of the badlands and breaks topography that is unique to the Missouri River breaks.

Portions of these areas provide year-long habitat for Greater Sage-Grouse, mule deer and pronghorn. Other values include numerous paleontological sites and prehistoric cultural resources such as subsistence gathering and processing areas, rock alignments, spiritual locales, and numerous habitation sites.

Historic cultural resources such as the physical remains of sites associated with farming, ranching, and the homestead era are also present. The Western Breaks and Badlands have a diverse and colorful history unique to the area, which also lends to a unique and diverse cultural landscape. It is important to note that physical manifestations associated with prehistoric and historic cultural resources are rarely apparent or visually dominating to the overall landscape.

Livestock grazing on private inholdings is managed in conjunction with adjacent BLM grazing allotments. Existing oil and gas leases may limit the BLM's ability to manage wilderness characteristics. Area 3A and the northern third of Area 4 are categorized as having "high" oil and gas development potential. Area 3B and the remainder of Area 4 are categorized as having "low" and "very low" development potential.

## Wildlife

### Wildlife Habitat

The BLM is responsible for managing wildlife habitat on BLM lands. State and federal wildlife management agencies are responsible for managing wildlife species populations. MFWP manages resident wildlife populations and migratory game birds in two regions which encompass the planning area (portions of MFWP Regions 4 and 6). The USFWS provides regulatory oversight for all species that are listed, proposed for listing, or are candidates for listing under the Endangered Species Act. The USFWS also administers the Migratory Bird Treaty Act, which protects migratory bird species whether hunted or not, and the Bald and Golden Eagle Protection Act, enacted in 1940, with amendments, which protects these eagle species from take without a permit.

Large blocks of native vegetation in Blaine, Phillips, and Valley Counties and southern Saskatchewan and Alberta, Canada have been noted by conservation organizations and others as providing some of the best remaining prairie in northern Great Plains (Licht 1997; Sieg, et al. 1999; TNC 1999; Cooper, et al. 2001; Predator Conservation Alliance 2005). These assessments note that, in addition to the large blocks of native habitat, these areas also possess relatively large populations of native prairie wildlife including a large black-tailed prairie dog (*Cynomys ludovicianus*) complex. This complex has provided recent opportunities to reintroduce black-footed ferrets. Other areas host some of the largest populations of grassland associated birds in the world (Hendricks, et al. 2007 and 2008).

Reintroduction efforts for swift fox (*Vulpes velox*) in the western portion of the planning area, on the Blackfeet Indian Reservation, and in southern Canada have resulted in the re-establishment of swift fox throughout much of the northern portion of the planning area and populations appear to be expanding (Moehrenschrager and Moehrenschrager 2006).

Portions of the planning area in southern Phillips and Valley Counties also support a large population of Greater Sage-Grouse (*Centrocercus urophasianus*) (Connelly, et al. 2004).

Grasslands and sagebrush shrublands are the dominant vegetative types, with grasslands generally more abundant to the north and sagebrush more abundant to the south. Grasslands and shrublands cover 8,726,000 acres (55% of the planning area and 92% of BLM land). Sagebrush provides crucial winter range for big game and is essential for Greater Sage-

Grouse and other sagebrush associated species such as the Brewer's sparrow (*Spizella breweri*) and sage thrasher (*Oreoscoptes montanus*). Many other species utilize the sagebrush vegetative type, including a number of reptiles and invertebrates. Other shrubs such as greasewood, chokecherry and wild rose provide important forage, hiding, or thermal cover for a variety of wildlife, including deer and elk (*Cervus elaphus*), sharp-tailed grouse (*Tympanuchus phasianellus*), migratory birds, and small mammals. The grasslands habitats, particularly those north of the Milk River, provide important habitat for a suite of grassland birds including Sprague's pipit (*Anthus spraguui*) and Baird's sparrow (*Ammodromus bairdii*). These grasslands are also important habitat for recently reintroduced swift fox (*Vulpes velox*) and pronghorn antelope (*Antilocapra americana*) as well as a variety of small mammals. Grassland and shrubland habitats also provide important foraging and breeding habitats for many raptor species such as golden eagles and ferruginous hawks.

Forests and woodlands are less abundant; however, they add structural and biological diversity to the landscape. About 640,000 acres of forests and woodlands in the planning area (includes all ownerships) are located mostly in the isolated mountain ranges (approximately 4% of the planning area and 2% of BLM land). Forests are mainly dry-mesic montane mixed conifer forests of ponderosa pine, Douglas-fir and lodgepole pine with scattered birch and aspen groves. Forest and woodlands provide summer cover for big game and are prime habitats for dusky grouse (*Dendragapus obscurus*) and northern goshawks (*Accipiter gentilis*). Veery (*Catharus fuscescens*), red-headed woodpecker (*Melanerpes erythrocephalus*), and ovenbird (*Seiurus aurocapillus*) are also species of interest.

Riparian and wetland vegetative types occur on less than 1% of BLM land; however, it is estimated that 70-85% of the wildlife use riparian habitats for at least a portion of their life cycles. Many amphibian species, as well as muskrat (*Ondatra zibethicus*), beaver (*Castor canadensis*), mink (*Mustela vison*), and various waterbirds and waterfowl, occur in riparian or wetland areas only. Songbirds are attracted to the structural and vegetative diversity for both nesting and migration habitat. Riparian areas are also important for bald eagles.

Montana Partners in Flight has categorized riparian habitats as a top priority for conservation of neotropical migrant birds (birds that breed in the United States and Canada and winter in Latin America) (Montana Partners in Flight 2000). The Prairie Potholes region, which is the most important waterfowl producing area in North America, includes the northern portion of the planning area. Wetland habitat continues to be lost to agriculture and drainage in the Prairie Potholes region. This loss increases the importance of wetland habitat on public lands in Montana, even though they make up less than 1% of the potholes region in North America.

## Historic Habitat Reduction and Fragmentation

Historical conditions for biological resources are a function of the interaction of physical factors (e.g., climate, soils, geology, and elevation), and disturbance factors (e.g., fire, grazing, drought). These physical and natural factors combined to produce the biological diversity present in the planning area prior to wholesale changes as a result of Euro-American settlement. Wildlife resources were noted as exceptionally abundant by early explorers. Human actions during the subsequent 200 years substantially changed the pattern, composition, structure, and function of plant and animal communities.

The most pervasive and extensive change to the grassland ecosystems of North America is the conversion of nearly 70% of native grasslands in the Great Plains to agriculture (Samson, et al. 2004). The conversion was facilitated by the Homestead Act of 1862 in the United States and the Canada Dominion Act of 1872. Under the Homestead Act, nearly 1.5 million people acquired and plowed over 309,000 sq. mi. (800,000 km<sup>2</sup>) of land, primarily in the Great Plains (Samson, et al. 2004). The impacts of land conversion in the late 1800s and early 1900s were greatest in the tallgrass portion of the Great Plains. The Northwestern Glaciated Plains ecoregion, which encompasses most of the planning area, has experienced less conversion than other areas of the Great Plains, with about 60% remaining in native vegetation (Samson, et al. 2004).

Currently, native vegetation covers about 59% of the planning area, with approximately 25% of the remaining native vegetation managed by the BLM. Much of the direct habitat loss from conversion to agriculture has occurred in the western portion of the planning area. The conversion of native habitats continues throughout the area and may increase as other crops are modified to grow in more arid environments and the demand for bio-fuels grows.

Converting native grasslands to agricultural lands not only resulted in a direct loss of habitats for native wildlife, it began a process of habitat fragmentation. Habitat loss is exacerbated when fragmentation reduces the size and/or isolates remaining habitat patches below the size thresholds necessary to support components of biological diversity or blocks the movement of animals between habitat patches. As large contiguous blocks of habitat are dissected into smaller blocks, they became more isolated from one another by dissimilar habitats and land uses. Over the last 40 to 50 years, range conditions have improved due to improved grazing management practices and livestock operations. Since 1997, the BLM has applied Standards for Rangeland Health to enhance sustainable livestock grazing and wildlife habitat while protecting watersheds and riparian ecosystems.

As blocks of habitat are repeatedly dissected into smaller blocks, adverse impacts including isolation can occur to individual plant and animal species and communities. The impacts of habitat fragmentation to biological resources can occur on multiple scales and can vary by species and the type of fragmentation. Actions that result in habitat loss are exacerbated when fragmentation reduces the size and/or isolates remaining habitat patches below size thresholds necessary to support particular species. Individual species have different thresholds of fragmentation tolerance. Large birds (golden eagle (*Aquila chrysaetos*)) have large territorial requirements and may be able to utilize habitat fragments smaller than their territory, while smaller birds (Sprague's pipit (*Anthus spragueii*)) favor habitat areas that are larger than their territory (Davis 2004).

Linear features including roads, railroads, trails, irrigation systems, and rights-of-way fragment the planning area. Interstate 15 and a network of state highways, county roads, local roads on private and public lands, and the Burlington Northern Railroad dissect much of the planning area. The development of irrigation and flood control reservoirs such as Tiber, Fresno, Nelson and Fort Peck reservoirs and their associated water distribution systems has also contributed to habitat fragmentation in and along the borders of the planning area. Some fences can also fragment habitats by blocking migration routes for some wildlife species such as pronghorn.

Changes in vegetation can also fragment native habitats. Irrigation water has supported the conversion of native plant communities to hay fields, pasture, and cropland, thereby fragmenting habitats for some native species. Roads and OHV use can promote the spread of noxious weeds through vehicular traffic, and noxious weed infestations can further exacerbate the fragmentation effects of roadways. The conversion of large acreages of sagebrush to predominately grassland communities can fragment habitat for sagebrush-dependent species such as the Greater Sage-Grouse. Recent interest in bio-fuel production on private lands has resulted in an increase in the conversion of lands formerly enrolled in the Conservation Reserve Program (CRP) or native grasslands to cropland, further emphasizing the importance of BLM lands and associated private ranch lands for the maintenance of large blocks of native grasslands and shrublands. Habitat fragmentation is most obviously due to the linear features identified in the previous discussion; however, fragmentation also occurs at population centers and other developments where humans live, work, and recreate. Developing private parcels and subdivisions or smaller ranchettes and associated buildings, roads, fences, and utility corridors has also contributed to habitat loss and fragmentation.

The remaining habitats have also been impacted by changes in ecologically important disturbances. Historical disturbances that shaped plant and animal habitats were primarily drought, grazing and fire. Drought occurs at broad scales and is unpredictable. Current variability in precipitation patterns and drought cycles is presumably similar to past patterns, although recent global climate changes may have profound changes in drought occurrences. The loss, fragmentation, and degradation of native grasslands throughout the Great Plains have severely impacted native wildlife associated with grassland habitats.

Large numbers of bison (*Bos bison*) formerly moved nomadically through the planning area in response to changes in vegetation associated with drought, past grazing, and fire. Grazing by bison occurred in large areas as huge herds moved through, and the impacts of these herds on the vegetation, soils, and riparian areas were probably extensive. The interval between grazing episodes may have ranged from one to eight years (Malainey and Sherriff 1996). The number of bison estimated to inhabit the Great Plains prior to Euro-American settlement is 30-60 million animals, but by 1890, only a few thousand animals remained (Knapp, et al. 1999). The last wild bison in the planning area were probably killed in 1885.

Rocky Mountain locusts (*Melanoplus spretus*) often erupted in swarms numbering in the billions and their impact on vegetation was also presumed to be extensive. Managed livestock grazing (mostly cattle) have replaced these grazers and their impact on grassland habitats is much different in scale and duration. Rocky Mountain locusts became functionally extinct by 1900 (Lockwood 2004).

Large fires often occurred, and fire regimes were probably highly variable depending on rainfall and subsequent grass growth (Umbanhowar 1996). The burns also removed much of the vegetation, which resulted in continual shifts in the abundance and distribution of species across large areas with the direction and extent of vegetation response mediated by drought and grazing by bison and/or locusts (Umbanhowar 1996). Only about 4,000 acres of the planning area burn per year and fire is no longer a major disturbance factor in this landscape.

In some areas, land use activities such as agriculture, oil and gas development, fire management, OHV use, recreation, and transportation have contributed to the degradation of remaining wildlife habitats. Examples of habitat degradation include:

- improper grazing management which has changed vegetation composition and increased soil compaction or erosion;
- oil and gas well and associated infrastructure development, which has disturbed soil for well pad and road development;
- increased human activity levels contributing to soil erosion, habitat fragmentation, and wildlife disturbance;
- fire suppression, which has depleted or completely removed the natural fire regime with which habitats evolved;
- improper OHV use, which has spread invasive weeds and disturbed wildlife;
- recreation activities, which have disturbed wildlife; and
- road placements, which have contributed to habitat fragmentation.

Other sections of Chapter 3 provide additional details regarding existing conditions of the resources and resource uses listed above.

Grassland birds, a suite of species adapted to differing grassland habitats resulting from the combination of historical disturbances noted above, have exhibited the steepest, most consistent and widespread decline of any group of birds in North America (Knopf 1994). Black-tailed prairie dogs have been reduced to about 2% of their former numbers (Kotliar, et al. 1999 and references therein), and the associated black-footed ferret was thought extinct until a small population was found in Wyoming in 1981. Grizzly bears (*Ursus arctos*) and gray wolves (*Canis lupus*) have also been extirpated throughout the Great Plains, but remain in the forested western portions of the planning area. Swift fox were also extirpated in the northern Great Plains, but have recently been reintroduced.

The historic impacts to wildlife habitat mentioned above have occurred to various degrees. Consequently, some areas contain habitats which function well and other areas no longer function very well for wildlife habitat. Some areas contain large, contiguous blocks of native habitats and other areas are composed of small, fragmented patches of native habitats.

The changes to native habitats noted above have also benefited some species of wildlife. Ring-necked pheasants (*Phasianus colchicus*), gray partridge (*Perdix perdix*), and wild turkey (*Meleagris gallopavo*) have been introduced and have responded positively to the changes in habitat. They have also become economically important game animals in the area. Raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), red fox (*Vulpes vulpes*), and white-tailed deer (*Odocoileus virginianus*) have also benefited from habitat changes and are more common now than they presumably were in the past.

Habitat management challenges include:

- the maintenance of heterogeneity in habitat composition and structure for grassland and shrubland communities;
- habitat fragmentation;
- invasion and spread of exotic species and noxious weeds;
- lack of a natural historic fire regime;
- competition for forage between native ungulates and livestock;
- restoration of areas damaged by surface-disturbing activities;
- integrating treatments of multiple resource programs to achieve landscape-level objectives; and
- maintaining a distribution and diversity of these communities sufficient to support wildlife, special status species, livestock, and other competing multiple use demands on BLM land.

## Wildlife Species

The variety of animals present is high and includes 63% of the total amphibian species, 88% of the total bird species, 80% of the total mammal species, and 68% of the total reptile species common to Montana. See Appendix Q for a complete list of wildlife species.

### Mammals

The planning area provides habitat for nearly 100 species of mammals. Although many of these are small mammals (bats, mice and shrews) which play important ecological roles in their associated habitats, the larger mammals (deer, bighorn sheep, elk and pronghorn) are the most economically important group of animals because of the interest in hunting these species. Large predators such as gray wolves, mountain lions (*Puma concolor*), and grizzly bears are limited in their distribution.

### Big Game

Pronghorn antelope (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), white-tailed deer, and elk (*Cervus elaphus*) are the most common big game animals. Pronghorn and deer occupy much of the planning area in the summer, but spend their winter in distinct areas (Figures 3.18 and 3.19). Two of these important winter range areas in Phillips County are the Frenchman Creek area and the vicinity of the Burnt Lodge WSA. The Bitter Creek WSA in Valley County and the Sweet Grass Hills ACEC in Liberty and Toole Counties are also important big game winter range areas.

The pronghorn population was estimated at 2.5 million at its peak prior to the settling of Montana. Populations have since declined, primarily due to loss of habitat. Originally, pronghorn were found throughout the plains, foothills and the broad intermountain valleys of Montana. By 1924, it was estimated that only about 3,000 pronghorn were surviving in central and southwestern Montana. By 1965, the population was estimated to have reached 75,000 animals.

Pronghorn are now found throughout the state where adequate habitat remains. The optimum habitat for pronghorn consists of open, rolling sagebrush grassland, as free from human disturbance as possible. Browse, primarily sagebrush, is vital in the pronghorn diet. Pronghorn utilize the sagebrush grassland habitats almost exclusively during the winter (Figure 3.17). Pronghorn from Canada and north of the Milk River migrate along major drainages to winter concentration areas along the Milk River during severe winters. Periodic pronghorn winter die offs have been recorded over the last 40 years due to severe winter conditions. The estimated mortality was nearly half during the 1977-78 winter, with most deaths attributed to malnutrition. Pronghorn residing south of the Milk River will migrate south of the Missouri River in severe winters. Some winters are critical seasons for pronghorn survival. Fencing in pronghorn habitat exacerbates this issue. Bison once played an important role to enhance pronghorn travel, feeding and survival during periods of deep snow. Bison create feeding craters in which the smaller pronghorn can find important forage resources. Bison create trails through patches of deep snow that may be used by pronghorn, increasing their access to forage resources and reducing energy requirements for travel. Most populations of pronghorn are currently stable and near management goals, although there are concerns for pronghorn in northern Blaine and Phillips Counties due to recent population declines.

Mule and white-tailed deer are the most numerous big game animals. Mule Deer typically inhabit drainage bottoms; rough, broken side slopes; upland areas where sagebrush is common; wooded breaks; and mountain foothills (Figure 3.18).

White-tailed deer habitat is relatively rare on BLM land, with most habitats occurring along drainage bottoms with tall brushy vegetation such as those along the Milk, Marias, and Missouri rivers and smaller tributaries. They are often associated with private croplands. White-tailed deer are expanding their range, probably in response to the continued conversion of native rangelands to agriculture.

Populations of both deer species are currently high. During winters of heavy snowfall, sagebrush is often the only available forage plant and becomes crucial to the survival of many mule deer herds. In severe winters deer also congregate on private agricultural lands and can cause severe haystack damage. Deer in the mountains may move to

lower elevations during severe winters. Mule deer populations are also impacted by drought and white-tailed deer populations may also fluctuate due to epizootic hemorrhagic disease (EHD).

Elk distribution across Montana has changed dramatically, from statewide distribution at the time of pre-settlement, to small, remnant herds in remote mountainous areas by the turn of the century. Elk are currently found throughout the state in areas where suitable habitat remains. Elk distribution in habitat along the Missouri River today is the result of transplant efforts and big game management (Figure 3.19). Elk populations are currently above desired levels because of healthy reproductive success and lack of adult mortality.

Bighorn sheep (*Ovis canadensis*) were originally found in mountainous areas and along the Missouri River. Overhunting and disease soon restricted bighorn sheep populations to rugged mountain habitat in the western portion of the planning area. MFWP reintroduced bighorn sheep in the Missouri River Breaks between 1950 and 1980 and in the Little Rocky Mountains in the 1970s. These populations have increased and currently support limited hunting within the Missouri River Breaks area (Figure 3.20). The Little Rocky Mountains population has fluctuated, but meadow restoration projects and reclamation of the Zortman/Landusky Mine are improving habitat conditions.

Other big game species include moose (*Alces alces*), mountain goat (*Oreamnos americanus*), mountain lion, and black bears (*Ursus americanus*). Moose and mountain goat primarily occur in the western portion of the planning area. Mountain lion and black bears occur in suitable habitat throughout the planning area. Moose sightings are on the rise, especially in the Sweet Grass Hills and from wandering individuals in northern Phillips and Valley Counties.

Management of big game populations occurs through regulated hunting by MFWP. The distribution and populations of big game species may be affected by the ability of hunters to access areas where the animals are located.

Seasonal and spatial protective stipulations are currently applied by the BLM around identified seasonal habitat use areas to afford big game and their habitat a level of protection from human disturbance and industrial activities.

Habitat management challenges for big game include:

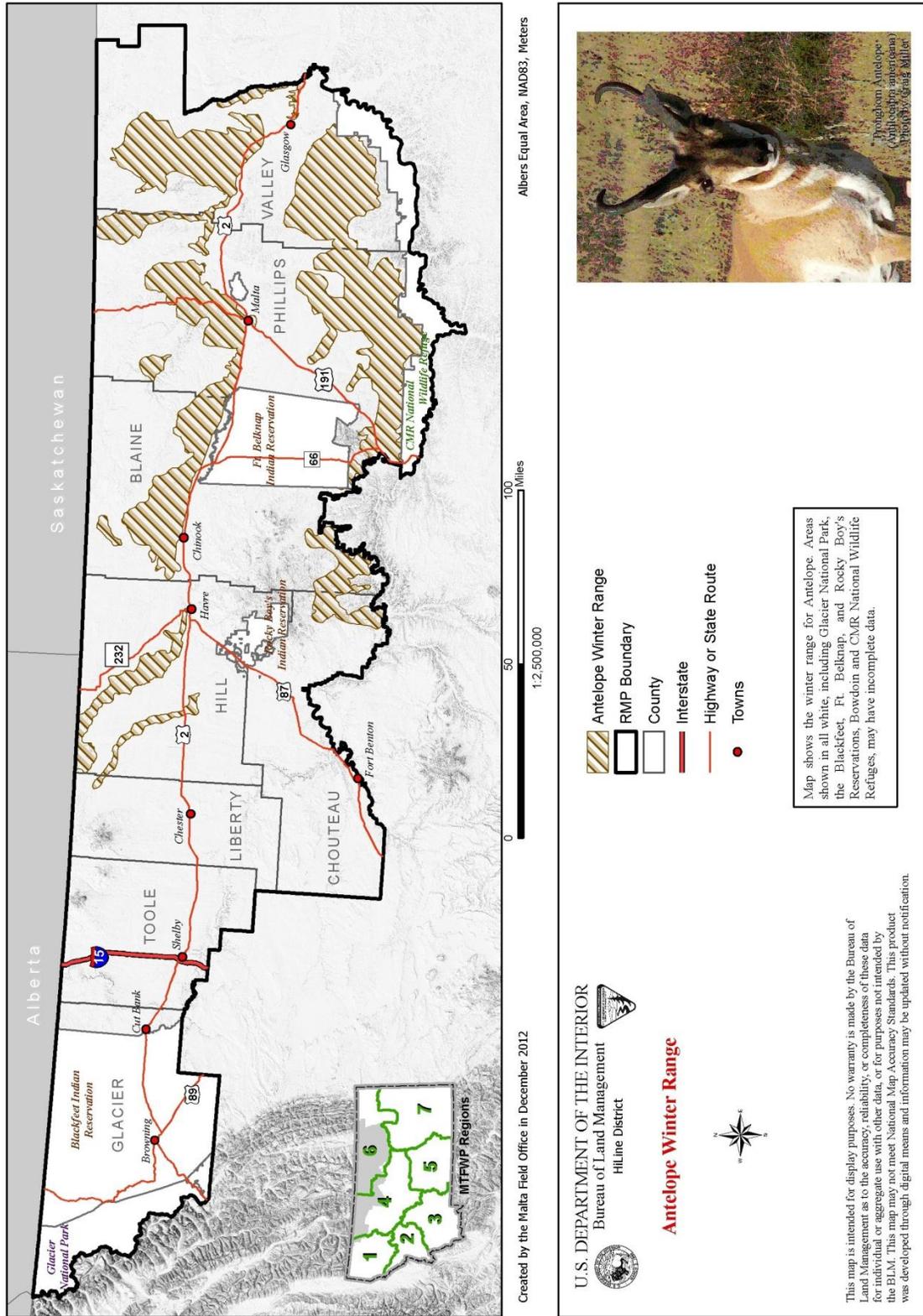
- habitat degradation (particularly browse forage), fragmentation, and loss;
- incompatible land use practices (land conversion, industrial activities, intensive recreational activities);
- incompatible stock (domestic sheep grazing in or near bighorn sheep habitat); and
- impacts from human disturbance during sensitive periods and barriers to animal migration.



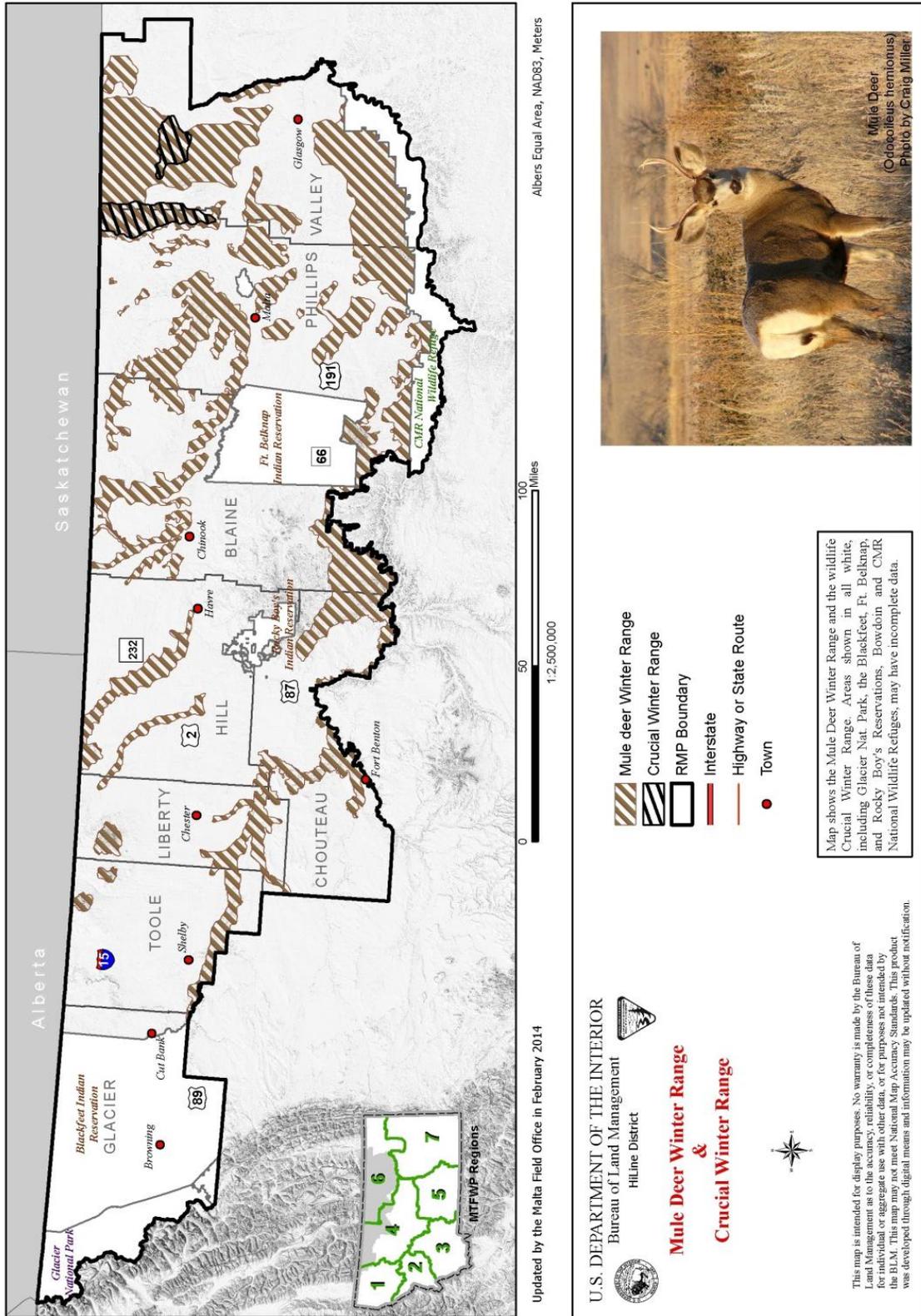
Mule Deer

Photo by John Carlson

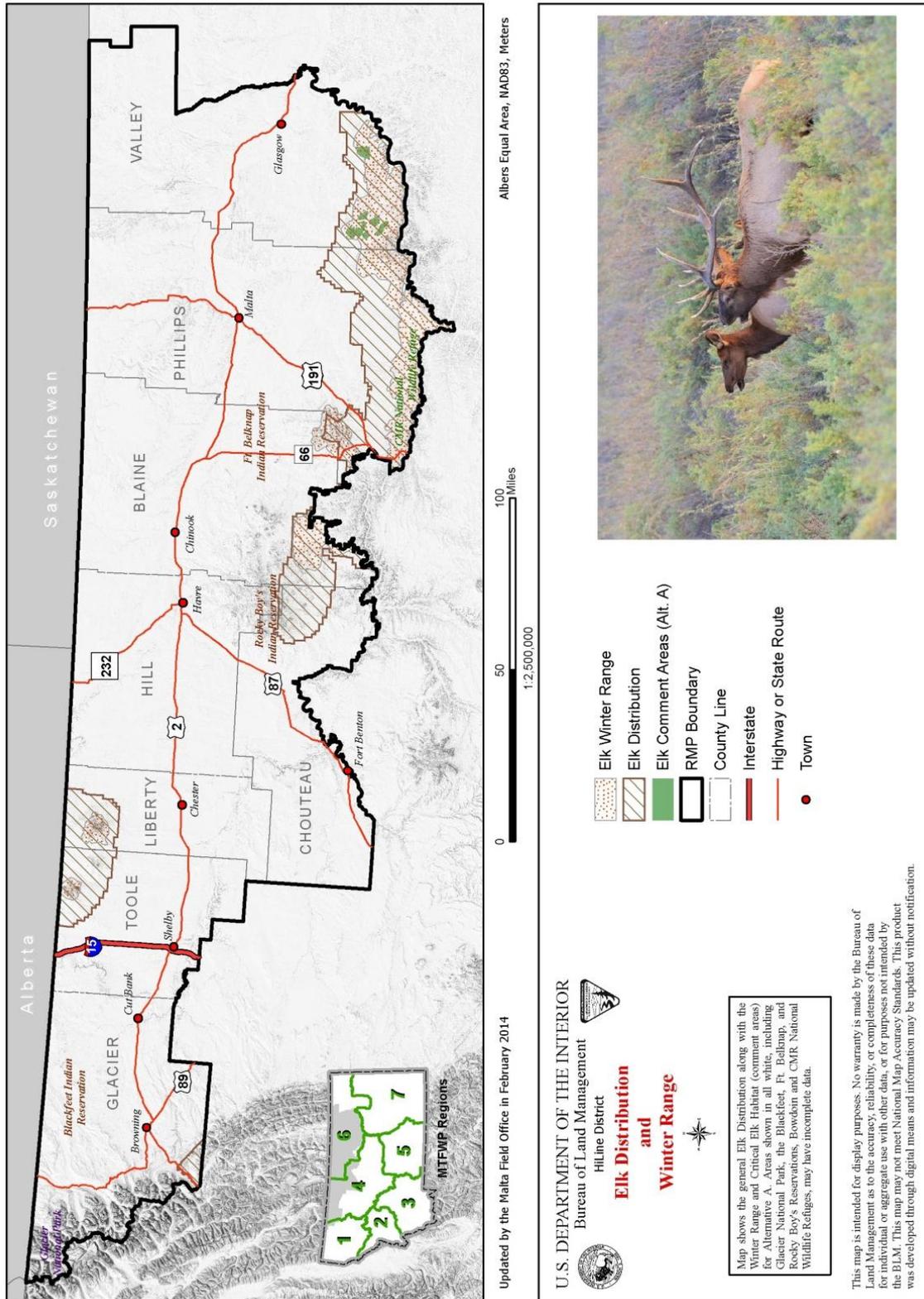
**Figure 3.17**  
**Pronghorn Antelope Winter Range**



**Figure 3.18**  
**Mule Deer Winter Range and Crucial Winter Range**



**Figure 3.19**  
Elk Distribution and Winter Range



Updated by the Malta Field Office in February 2014

U.S. DEPARTMENT OF THE INTERIOR  
Bureau of Land Management  
HiLine District

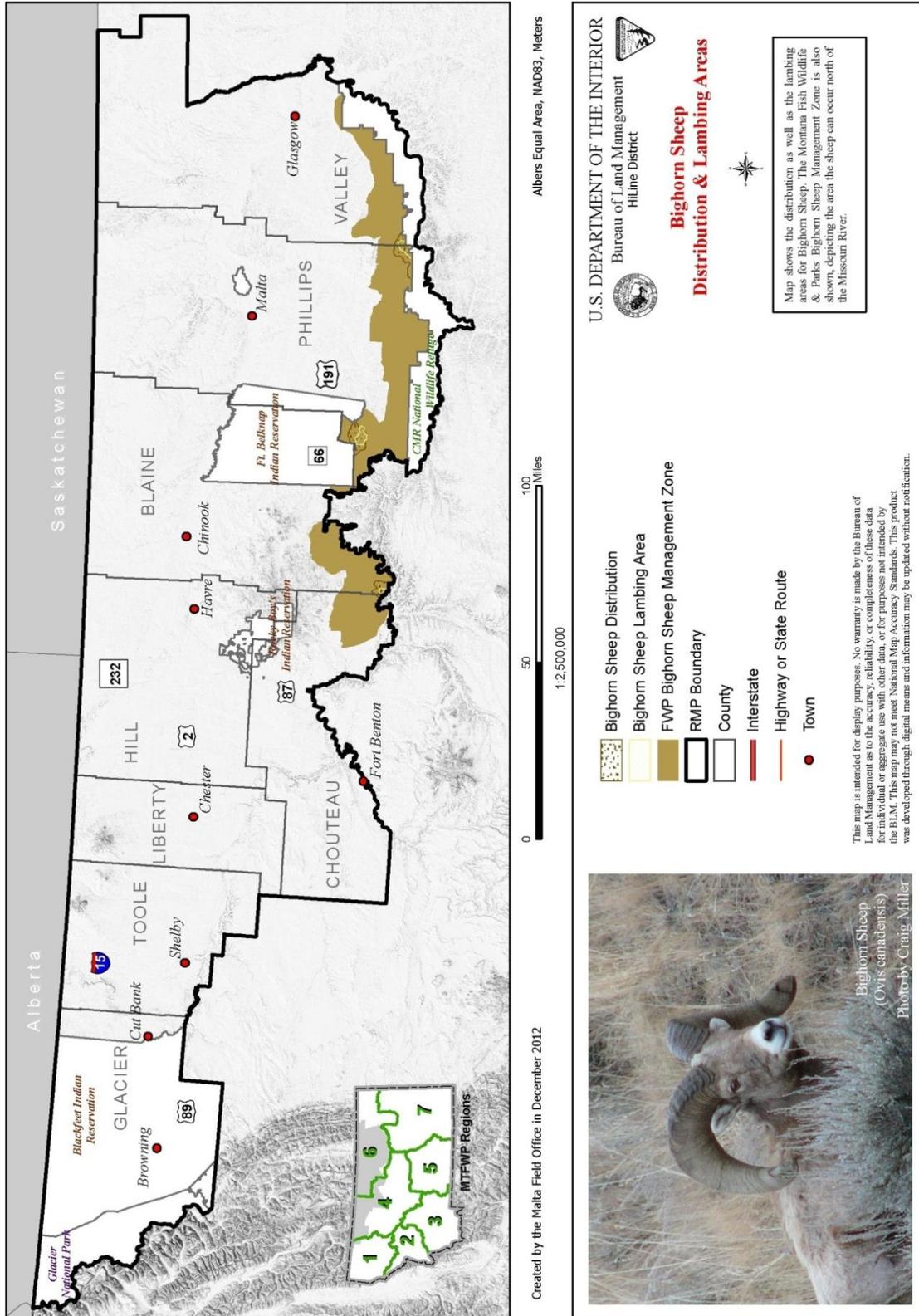
**Elk Distribution and Winter Range**

Map shows the general Elk Distribution along with the Winter Range and Critical Elk Habitat (comment areas) for Alternative A. Areas shown in all white, including Glacier National Park, the Blackfeet, Ft. Belknap, and Rocky Boy's Reservations, Bowdoin and CMR National Wildlife Refuges, may have incomplete data.

This map is intended for display purposes. No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data, or for purposes not intended by the BLM. This map may not meet National Map Accuracy Standards. This product was developed through digital means and information may be updated without notification.



**Figure 3.20**  
**Bighorn Sheep Distribution and Lambing Areas**



Created by the Malta Field Office in December 2012

Albers Equal Area, NAD83, Meters

## Birds

About 370 species of birds have been observed in the planning area. A variety of habitats provide important breeding, wintering, and migration habitats for many of these species, although some species are rarely found. Grassland-associated species are declining in most other parts of their range and are included in a number of special status species lists at the state and national levels.

Nearly all species of birds in the planning area are protected by the Migratory Bird Treaty Act of 1918. Further emphasis on migratory birds was enacted by Executive Order 13186 which, in part, instructed federal agencies to consider migratory birds, especially special status species, in any environmental review process. In addition, intact grassland and sagebrush environments provide habitat for a variety of upland game birds which are economically important as hunted species.

A number of management plans related to birds have been developed. The Montana Bird Conservation Plan (Montana Partners in Flight 2000) contains conservation actions for Montana's birds. The North American Waterfowl Management Plan (NAWMP) was developed in 1988 because of the decline of waterfowl production in the United States and Canada. The NAWMP plan has been divided into various joint ventures for implementation, with the Prairie Pothole Joint Venture (PPJV) encompassing most of the planning area. A number of bird-associated projects related to waterfowl have been implemented with this joint venture. The BLM is a partner in the PPJV Implementation Plan (PPJV 2005). This plan addresses the conservation needs of four species groups: waterfowl, shorebirds, waterbirds, and landbirds (each with their own national level plan); and outlines goals and objectives for bird conservation that the BLM can integrate into programmatic and site-specific management decisions.

Important Bird Areas (IBAs) are areas designated by the National Audubon Society. IBAs are sites that provide essential habitat for one or more species of bird. IBAs include sites for breeding, wintering, and/or migrating birds. Six IBAs are within the HiLine planning area.

### Colonial Waterbirds

Colonial waterbirds nesting in the planning area include black-crowned night-herons (*Nycticorax nycticorax*), double-crested cormorants (*Phalacrocorax auritus*), great blue herons (*Ardea herodias*), eared grebes, (*Podiceps nigricollis*), ring-billed gulls (*Larus delawarensis*), California gulls (*Larus californicus*) and common terns (*Sterna hirundo*).

In addition, black terns (*Chlidonias niger*), Franklin's gulls (*Larus pipixcan*), American white pelicans (*Pelecanus erythrorhynchos*), and white-faced ibis (*Plegadis chihi*) are colonial waterbird BLM species of concern found in the planning area. These birds are important because they nest in large colonies in limited areas and are highly vulnerable to habitat changes and disturbances to the breeding colonies.

Current management actions focus on protecting colonial waterbird colonies from human disturbance. The wetland/water-associated habitats upon which they depend are maintained through wetland-specific management.

Habitat management challenges for colonial waterbirds include protecting habitat from degradation and loss, and minimizing human disturbance.

### Game Birds

The Greater Sage-Grouse, sharp-tailed grouse, ring-necked pheasant, gray partridge, mourning dove (*Zenaida macroura*) and wild turkey are the most popular game birds, with established hunting seasons and limits. Dusky (formerly Blue) grouse and Ruffed grouse (*Bonasa umbellus*) occur in mountain forests and are also hunted.

Greater Sage-Grouse populations are dependent on sage habitats. See the Special Status Species section below for further discussion on Greater Sage-Grouse.

Sharp-tailed grouse occur in grassland, shrub, riparian and woodland habitat types and often use agricultural lands where they coincide with native vegetation. Woody draws and woodlands containing buffaloberry, snowberry, juniper, and wild rose are used extensively for food and cover during the winter. Sharp-tailed grouse continue to be of concern due to

increasing fragmentation of habitat, habitat changes due to loss of buffaloberry shrubs, and disturbance from resource uses.

Mourning doves are common and adaptable to a wide variety of habitat disturbances.

Ring-necked pheasants and gray partridge were introduced into Montana in the 1800s and have done well. Ring-necked pheasants primarily occur where there are grain crops for food, shrub and trees for cover, and cattail and bulrush in wetland areas for winter cover. Gray partridge occur throughout the planning area and are associated with most vegetation types and agricultural lands. They feed primarily on small grain crops, but do consume forbs during the summer.

Wild turkeys are native to North America, but not to Montana, and all populations in Montana are the results of introductions. The establishment and maintenance of wild turkey populations is dependent on the presence of mast crops for food adjacent to areas with large roosting trees.

Populations of all of these species fluctuate, primarily in response to weather events. The large blocks of habitat in the planning area support large populations of these species, which allow them to rebound in response to negative weather events. Populations are generally healthy and provide good hunting opportunities with associated economic input to the local economies during hunting season.

Current management actions focus on avoiding disturbance to game bird species and the habitats upon which they depend. Seasonal and spatial protective stipulations are currently applied around identified lek sites and seasonal habitats to afford protection from human disturbance and industrial activities.

Habitat management challenges for game birds include habitat degradation (loss of important forage shrubs, nesting cover, and invasive, exotic vegetation), fragmentation, and loss; human disturbance during sensitive periods; and incompatible land use practices (land conversion, industrial activities, and intensive recreational activities).

### **Migratory Birds**

In addition to the sensitive species already mentioned, many species of migratory birds occur throughout the planning area and breed along the riparian corridors and forested landscapes. The planning area provides important stopover habitat for others, including many special status species migrating through the area in the spring and fall on their way to and from breeding habitats.

Current management actions focus on avoiding destruction and disturbance of breeding habitats and nesting locations, primarily from surface-disturbing activities. Other management actions such as the implementation of standards and guidelines (BLM 1997a) have benefited a variety of migratory birds, particularly those species associated with grasslands and shrublands (see a further discussion in the Sensitive Species section below).

Management challenges for migratory birds include habitat degradation, fragmentation, and loss from exotic and invasive plants; lack of riparian structure and diversity; and incompatible land use practices (e.g., land conversion, snag removal, industrial activities, and intensive recreational activities). Other challenges include impacts from human disturbance during sensitive periods, collision with powerlines and tower guy lines, and avoidance of and collision with wind turbines.

### **Raptors**

The open grassland, sagebrush, and shrubland vegetative types are home to many raptor species. Raptors are attracted to the abundant prey, including upland game birds, small game, and numerous rodent species. Sixteen diurnal raptor species and fourteen owl species are known to occur, eight of which are BLM sensitive species (see the Special Status Species section below).

Seasonal and spatial protective stipulations are currently applied around identified nest sites and communal roost areas to afford raptors a level of protection from human disturbance and industrial activities.

Habitat management challenges for raptors include habitat degradation, fragmentation, and loss; lack of cottonwood regeneration; collision with and/or electrocution from powerlines; collision with wind turbines; and incompatible land use practices (land conversion, snag removal, industrial activities, intensive recreational activities, removal of burrowing mammals). Other challenges include impacts from contaminants such as lead poisoning and rodent control chemicals, and human disturbance during sensitive periods.

### Waterfowl

Most species of North American waterfowl have been found in the planning area and many of these species are common migrants. Common nesting species are the Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), Northern pintail (*Anus acuta*), gadwall (*Anas strepera*), American wigeon (*Anas americana*), Northern shoveler (*Anas clypeata*), blue-winged teal (*Anas discors*), cinnamon teal (*Anas cyanoptera*), green-winged teal (*Anas crecca*), redheads (*Aythya americana*) and lesser scaup (*Aythya affinis*).

Natural potholes and reservoirs are crucial for nesting waterfowl with reservoirs becoming increasingly important during dry years. Waterfowl depend primarily on cover in the upland areas and on islands in the spring for successful nesting. Quality breeding habitat for most waterfowl species includes dense nesting cover for breeding success sufficiently close to water bodies which support emergent vegetation and an abundant food supply of aquatic insects for ducklings. Man-made islands that provide security from predators during nesting have been constructed in many reservoirs and are important to Canada geese, some duck species and many other wetland-associated birds. Diving ducks, such as scaup and redheads, also require open and deep water that supports fish and aquatic insects. Dabbling ducks, such as mallards and teal, require migration and winter habitats with a mix of open water for loafing and emergent vegetation for food and cover.



Canada Goose

Photo by Craig Miller

Major rivers such as the Milk and Marias also provide waterfowl habitat. Canada geese, mallards, common mergansers (*Mergus merganser*), American wigeon, wood ducks (*Aix sponsa*), and common goldeneyes (*Bucephala clangula*) are the primary species nesting on the rivers. The largest number and variety of waterfowl occur during fall and spring migrations when the birds utilize harvested grain fields and marshes away from the rivers and return to the rivers for roosting and cover.

Current and past management actions have focused on creating and enhancing reservoirs and nesting islands. Annual waterfowl production has increased due to the construction and enhancement of these reservoirs and nesting islands. Other management actions such as the implementation of standards and guidelines (BLM 1997a) have benefited waterfowl, primarily through the increase in residual cover in nesting areas.

The current emphasis for waterfowl management is centered on wetland restoration. Management challenges for waterfowl include habitat degradation through the loss of upland cover surrounding breeding areas and habitat fragmentation and loss. Many productive waterfowl wetlands are frequently dry, but can produce large numbers of waterfowl when water conditions are favorable. Maintaining the hydrology of these areas is a challenge.

### Amphibians and Reptiles

Little is known of most reptiles and amphibians in the planning area, but they constitute a significant portion of the wildlife found therein. Ten species of amphibians and 13 reptile species are currently known to inhabit the planning area (Maxell, et al. 2009).

Current management for reptiles and amphibians is limited to habitat protection through broad-scale management actions such as standards and guidelines (BLM 1997a) and riparian and aquatic habitat management.

Habitat management challenges for reptiles and amphibians include maintaining populations; minimizing wetland habitat degradation, loss, and impacts from contaminants; controlling exotic and invasive species such as predatory fish and noxious weeds that degrade wetland habitats; minimizing the impacts of diseases; and maintaining natural hydrologic regimes. Western rattlesnake hibernacula have been identified in the planning area. Amphibian larvae may be sensitive to contaminants and adults may bioaccumulate toxic pollutants from insect prey. Some amphibian populations in Montana have recently undergone, or are currently undergoing, declines and extirpations. Impacts from a variety of human activities may affect the viability of reptile and amphibian populations.



Western Rattlesnake

Photo by Craig Miller

## Wildlife Special Status Species

Special status species are animals that require particular management attention due to population or habitat concerns and are:

- federally listed threatened and endangered species and designated critical habitats;
- federally proposed species and proposed critical habitats;
- federal candidate species;
- delisted species within the 5 years following delisting; or
- Montana BLM sensitive species.

The BLM accomplishes its threatened and endangered species management through coordination with USFWS and MFWP. The BLM initiates Section 7 consultation with the USFWS before approving or implementing any action that may affect listed species or designated critical habitat. Streamlined consultation procedures detailed in the July 27, 1999 Memorandum of Agreement (MOA) and subsequent implementation guidance for Section 7 consultations are utilized to provide collaborative opportunities in the consultation process. The BLM has entered into an MOA with the USFWS to improve the efficiency and effectiveness of RMP-level Section 7 consultation processes under the ESA. Through this MOA, the BLM agrees to promote the conservation of candidate, proposed, and listed species, and to informally and formally consult on listed and proposed species and designated and proposed critical habitat during planning to protect and improve the condition of species and their habitats to a point where their special status is no longer necessary.

Federally listed species can have critical habitat identified as crucial to species viability. For those species that are listed and have not had critical habitat designations identified for them, the BLM cooperates with the USFWS to determine and manage habitats of importance. Protective measures for migratory birds are provided in accordance with the Migratory Bird Treaty Act of 1918 and Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), enacted in 1940, with amendments. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act (1934).

Special status species indicators reflect population levels, distribution, and quantity and quality of preferred and suitable habitat and the prey needed to support them. This includes critical breeding, wintering grounds, and corridors needed to support migrations and a healthy genetic pool needed for adaptability to future circumstances and conditions. Indicators are detected through allotment evaluations, stream and vegetation monitoring, population surveys, the Natural Heritage Program database, field observations, and USFWS data.

## Montana BLM Sensitive Species

Montana BLM sensitive species are those species designated by the BLM State Director, usually in cooperation with the state agency responsible for managing the species and State Natural Heritage programs. BLM sensitive species are those species that:

- could become endangered in or extirpated from a state, or within a significant portion of its distribution;
- are under status review by the USFWS and/or National Marine Fisheries Service;
- are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution;
- are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, candidate, or state listed status may become necessary;
- species that have been delisted within the last five years;
- typically have small and widely dispersed populations;
- inhabit ecological refugia or other specialized or unique habitats; or
- are state-listed, but which may be better conserved through application of BLM sensitive species status.

Over half of the vertebrate animal species considered sensitive by the Montana BLM occur within the planning area and include 6 mammal species, 34 bird species, 4 amphibian species, and 4 reptile species. Table 3.58 shows the species occurring on BLM land and their general habitat association. The planning area contains a large proportion of the global breeding range for many of these species. The Montana BLM will review and update the Bureau sensitive species list once every five years in coordination with state agencies responsible for fisheries, wildlife, and botanical resources (BLM 6840 – Special Status Species Management Manual).

For most special status species, comprehensive data on population numbers and distribution within the planning area are not available. Occurrence data from the Montana Natural Heritage Program identify the presence and location for some special status wildlife species in the planning area; however, these data reflect observations from opportunistic or project-specific surveys rather than a complete inventory of the planning area.

Species added to the sensitive species list will have management actions developed to conserve, enhance and protect the species in accordance with applicable BLM guidance.

The special status species in the planning area are primarily associated with grasslands and sagebrush habitats. Many of the sensitive species are fairly common because of the relatively intact large areas of habitat still remaining compared to other parts of their range. See the Wildlife Habitat section above for a more detailed discussion of changes throughout the Great Plains which have led to designating many of the species discussed below as special status species.

Most management actions will be directed at maintaining habitat and the processes that provide habitat diversity in the planning area. Where species-specific management can improve individual special status species habitats or populations, those actions will be considered as long as they are also compatible with long-term persistence of other habitats and species.

If species which occur on BLM lands in the planning area are added to the T&E list in the future, management actions will be developed to conserve, enhance and protect the species in accordance with the Endangered Species Act.

### Sensitive Species – Mammals

Six species of mammals in the planning area are designated as Montana BLM sensitive species (see Table 3.58).

#### Bats

Three of the species are bats and there is limited knowledge of their distribution and habitat needs in the planning area. Two species, Townsend's big-eared bat and long-legged myotis, have been found in and around Azure Cave in the Little Rocky Mountains. Azure Cave has been designated an ACEC because of their presence as well as the large number of other bat species that hibernate in the cave. The status of populations for these species is unknown.

While no specific management actions exist for bats, management actions associated with standards and guidelines (BLM 1997a) are thought to maintain or improve habitats for most bat species. Water tanks located on BLM lands have been fitted with escape ramps to minimize drowning by bats and other species. Future management actions specifically for bats will require more information on bat distribution and habitat use in the planning area.

<b>Table 3.58 Montana BLM Sensitive Species In the HiLine Planning Area</b>				
<i>Common Name</i>	<i>Scientific Name</i>	<i>State of MT Species of Concern</i>	<i>MFWP Tier Level*</i>	<i>General Habitat</i>
<b>Mammals</b>				
Fringed Myotis	<i>Myotis thysanodes</i>	SOC	2	Shrubland/Forest
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	SOC	1	Shrubland
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	SOC	1	Grassland
Swift Fox	<i>Vulpes velox</i>	SOC	2	Grassland
Long-legged Myotis	<i>Myotis volans</i>		2	Forest
Gray Wolf	<i>Canis lupus</i>		1	Forest
<b>Birds</b>				
American Three-toed Woodpecker	<i>Picoides dorsalis</i>	PSOC	2	Forest
Baird's Sparrow	<i>Ammodramus bairdii</i>	SOC	2	Grassland
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SOC	1	Forest
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	SOC	3	Wetland
Black Tern	<i>Chlidonias niger</i>	SOC	1	Wetland
Black-backed Woodpecker	<i>Picoides arcticus</i>	SOC	1	Forest
Bobolink	<i>Dolichonyx oryzivorus</i>	SOC	3	Moist Grassland
Brewer's Sparrow	<i>Spizella breweri</i>	SOC	2	Shrubland
Burrowing Owl	<i>Athene cunicularia</i>	SOC	1	Grassland
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	SOC	3	Grassland
Common Loon	<i>Gavia immer</i>	SOC	1	Lake
Dickcissel	<i>Spiza americana</i>	SOC	2	Grassland
Ferruginous Hawk	<i>Buteo regalis</i>	SOC	2	Grassland
Franklin's Gull	<i>Larus pipixcan</i>	SOC	2	Grassland/Wetland
Golden Eagle	<i>Aquila chrysaetos</i>		2	Shrubland
Great Gray Owl	<i>Strix nebulosa</i>	SOC	2	Forest
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	SOC	1	Shrubland
Harlequin Duck	<i>Histrionicus histrionicus</i>	SOC	1	Forest/Stream
Le Conte's Sparrow	<i>Ammodramus leconteii</i>	SOC	2	Grassland/Wetland
Loggerhead Shrike	<i>Lanius ludovicianus</i>	SOC	2	Shrubland
Long-billed Curlew	<i>Numenius americanus</i>	SOC	1	Grassland
Marbled Godwit	<i>Limosa fedoa</i>		2	Grassland/Wetland
McCown's Longspur	<i>Calcarius mccownii</i>	SOC	2	Grassland
Mountain Plover	<i>Charadrius montanus</i>	SOC	1	Grassland
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsoni</i>	SOC	1	Grassland/Wetland
Northern Goshawk	<i>Accipiter gentilis</i>	SOC	2	Forest
Peregrine Falcon	<i>Falco peregrinus</i>	SOC	2	Forest

<b>Table 3.58 Montana BLM Sensitive Species In the HiLine Planning Area</b>				
<i>Common Name</i>	<i>Scientific Name</i>	<i>State of MT Species of Concern</i>	<i>MFWP Tier Level*</i>	<i>General Habitat</i>
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SOC	2	Forest
Sage Thrasher	<i>Oreoscoptes montanus</i>	SOC	3	Shrubland
Sprague's Pipit	<i>Anthus spragueii</i>	SOC	2	Grassland
Swainson's Hawk	<i>Buteo swainsoni</i>	SOC	2	Grassland
Trumpeter Swan	<i>Cygnus buccinator</i>	SOC	1	Wetland
Veery	<i>Catharus fuscescens</i>		2	Forest
White-faced Ibis	<i>Plegadis chihi</i>	SOC	2	Wetland
Willet	<i>Catoptrophorus semipalmatus</i>		3	Grassland/Wetland
Wilson's Phalarope	<i>Phalaropus tricolor</i>		3	Grassland/Wetland
<b>Amphibians and Reptiles</b>				
Great Plains Toad	<i>Bufo cognatus</i>	SOC	2	Grassland/Wetland
Greater Short-Horned Lizard	<i>Phrynosoma hernandesi</i>	SOC	2	Grassland
Milksnake	<i>Lampropeltis triangulum</i>	SOC	1	Shrubland
Northern Leopard Frog	<i>Rana pipiens</i>	SOC	1	Wetland
Plains Spadefoot	<i>Spea bombifrons</i>	SOC	2	Grassland/Wetland
Snapping Turtle	<i>Chelydra serpentina</i>	SOC	3	River/Stream
Spiny Softshell Turtle	<i>Apalone spinifera</i>	SOC	1	River/Stream
Western Hog-nosed Snake	<i>Heterodon nasicus</i>	SOC	1	Grassland
Western Toad	<i>Bufo boreas</i>	SOC	1	Forest/Wetland

\*Tier 1: Greatest conservation need. MFWP has a clear obligation to use its resources to implement conservation actions that provide direct benefit to these species, communities, and focus areas.

Tier 2: Moderate conservation need. MFWP could use its resources to implement conservation actions that provide direct benefit to these species, communities, and focus areas.

Tier 3: Lower conservation need. Although important to Montana's wildlife diversity, these species, communities, and focus areas are either abundant and widespread, or are believed to have adequate conservation already in place.

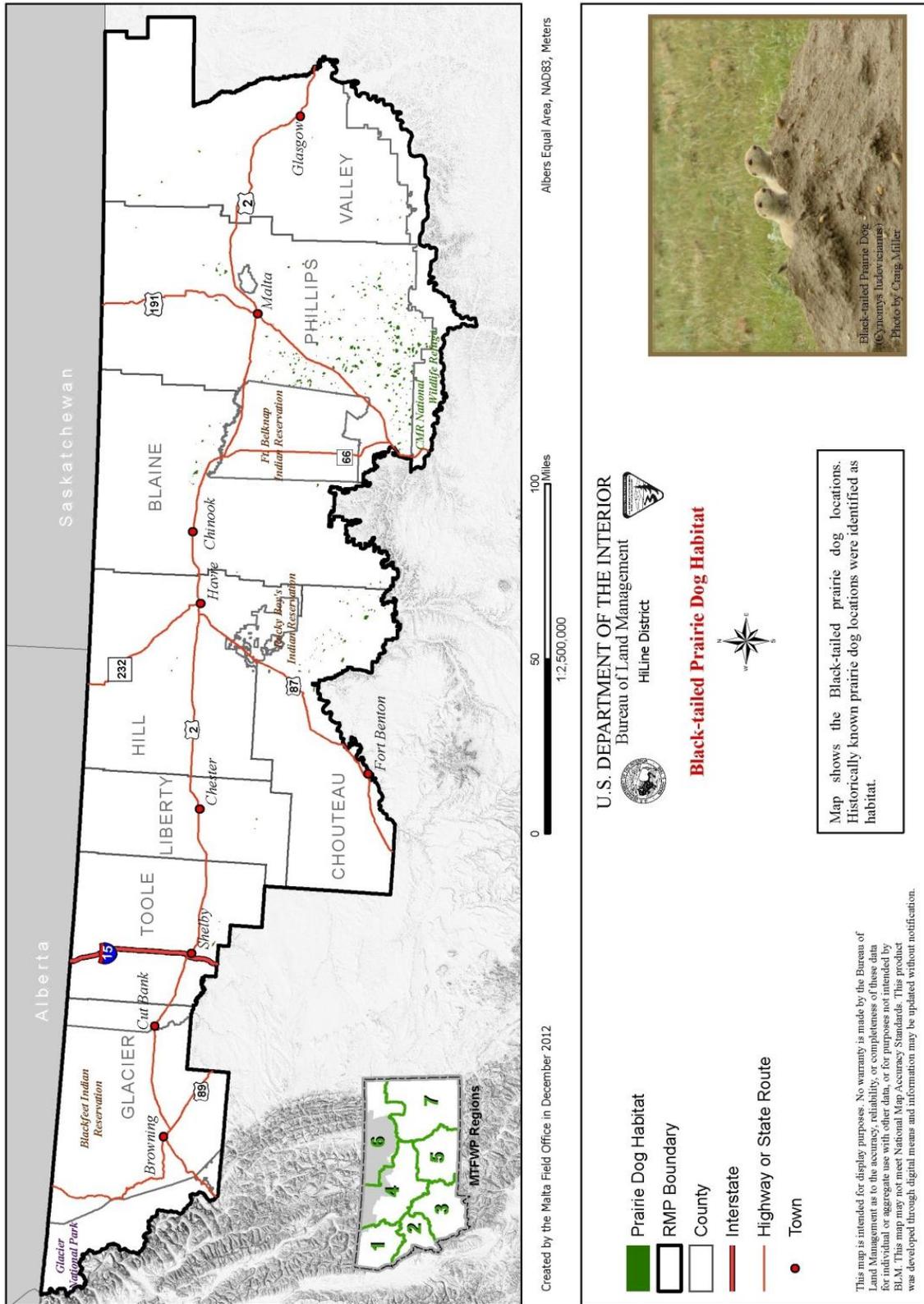
See MFWP State Comprehensive Wildlife Plan (2005).

### **Black-tailed Prairie Dogs**

Black-tailed prairie dogs exist throughout the planning area, with large concentrations in southern Phillips County (Figure 3.21). Prairie dog towns provide habitat for numerous vertebrate species, including other sensitive species such as the burrowing owl, swift fox, mountain plover, and black-footed ferret (Kotliar, et al. 1999). In 1988, approximately 253 black-tailed prairie dog towns covered over 22,789 acres. The Fort Belknap Indian Reservation and Charles M. Russell National Wildlife Refuge contain about 26,500 acres of black-tailed prairie dog towns. Acreage figures have fluctuated greatly since 1992, when sylvatic plague was discovered in the black-tailed prairie dog population of southern Phillips County. Plague continues to be the primary factor in determining prairie dog populations in the planning area.

A statewide conservation plan for black-tailed and white-tailed prairie dogs was approved in 2002, and the Final MFWP Region 6 Prairie Dog Abundance and Distribution Objectives Plan (which encompasses all the prairie dogs in the planning area) was finalized in April 2006. MFWP is currently mapping prairie dog distribution in the planning area to determine how the current status matches with the plan, and management actions will be proposed to help meet the objectives outlined in the plan, including one complex of at least 5,000 acres of active prairie dog towns within 1.5 km of each other (MFWP 2005).

**Figure 3.21**  
**Black-tailed Prairie Dog Habitat**



### **Gray Wolves**

Gray wolves were formerly abundant throughout the planning area, but were exterminated from the eastern plains by 1900 and from the rest of Montana by the 1930s. Wolves from Canada began to re-colonize the Glacier National Park area in 1979, and the first wolf den in the western U.S. in over 50 years was documented there in 1986. The wolf population in northwest Montana grew as a result of natural reproduction and dispersal and in May, 2009, gray wolves were removed from the endangered species list.

Montana's first fair chase wolf hunting season occurred in 2009 with a statewide quota of 75 wolves. A total of 72 wolves were taken and the season was closed November 16 when quota numbers were nearly met in Wolf Management Units (WMUs) 1 and 2, and exceeded in WMU 3. The Planning Area is entirely within Wolf Management Unit 1. The wolf quota in WMU 1 was 41. Thirty-eight wolves were harvest prior the November 16 season closure.

A U.S. District Court decision formally reinstated federal Endangered Species Act protections for wolves in the Northern Rockies on August 5, 2010. In May 2011, the USFWS once again removed gray wolves in Montana from the Federal List of Endangered and Threatened Wildlife. Wolves will be managed under Montana's federally approved Gray Wolf Conservation and Management Plan. To avoid relisting, Montana will comply with federal regulations to manage wolves in a manner that will guarantee that the state maintains at least a minimum of 150 wolves and 15 breeding pairs. The line separating Montana in the northern Endanger Area and southern Experimental Area no longer exists and the wolf is reclassified under Montana law as a "species in need of management" statewide.

### **Swift Fox**

The swift fox was extirpated in Montana and the northern Great Plains by the late 1930s. Reintroduction efforts initiated in 1983 in southern Canada have been successful and swift fox populations have established within the planning area. Populations of this fox are increasing and recent surveys estimate the northern Great Plains population to be over 1,000, with about 500 occurring in the planning area on open shortgrass and mixed-grass prairie (Moehrenschrager and Moehrenschrager 2006). The swift fox was removed from the USFWS candidate species list in 2001.

Current management is limited to the application of standards and guidelines (BLM 1997a) for maintaining and improving habitat. Habitat management opportunities could include options for reducing fragmentation to maintain currently intact priority grasslands, limiting the spread of invasive and exotic plants, reducing direct mortalities, and reducing disturbances at den sites.

### **Sensitive Species – Birds**

A majority of the 34 BLM sensitive bird species (see Table 3.58) are associated with the extensive grassland and sage habitats of the planning area. This area is highly important to these species because of large and relatively intact tracts of land allowing for robust bird populations in contrast to the rest of their breeding range, which is much more fragmented and where populations appear to be declining. See the Wildlife Habitat section above for a broader discussion on grassland and sagebrush habitats in the planning area.

The following discussion represents a few key species and species groups in the planning area.

### **Grassland Birds**

The planning area provides habitat for a suite of sensitive bird species associated with grassland habitats. These species include willet, long-billed curlew, marbled godwit, Wilson's phalarope, Sprague's pipit, dickcissel, Brewer's sparrow, Baird's sparrow, Le Conte's sparrow, Nelson's sharp-tailed sparrow, McCown's longspur, and chestnut-collared longspur. This suite of species has exhibited a steep decline in numbers throughout their range (Knopf 1994) related to the changes in the Great Plains as noted in the Wildlife Habitat section above.

In addition to being special status species, Sprague's pipits have been petitioned for listing as threatened under the Endangered Species Act in the United States. The USFWS determined that the petition presented substantial information indicating that listing Sprague's pipit may be warranted and initiated a status review in December 2009 (USFWS 2009). Baird's sparrow is a former USFWS Category 2 candidate for review for possible addition to the

threatened and endangered species list (USFWS 1991) until Category 2 list was discontinued (USFWS 1996). Both species are associated with relatively dense grass patches in large, intact grassland areas.

Large blocks of remaining native grasslands provide some of the best remaining habitat in the world for this group of birds. The number of grassland and shrub grassland bird species currently breeding in the planning area is probably quite similar to that of prehistoric times, but their relative and overall abundance may be quite different. This suite of species occupies a range of environmental conditions in grassland habitats, primarily related to grass height and density, and the relative abundance of these species is determined by the frequency and extent of disturbance factors in grassland systems such as grazing, fire, and weather events. Grazing intensity and fire frequency were probably greater and the abundance of species that respond to shorter vegetation structure may have been greater in prehistoric times. See the Wildlife Habitat section above for a greater discussion on grassland habitats.

Recent studies have demonstrated that these declining species are some of the most common birds across the northern part of the planning area, and the planning area supports healthy populations of the entire suite of grassland associated species, ranging from short grass associated species such as the McCown's longspur to species associated with taller, denser grass such as Sprague's pipit and Baird's sparrow (Hendricks, et al. 2007, 2008). Grasslands in northern Valley County have been identified as a Globally Important Bird Area (Audubon 2007) because of the density and number of grassland bird sensitive species, and the remaining grasslands in the planning area are highly important for these species (Hendricks, et al. 2007, 2008).

Impacts to grassland birds on BLM lands include habitat loss and fragmentation from disturbances related to energy exploration, development and production (primarily oil, gas, and wind), and roads.

Current grazing management on many allotments, which have stocking rates and pasture sizes that promote a range of vegetative structures across the landscape, appear to support large populations of a wide range of grassland bird species. Future management should preserve a variation in vegetative structure in large blocks of native grasslands, minimize fragmentation of the remaining large blocks of habitat, and control the spread of noxious weeds. The management challenge associated with grassland birds is to maintain a dynamic grassland that provides specific habitats for a wide range of grassland species and to avoid management actions for one species which might be detrimental to other special status species.

### Greater Sage-Grouse

The Greater Sage-Grouse is an important game bird in Montana. They are primarily associated with the big and silver sagebrush communities in grassland-shrub and shrub vegetation types (Figure 3.22). Greater Sage-Grouse prefer sagebrush for nesting cover throughout their range, probably because of the concealment sagebrush provides, and nest success has been positively correlated with cover. Lek areas are key activity areas for populations and are most often located in open areas surrounded by sagebrush cover.

Most populations of Greater Sage-Grouse have declined during the past 50 years (Connelly, et al. 2004). Population declines throughout their range are largely attributed to the loss and degradation of sagebrush habitats. Changes in land use and land development are the primary causes of habitat loss. Habitat degradation is a complicated interaction among many factors, including drought, grazing management, changes in natural fire regimes, and the invasion of invasive exotic plant species (Connelly, et al. 2004).

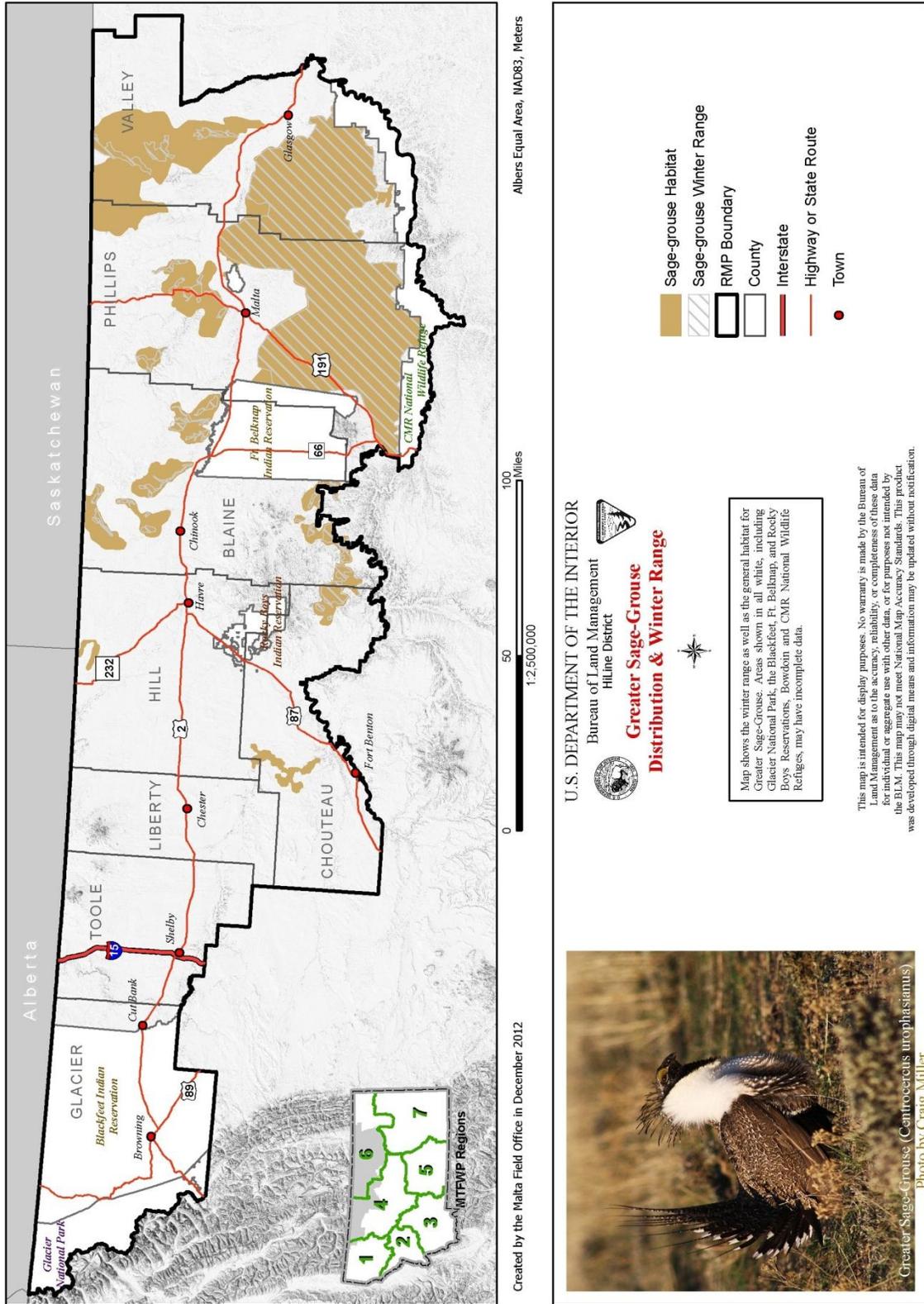
The Northern Montana Population is predominantly in northeast Montana but extends north into southern Saskatchewan and Alberta, making up these provinces' entire sage-grouse populations.

#### Grassland Bird/Greater Sage-Grouse Priority Habitat Management Areas

Areas containing substantial and high quality grasslands that support large populations of a suite of special status grassland bird species. This suite of species includes the following species of concern: Sprague's pipit, chestnut-collared longspur, McCown's longspur, Baird's sparrow, and long-billed curlew. Management actions would emphasize the conservation and enhancement of sustainable grassland bird habitats. Areas are delineated by using survey results, predictive models of species distributions, and land ownership patterns.

These areas also include core area for Greater Sage-Grouse identified by MFWP. Sage-grouse core areas are habitats associated with 1) Montana's highest densities of sage-grouse, based on male counts and/or 2) sage-grouse lek complexes and associated habitat important to sage-grouse distribution.

**Figure 3.22**  
**Greater Sage-Grouse Distribution and Winter Range**



Garton, et al. (2011) reported a minimum male count for this population at over 2,700 males and projected a very low probability (i.e., two percent) of the population dipping below 200 males in the next 100 years. The last six years showed a continuous decline to reach abundances as low as those in the 1970s and early 1980s of approximately 1,600 males. Current estimates are about 40% lower than the average counts shown from 1984-2007, which showed a slight increase in abundance males over the preceding 10 years. Model weighted probabilities of declining below effective population sizes of 50 (5.6%) in 30 and 100 years (7.2%) are all still quite low (Garton, et al. 2015). The southern portion of this area, south of the Milk River, has a high abundance of sage-grouse, has been designated as a Priority Area for Conservation (PAC), and is predominately comprised of public land. Land use in this area is livestock grazing with limited dryland farming and irrigated hay production adjacent to creeks and rivers. In general, habitat in this PAC is expansive and intact and faces few if any significant threats, particularly on public lands. Grouse in this PAC make up the majority of birds in this population. North of the Milk River, habitats comprise a relatively low density of silver sagebrush and a correspondingly low density of sage-grouse. The sage-grouse habitats in this area include more private lands and, in some portions of this area, have a long history of grain farming and low to moderate densities of natural gas production. A PAC was designated in northern Valley County where relatively intact habitats provide for resident grouse as well as a conduit for spring and fall migrating sage-grouse between Saskatchewan and southern Valley County. This PAC is adjacent to considerable farming to the east but is itself relatively stable and lacks significant threats. One or more large conservation easements are in place to protect habitat values on key private lands in northern Valley County. Given the extent and limited threats associated with this population, it is considered to be at low risk (USFWS 2013).

Greater Sage-Grouse are distributed throughout the eastern portion of the planning area. There are 286 known leks in the planning area, 147 of which are located on BLM lands. Valley and Phillips Counties have the highest densities of leks occurring in larger tracts of sagebrush shrublands. Within the planning area are 3,015,125 acres of Greater Sage-Grouse. Of this, 1,579,437 acres are on BLM surface and 1,865,792 acres are on BLM oil and gas estate.

The BLM and MFWP have surveyed and monitored Greater Sage-Grouse leks annually since the 1950s. Male attendance on leks is utilized by MFWP to provide an index of relative change in population abundance. Increased survey efforts have located additional leks in the planning area. The number of males observed per lek has remained relatively steady with a peak in the mid-1960s, although this may be an artifact of the number of leks surveyed and actual changes may be less pronounced. Survey efforts varied by year and numbers prior to 1998 are based on less than 20 leks.

The 2012 MFWP counts for the eastern Montana Sage-Grouse Management Zone are only 64.9% of the long-term average. Across Montana, sage-grouse numbers have declined by more than half since 1980 (MFWP 2012b). Hunter harvest estimates have declined even further, dropping from 40,000 birds in 1984 to less than 5,000 in 2011 (MFWP 2012b). This represents an 87.5% decline in hunter harvest across the state.

Habitats in the western and northern portions of the planning area are fragmented by changes in habitat type and land use practices. Large, contiguous blocks of sagebrush and grassland in the western portion of the planning area have for the most part been eliminated. Occupied habitat is fairly contiguous throughout much of southern Valley, Phillips, and Blaine Counties. Sage-grouse populations in the planning area are thought to be non-migratory; however, recent studies have confirmed some movement from populations in the northern part of the planning area and Canada into areas south of the Milk River (Tack 2009). Sage-grouse occurring north of the Milk River in predominantly silver sagebrush habitats remain at lower densities than sage-grouse south of the Milk River. Many areas north of the Milk River have also experienced a reduction of sage-grouse from historic distributions, including areas south of the Alberta and Saskatchewan boundaries. Some of these areas may still facilitate dispersal into or exchanges with Canadian populations, although it is likely that such movements have been greatly reduced (Bush, et al. 2010). Small subpopulations in this region may be dependent on connectivity with larger core populations.

Greater Sage-Grouse have been known to travel 120 km one-way from northcentral Montana, USA, and Saskatchewan, Canada, to wintering grounds north of the Missouri River (Tack, et al. 2011). Five years of tracking this population confirms that their migration is an obligate event that occurs annually regardless of winter severity (Smith 2013).

Sage-grouse habitat south of the Milk River is dominated by Wyoming big sagebrush with silver sagebrush in riparian areas. Sage-grouse habitat in the South Valley/Phillips area is in generally good condition primarily due to maintaining large tracts of big sagebrush habitat. Livestock ranching is the predominant land use in this area, which has conserved

large blocks of native sagebrush grassland habitat on private and public lands. The 20-year trend for male lek attendance is slightly increasing in the South Valley/Phillips area.

The BLM HiLine District is conducting habitat inventories and evaluation studies of sagebrush habitat near Greater Sage-Grouse leks to evaluate habitat as well as determine localized standards for Greater Sage-Grouse habitat condition assessments. The BLM has also co-sponsored a number of research projects related to Greater Sage-Grouse in southern Phillips and northern Valley Counties. Specific wintering concentration areas of Greater Sage-Grouse within the planning area are not well documented to date.

Several petitions to list Greater Sage-Grouse as threatened were submitted to USFWS in 2002. In January 2005, the USFWS determined that listing under the ESA was not warranted, but recent court actions have instructed the USFWS to reconsider that decision. Sage-grouse conservation is a priority for the BLM, and emphasis has been placed on planning efforts throughout their range in North America and in Montana. On March 5, 2010, the USFWS announced that the Greater Sage-Grouse was warranted for listing under the ESA but precluded by other higher priority species. The USFWS will evaluate this decision on a yearly basis to determine if conditions leading to this decision have changed enough to adjust the priority for listing.

**Greater Sage-Grouse  
Priority Habitat Management Areas**

Areas with limited impacts containing substantial and high quality greater sage-grouse habitat that supports high density greater sage-grouse populations. Management actions would emphasize the conservation and enhancement of sustainable greater sage-grouse habitat. The area is delineated by using “key,” “core” and connectivity data/maps, land ownership patterns, and other resource information.

In 2000, the Montana Sage-Grouse Working Group was formed to develop a statewide, multi-agency strategy for the conservation of the Greater Sage-Grouse. This group prepared the Management Plan and Conservation Strategies for Sage-Grouse in Montana – Final (MSGWG 2005) to provide for coordinated management and direction across the state. In 2004, local Greater Sage-Grouse working groups were formed to develop and implement local conservation plans. The only working group in the planning area is located in Glasgow and the BLM participates with this group. The area covered by this group includes much of the BLM land in Phillips and Valley Counties.

In February 2013, Montana Governor Bullock established the Greater Sage-grouse Habitat Conservation Advisory Council with the stated purpose “to gather information, furnish advice, and provide to the Governor recommendations on policies and actions for a state-wide strategy to preclude the need to list the Greater Sage-grouse under the ESA, by no later than January 31, 2014.” The Council is co-chaired by the MFWP Director and the Governor’s Natural Resources Policy Advisor. Council members include representatives from agriculture and ranching, conservation and sportsmen, energy, mining and power transmission, tribal government, local government, and the legislature.

Impacts to Greater Sage-Grouse include sage habitat fragmentation, disturbances related to energy (oil and gas, and wind) exploration, development and production, overhead powerlines, and pathogens (West Nile virus). The West Nile virus was confirmed in sage-grouse mortalities in south Phillips County in August 2003. In February 2013 the Conservation Objectives Team (COT) comprised of State and U.S. Fish and Wildlife Service representatives produced a report that includes an overview of the threats to sage-grouse and sagebrush habitats across their range. Appendix M.3 provides a summary of the threats identified in the COT report that are present in the planning area. Current management of Greater Sage-Grouse focuses primarily on protection of Greater Sage-Grouse leks and habitats surrounding leks through seasonal and spatial stipulations for surface-disturbing activities. Management opportunities include protecting large blocks of existing habitat from further loss and fragmentation, reducing the disturbance from surface-disturbing activities, and controlling invasive and exotic plants.

**Greater Sage-Grouse Management Zone 1**

The range of the Greater Sage-Grouse in North America has been divided into seven sage-grouse management zones based on populations within floristic provinces (Stiver, et. al. 2006). The floristic provinces are areas within which similar environmental factors influence vegetation communities (Knick and Connelly 2011). Management Zone 1 (MZ1) includes southwestern Saskatchewan, southeastern Alberta, central and eastern Montana, northeastern Wyoming, southwestern North Dakota, and northwestern South Dakota. Greater Sage-Grouse habitats in MZ1 were historically a function of the interaction of physical factors (e.g., climate, soils, geology, and elevation), and natural disturbance factors (e.g., fire, grazing, drought) that allowed sagebrush to persist on the landscape. These physical and natural factors

combined to produce an interspersed and juxtaposition of different habitats that included large expanses of sagebrush patches favorable for Greater Sage-Grouse occupation.

The sagebrush species associated with Greater Sage-Grouse habitat in MZ1 is primarily Wyoming big sagebrush. Other shrubs present may include silver sagebrush, greasewood, saltbush, rubber rabbitbrush, green rabbitbrush, and overall shrub cover is less than 10% (Montana Field Guide 2011).

Perennial herbaceous components typically contribute greater than 25% vegetative cover and consist mostly of rhizomatous and bunch-form grasses, with a diversity of perennial forbs (Montana Field Guide 2011). The dominant grass in this system is western wheatgrass and sites may include other species such as Indian ricegrass, blue grama, Sandberg's bluegrass, or bluebunch wheatgrass (Montana Field Guide 2011). Dryland sedges such as threadleaf sedge and needleleaf sedge are very common and important in the eastern distribution of this system in Montana and Wyoming (Montana Field Guide 2011). Common forbs include Hood's phlox, sandwort, prickly pear, scarlet globemallow, purple prairie clover, dotted gayfeather, and milkvetch (Montana Field Guide 2011).

Big sagebrush is easily killed by fire at all intensities, and when exposed to fire, plants do not resprout (Wright et al. 1979). In southwestern Montana, Wambolt and others (2001) found that fire in big sagebrush is stand replacing, killing or removing most of the aboveground vegetation, and that recovery to pre-burn cover (of sagebrush) takes 50 to 120 or more years (Baker 2006). In Montana, Wyoming big sagebrush may require a century or longer to recover from fire (Lesica, et al. 2005). Big sagebrush occurs on level to gently rolling plains, plateaus, sideslopes and toeslopes, and as small and large patches in dissected landscapes such as breaks (Montana Field Guide 2011).

Silver sagebrush is fairly resistant to fire and will resprout vigorously following a fire event (Aldridge and Brigham 2002). White and Currie (1983) stated that burning of silver sagebrush under favorable spring moisture conditions resulted in low plants kill rates and vigorous sprouting with brush cover returning to original, preburn conditions quickly.

Land ownership throughout MZ1 is predominantly private (70%). However, ownership of the remaining range of the Greater Sage-Grouse in MZ1 is 61% private and 13% state or other federal ownership (not including the Fort Peck and Fort Belknap Indian Reservations), with 26% on BLM-managed lands.



Greater Sage-Grouse

Photo by Craig Miller

Greater Sage-Grouse populations have declined in portions of MZ1 through wholesale loss of habitat as well as through impacts to birds on the remaining habitat through disturbance and direct mortality. Management Zone 1 contains four sage-grouse populations (Garton, et al. 2011), including the Dakotas, Northern Montana, Powder River Basin, and Yellowstone Watershed populations. Sage-grouse populations within MZ1 declined by two-thirds in the last six years with the entire management zone most likely declining below effective population sizes of both 50 and 500 within 30 years and with 90% certainty within 100 years (Garton, et al. 2015). Individual populations all declined more than 50% in the last six years with both the Dakotas and Powder River Basin declining more than 70% raising a concern that they may be dropping into an extinction vortex. Even the largest population within the Yellowstone watershed fell by two-thirds with parametric bootstraps implying that every population except Northern Montana is virtually certain to go extinct (96% to 100% probabilities) unless recent patterns of decline change (Garton, et al. 2015).

The most pervasive and extensive change to the sagebrush ecosystems in MZ1 is the conversion of nearly 60% of native habitats to agriculture (Samson, et al. 2004). The conversion was facilitated by the Homestead Act of 1862 in the United States and the Canada Dominion Act of 1872 (Knick 2011). Under the Homestead Act, nearly 1.5 million people acquired and plowed over 309,000 sq. mi. (800,000 km<sup>2</sup>) of land, primarily in the Great Plains (Samson, et al. 2004). The impacts of land conversion in the late 1800s and early 1900s were probably greatest for sagebrush habitats nearest perennial water sources in MZ1.

Currently, native vegetation covers about 59% of the management zone, with approximately 25% of the remaining native vegetation managed by the BLM. Much of the direct habitat loss from conversion to agriculture has occurred primarily in the far northwestern and northeastern portions of the management zone (Knick, et al. 2011). Cropland currently cover nearly 19% of the MZ and 91% of the MZ is within 6.9 km of cropland (Knick, et al. 2011).

Recent interest in biofuel production and high prices for small grains has resulted in an increase in the conversion of native grasslands or lands formerly enrolled in the Conservation Reserve Program (CRP) to cropland, further emphasizing the importance of BLM lands and associated private lands managed for grazing to maintain large blocks of native grassland and shrubland habitats.

Greater Sage-Grouse are a landscape-scale species, requiring large expanses of sagebrush to meet all seasonal habitat requirements. The loss of habitat from fragmentation and conversion decreases the connectivity between seasonal habitats potentially resulting in the loss of the population (Doherty, et al. 2008). Converting native grasslands to agricultural lands not only resulted in a direct loss of habitats for native wildlife, it began a process of habitat fragmentation. Habitat loss is exacerbated when fragmentation reduces the size and/or isolates remaining habitat patches below the size thresholds necessary to support components of biological diversity or blocks the movement of animals between habitat patches. As large contiguous blocks of habitat are dissected into smaller blocks, they became more isolated from one another by dissimilar habitats and land uses.

Changes in vegetation can also result in the loss and fragmentation of native habitats. The conversion of large acreages of sagebrush to predominately grassland communities results in the direct loss of sagebrush habitat and can also fragment remaining habitat for sagebrush-dependent species, such as the Greater Sage-Grouse. Roads and OHV use can promote the spread of noxious weeds through vehicular traffic and noxious weed infestations can further exacerbate the fragmentation effects of roadways. Irrigation water has also supported the conversion of native plant communities to hayfields, pasture, and cropland, thereby fragmenting sagebrush habitats. Excessive grazing can result in the demise of the most common perennial grasses in this system and lead to an abundance cheatgrass or Japanese brome (Montana Field Guide 2011).

The remaining sagebrush habitats in MZ1 are mostly managed as grazing lands for domestic livestock. Domestic livestock function similarly to the native keystone species bison in the MZ through grazing and management actions related to grazing by serving as the predominant large herbivore in the ecosystem. These actions do not preclude wildlife and vegetation, but they do influence ecological pathways and species persistence (Bock, et al. 1993). The effects of grazing on sagebrush habitats in this management zone are much different than effects noted in the Great Basin since the landscape throughout MZ1 is adapted to withstand grazing disturbance (Knick, et al. 2011).

Historically large numbers of bison (*Bos bison*) moved nomadically through the MZ in response to changes in vegetation associated with drought, past grazing, and fire. Grazing by bison occurred in large areas as huge herds moved through, and the impacts of these herds on the vegetation, soils, and riparian areas were probably extensive. The interval between

grazing episodes may have ranged from one to eight years (Malainey and Sherriff 1996). Bison were replaced with domestic livestock in the late 1800s.

The intensity and duration of grazing in the MZ increased as domestic livestock numbers and annual grazing pressure increased. Grazing on public lands was unregulated until the passage of the Taylor Grazing Act in 1934. Since the passage of the Taylor Grazing Act, range conditions have improved due to improved grazing management practices and livestock operations related to decreased livestock numbers and the annual duration of grazing. In addition, the BLM has applied Standards for Rangeland Health since 1997 to enhance sustainable livestock grazing and wildlife habitat while protecting watersheds and riparian ecosystems. However, developments to facilitate grazing management often include elements detrimental to sage-grouse. Perhaps the most pervasive change associated with grazing management in sage-grouse habitats throughout the MZ is the construction of fencing and water developments (Knick, et al. 2011). Barbed wire fences contribute to direct mortality of sage-grouse through fence collisions (Stevens 2011) and water developments may contribute to increased occurrence of West Nile Virus in Greater Sage-Grouse (Walker and Naugle 2011). Water developments are particularly prevalent in the northcentral portion of the MZ. Additional habitat modifications associated with grazing management include mechanical and chemical treatments to increase grass production, often by removing sagebrush (Knick, et al. 2011).

Other major land uses in the MZ include energy development (primarily oil and gas development) and infrastructure. Oil and gas development in the MZ has occurred throughout the MZ but is concentrated in the southern portions (Powder River Basin) the north (Bowdoin Field) and the south and east (Williston Basin). Oil and gas development includes direct loss of habitat from well pad and road construction as well as indirect disturbance effects from increased noise and vehicle traffic. Oil and gas developments directly impact Greater Sage-Grouse through avoidance of infrastructure, or when development affects survival or reproductive success. Indirect effects include changes to habitat quality, predator communities, or disease dynamics (Naugle, et al. 2011a). Predation is one of five specific ESA listing criteria; however, the USFWS did not identify predation as a significant threat to sage-grouse populations in their 2010 decision to list the species as warranted for protection under the Endangered Species Act. Despite the USFWS stating that predation is not a significant threat to sage-grouse populations in Montana, the public remains concerned about the influence of predators on sage-grouse conservation.

Currently nearly 16% of the MZ is within 3km of oil and gas wells, a distance where ecological effect is likely to occur (Knick, et al. 2011).

Infrastructure development in MZ1 has also impacted Greater Sage-Grouse habitat. Roads, fences, and utility corridors have also contributed to habitat loss and fragmentation in portions of the MZ. Infrastructure development effects to Greater Sage-Grouse habitats in MZ1 are primarily related to highways, roads, powerlines and communication towers, with nearly 92% of the MZ within 6.9km of a road, 32% within 6.9km of a powerline and 4% within 6.9km of a communication tower (Knick, et al. 2011).

The cumulative and interactive impact of multiple disturbances and habitat loss has influence the current distribution of Greater Sage-Grouse in MZ1. The cumulative extent of human caused changes, the human footprint, on sage-grouse habitat in MZ one is highest at the northern edge of the MZ but occurs throughout the MZ (Leu and Hanser 2011). Population centers for Greater Sage-Grouse in MZ1 (Doherty, et al. 2011) generally correspond to areas lacking a high human footprint and some of these areas have been designated as core areas by Montana Fish, Wildlife, and Parks (MFWP 2010). Map 2.18 shows the relationship of the MFWP core areas to general habitat and the Greater Sage-Grouse and grassland bird priority areas as proposed in Alternative E (Preferred Alternative). Greater Sage-Grouse range in MZ1 is overall very similar to portions of the range where sage-grouse have been extirpated, i.e. areas with high human footprints, mostly because of the abundance and distribution of sagebrush in the MZ (Wisdom, et al. 2011) suggesting that sage-grouse in MZ1 are more vulnerable to declines than other portions of the sage-grouse range.

### **Mountain Plover**

The mountain plover is a migratory species of the shortgrass prairie and shrub-grassland ecoregions of the arid West. The planning area provides a high proportion of their breeding habitat in Montana, and is of global importance for the continued existence of this species. The number of mountain plovers is thought to be about 1,028 individuals in southern Phillips and Valley Counties (Childers and Dinsmore 2008). More individuals may be found in the rest of the planning area but the number is not known. Breeding habitat for the mountain plover is characterized by short vegetation, bare

ground, and flat topography common to prairie dog towns, open plains, and bentonite flats. Unlike other plovers, mountain plovers are rarely associated with water.

Mountain plovers migrate into the planning area in late April to breed and typically leave by early September. Mountain plovers on BLM land in Phillips and Blaine Counties are often associated with black-tailed prairie dog towns (see Wildlife Habitat section above); while in Valley County they are found in hardpan locations around Little Beaver Creek. The Little Beaver Creek area is considered a Globally Important Bird Area because of the numbers of mountain plovers breeding there (Audubon 2007). The mountain plover was proposed for listing as threatened, but was removed from consideration for listing in 2003. However, concern for this species remains high.



Mountain Plover

Photo by John Carlson

Current mountain plover management is closely related to black-tailed prairie dog management in much of the planning area because of the close association of plovers and the low structure habitat created by prairie dogs. The Mountain Plover ACEC was established in 2003 in south Valley County to protect habitat associated with bentonitic soils in the area. Management opportunities for mountain plovers include habitat enhancement in areas away from prairie dog towns, other types of vegetative treatments, seasonal limitations on road maintenance in mountain plover habitat, minimizing disturbances during critical time periods, control of noxious and invasive plants, and maintenance of large blocks of habitat where plovers occur.

## Raptors

Six raptor sensitive species breed in the planning area on BLM lands. Four raptor species, Swainson's hawk, ferruginous hawk, golden eagle, and burrowing owl, breed in grassland and sagebrush-grassland habitats, while the Northern goshawk and bald eagle require forested areas.

The bald eagle occurs year-round in Montana and has made significant gains in breeding numbers throughout its range. Historical and active nest sites occur across the planning area along the Missouri and Milk rivers. A number of pairs also nest in the forested western portion of the planning area, but not on BLM lands. Bald eagle nests are increasing in the planning area as the population in Montana continues to expand eastward. The planning area is also heavily used during spring and fall migration by eagles that winter to the south and breed in the boreal forests of Canada. They are often present near open water during winters.

Bald eagles were recently removed from the threatened and endangered list. However, bald eagles remain protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), enacted in 1940, with amendments. This act protects bald eagles and similar looking Golden Eagles from take without a permit. Current management focuses on seasonal and spatial limits on surface-disturbing activities around raptor nests which vary somewhat, depending on which species is addressed. Important roost areas and other seasonal use areas may also be protected with similar management actions.

## Sensitive Species – Amphibians and Reptiles

Four amphibian species and five reptile species are listed as Montana BLM sensitive species in the planning area (see Table 3.58). A few key species in the planning area are described below.

Northern leopard frog populations have been extirpated in all known sites west of the Continental Divide in Montana, prompting their listing as a BLM sensitive species. Populations in the planning area still appear to be healthy, but there

is concern that the unknown factors that caused the extinction of the species west of the divide may begin to affect populations in the planning area.

Spiny softshell turtles inhabit large rivers with adequate areas of slack water and sand bars. These turtles lay their eggs in sandy soil or sand and gravel bars near water and impacts to the nesting habitat include invasive and exotic vegetation, livestock concentrations, and changes in water flow patterns due to dams and water diversions. Recent interest has been shown in the spiny softshell turtle on the Upper Missouri and Marias Rivers because this population is a disjunctive population, separate from spiny softshell turtles on the Yellowstone and Lower Missouri rivers.

The Western hognose snake inhabits well-drained, sandy soils in the planning area and specializes in feeding on salamanders, frogs, and especially toads. This species is seldom seen or can be easily overlooked and there are few recent records showing where they probably occur in the planning area in greater numbers than have been recorded in the past. They appear to be declining in other portions of their range.

No current management actions are directed at specific reptile or amphibian species in the planning area, but management actions directed at improving broad-scale habitat conditions through standards and guidelines (BLM 1997a) are expected to maintain and improve habitat.

Management opportunities include increased surveys to determine presence and habitat associations for sensitive species reptiles and amphibians in the planning area, and minimizing impacts to known habitats caused by invasive and exotic species, decreased water quality, and disease. Improvements to specific habitats important to some species may also be considered.

## Threatened and Endangered Species

### Threatened and Endangered Species – Mammals

Three mammal species, listed as threatened or endangered under the Endangered Species Act, are presently known to occur in the planning area (see Table 3.59):

- black-footed ferret – (Endangered and Experimental)
- Canada lynx – (Threatened)
- grizzly bear – (Threatened)

The black-footed ferret was listed as endangered on March 11, 1967, and is now considered the rarest mammal in North America. The historic range of the ferret in Montana corresponds to the range of the black-tailed prairie dog (*Cynomys ludovicianus*), and the presence of black-footed ferrets is highly dependent on the size and extent of areas occupied by prairie dogs. Historical records exist of black-footed ferrets in the planning area.

The black-footed ferret was thought extinct by 1980, but was rediscovered at Meeteetsee, Wyoming, in September 1981. A successful black-footed ferret captive breeding program has provided animals for reintroductions throughout their former range, including prairie dog towns in south Phillips County. Black-footed ferrets were reintroduced into south Phillips County in 1994, on the Charles M. Russell National Wildlife Refuge as an experimental population. Reintroductions began on BLM land in 2001 and continued through 2005. However, viable self-sustaining populations of black-footed ferrets have not become established, likely due to the presence of plague affecting the overall size of the prairie dog prey base and the ferrets themselves. BLM participation in reintroduction efforts has declined in recent years as reintroduction efforts have not succeeded. No reintroduction efforts have taken place in the area since 2005.

BLM management opportunities will focus on maintenance and enhancement of the prairie dog habitat in the planning area, primarily through the MFWP Region 6 Prairie Dog Abundance and Distribution Objectives Plan (MFWP 2006a). As alternative or improved reintroduction techniques are developed, maintenance of habitat in the planning area may enable those efforts to proceed.

No potential Canada lynx habitat has been identified on BLM land in the planning area. Some parcels of BLM land are adjacent to Canada lynx habitat on U.S. Forest Service land, but the primary forest cover on these BLM parcels (ponderosa pine and dry Douglas-fir) is not considered lynx habitat.

Grizzly bears occur only on the western periphery of the planning area and entirely within Glacier National Park and the Blackfeet Reservation. They were formerly abundant throughout the planning area, but were exterminated from the eastern plains by 1900. Current populations appear healthy in the portions of the planning area adjacent to Glacier National Park and the Blackfeet Indian Reservation.

The Canada lynx and grizzly bear may occur on a very limited or sporadic basis within the planning area, but are not known to occur on BLM lands.

<b>Table 3.59 Threatened, Endangered, and Candidate Species in the HiLine Planning Area</b>				
<i>Common Name</i>	<i>Scientific Name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Species Status</i>
<b>Mammals</b>				
Black-footed Ferret	<i>Mustela nigripes</i>	G1	S1	Listed Endangered and Experimental non-essential (portions of Phillips County)
Canada Lynx	<i>Lynx canadensis</i>	G5	S3	Listed Threatened
Grizzly Bear	<i>Ursus arctos horribilis</i>	G4	S3	Listed Threatened
<b>Birds</b>				
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	G3/G4	S2	Candidate Listing Priority Number 8
Interior Least Tern	<i>Sterna antillarum</i>	G4T2 Q	S1B	Listed Endangered
Piping Plover	<i>Charadrius melodus</i>	G3	S2B	Listed Threatened
Red Knot	<i>Calidris canutus</i>	G4	SNA	Listed Threatened
Sprague’s Pipit	<i>Anthus spragueii</i>	G4	S3B	Candidate Listing Priority Number 8
Whooping Crane	<i>Grus americana</i>	G1	S1M	Listed Endangered

If any of these species are added to the T&E list in the future, or are found to occur more regularly on BLM lands in the planning area, management actions will be developed to conserve, enhance and protect the species and their habitat in accordance with the Endangered Species Act.

**Threatened and Endangered Species – Birds**

Four bird species listed as threatened or endangered under the Endangered Species Act (Table 3.59) are known to occur in the planning area:

- interior least tern (endangered)
- piping plover (threatened)
- red knot (threatened)
- whooping crane (endangered)

The interior least tern occurs on a very limited or sporadic basis, and the potential for breeding on BLM lands in the planning area is low, although breeding is known to occur on Fort Peck Reservoir. The interior least tern has been observed at Whitewater Lake and Nelson Reservoir, but is not known to breed or occur there on a regular basis. They nest primarily on barren to sparsely vegetated riverine sandbars, dike field sandbar islands, sand and gravel pits, and lake and reservoir shorelines from late April to August. Threats to the survival of the species include the actual and functional loss of riverine sandbar habitat. Recovery actions to protect and restore interior least tern populations are outlined in the 1990 Recovery Plan (USFWS 1990), and the 2006 Montana Interior Least Tern Management Plan (MFWP 2006b).

The piping plover was listed as threatened in 1986. Piping plovers breed on barren sand and gravel beaches in the planning area, and low water levels expose appropriate shoreline breeding and nesting habitat. Nesting success is often dependent on subsequent water level fluctuations and flooding is often a major source of nest mortality. Piping plovers are known to occur on Fort Peck Lake, Dry Lake and Lakeside units of the Bowdoin National Wildlife Refuge, Whitewater Lake, and Nelson Reservoir. Water levels at Fort Peck Reservoir are regulated for navigation and recreation, and those at Nelson Reservoir for irrigation purposes. In 2002, portions of the Bowdoin National Wildlife Refuge and Fort Peck Lake were designated as critical habitat for the piping plover. A portion of Nelson Reservoir was also proposed as critical habitat, but not designated due to current conservation agreements with the Bureau of Reclamation.

Recovery actions to protect and restore piping plover populations are outlined in the 1988 Recovery Plan (USFWS 1988b) and the 2006 Montana Piping Plover Management Plan (MFWP 2006b). Nelson Reservoir is the only breeding habitat managed by the BLM (which manages the subsurface) in the planning area, and current management for piping plovers is focused on minimizing disturbances to breeding birds from surface-disturbing activities tied to mineral leasing through timing and spatial stipulations. Management opportunities include habitat creation in areas where disturbances may be less or modifying disturbances to minimize impacts to breeding birds.



Piping Plover Shading a Nest

Photo by Fritz Prellwitz

The red knot was listed as a Candidate Species in 2006. The USFWS determined on December 11, 2013, that the red knot warranted a Threatened listing. The red knot has been observed rarely during migration in Phillips County at Bowdoin National Wildlife Refuge, Whitewater Lake, Nelson Reservoir; Valley County at Newton Pond; and in Liberty County at Lake Elwell. The most recent observation was in 2005 at Whitewater Lake. No nesting or breeding occurs in the HiLine planning area.

The whooping crane was listed as endangered in 1970. No known whooping crane stopover, roosting, or nesting habitat occurs within the planning area, nor is the area within the whooping crane's principal migration corridor. However, migration of the Canadian population occasionally results in sightings in northeastern Montana, as noted with three sightings since 1990 in a small area southwest of the town of Whitewater in Phillips County. This wetland area habitat can be utilized by migrating whooping cranes, and management opportunities include maintaining or enhancing the wetland habitat for migratory stopovers.

### **Threatened and Endangered Species – Amphibians and Reptiles**

No amphibian or reptile species in the planning area are currently listed as threatened, endangered, or candidate species.