



United States Department of the Interior  
Bureau of Land Management

**FINAL**

Glasgow Field Station

December 2000



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# BITTER CREEK AND MOUNTAIN PLOVER AREAS OF CRITICAL ENVIRONMENTAL CONCERN PLAN AMENDMENT AND ENVIRONMENTAL ASSESSMENT



The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.

BLM/MT/PL-01/001

Bitter Creek  
Area of Critical Environmental Concern  
and  
Mountain Plover  
Area of Critical Environmental Concern

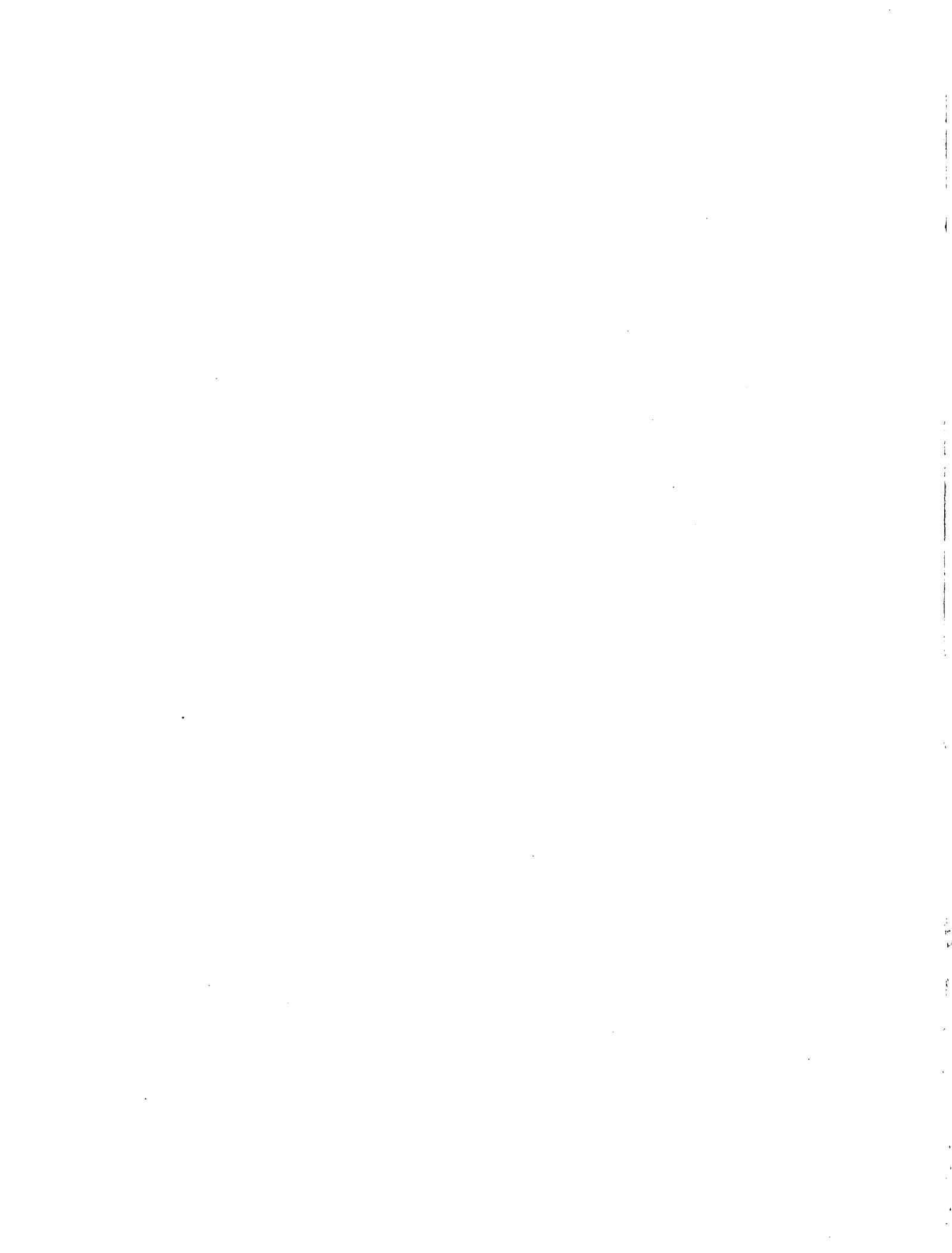
Resource Management Plan Amendment  
and  
Environmental Assessment

MT-096-99-04

prepared by

United States Department of the Interior  
Bureau of Land Management  
Glasgow Field Station  
Glasgow, Montana

December 2000



# **FINDING OF NO SIGNIFICANT IMPACT**

**for**

## **Bitter Creek Area of Critical Environmental Concern and Mountain Plover Area of Critical Environmental Concern**

**MT-096-99-04**

A complete analysis of the environmental impacts of designating two areas as Areas of Critical Environmental Concern is contained in the attached Environmental Assessment. This alternative (Alternative B - ACEC Designations) is described along with other alternatives.

Under this alternative, Bitter Creek would be designated an ACEC. If Congress adopted BLM's recommendation and released Bitter Creek from WSA status, a plan for management of the ACEC would be initiated within two years. Until an ACEC Management Plan is completed, the special management would be the same as the revised edition of the IMP existing in 1998. Also, the Mountain Plover area would be designated an ACEC. Management prescriptions would apply within the ACEC to protect the mountain plover during the nesting period from April 1 to July 31. The ACEC Management plan is detailed in the Environmental Assessment.

The implementation and operation of this alternative (Alternative B - ACEC Designations) will result in no significant impacts to the human environment; therefore, an environmental impact statement will not be prepared. The reasons for the Finding of No Significant Impact (FONSI) are summarized as follows:

1. No threatened or endangered species will be affected. The mountain plover, a candidate species, will be positively affected.
2. The native grasslands will be unchanged and retained.
3. The current permitted uses of the areas will be maintained.
4. No known cultural resources will be disturbed.

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Bruce W. Reed  
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Date



## CONTENTS

CHAPTER 1 PURPOSE AND NEED .....	1
INTRODUCTION .....	1
LOCATION OF THE PLANNING AREA .....	1
NEED FOR THE PLAN AMENDMENT .....	1
Bitter Creek .....	1
Mountain Plover .....	1
Special Management .....	2
PLANNING ISSUES AND CRITERIA .....	2
Bitter Creek .....	2
Mountain Plover .....	2
RELATIONSHIP TO STATUTES, REGULATIONS OR OTHER PLANS .....	3
CHAPTER 2 ALTERNATIVES .....	5
INTRODUCTION .....	5
MANAGEMENT COMMON TO ALL ALTERNATIVES .....	5
Bitter Creek .....	5
Mountain Plover .....	5
ALTERNATIVE A - CURRENT MANAGEMENT .....	6
Bitter Creek .....	6
Mountain Plover .....	7
ALTERNATIVE B - ACEC DESIGNATIONS (Preferred) .....	8
Bitter Creek .....	8
Mountain Plover .....	8
ALTERNATIVES CONSIDERED, BUT NOT ANALYZED IN DETAIL .....	9
Mixed Grass Prairie .....	9
Bitter Creek ACEC Management Plan .....	9
Boundaries of the 59,660 acre ACEC .....	9
Introduction of Wild Horses .....	9
Mountain Plover Habitat Enhancement .....	9
Mountain Plover Nest Protection .....	10
Mineral Withdrawal .....	10
No Leasing for Oil and Gas .....	10
SUMMARY OF ALTERNATIVES .....	11
CHAPTER 3 AFFECTED ENVIRONMENT .....	17
INTRODUCTION .....	17
BITTER CREEK .....	17
MOUNTAIN PLOVER .....	19
CHAPTER 4 ENVIRONMENTAL CONSEQUENCES .....	27
BITTER CREEK .....	27
Alternative A - Current Management .....	27
Alternative B - ACEC Designation (Preferred) .....	28
MOUNTAIN PLOVER .....	28
Alternative A - Current Management .....	28
Alternative B - ACEC Designation (Preferred) .....	30
CHAPTER 5 CONSULTATION AND COORDINATION .....	33
PUBLIC INVOLVEMENT .....	33
CONSISTENCY .....	33
DISTRIBUTION LIST .....	34
LIST OF PREPARERS .....	34
PUBLIC COMMENTS AND BLM RESPONSES .....	35
BIBLIOGRAPHY .....	43

## Tables

TABLE S.1: SUMMARY OF ALTERNATIVES .....	11
TABLE S.2: COMPARISON OF IMPACTS: BITTER CREEK and MOUNTAIN PLOVER .....	13
TABLE 5.1: PUBLIC INVOLVEMENT .....	33

## Figures

Location .....	4
Bitter Creek ACEC .....	15
Mountain Plover ACEC .....	16
Saltbush and Hardpan .....	24
Western Wheatgrass and Saltbush .....	24
Knotweed and Saltbush .....	25
Reclaimed Bentonite Mining Site .....	25

## Appendices

Appendix A: Area of Critical Environmental Concern .....	45
Appendix B: Mixed Grass Prairie Evaluation .....	47
Appendix C: Mountain Plover Oil and Gas Stipulation for Alternative A .....	85
Appendix D: Mountain Plover Oil and Gas Stipulation for Alternative B .....	87

# CHAPTER 1

## PURPOSE AND NEED

### INTRODUCTION

This plan amendment and environmental assessment (EA) addresses special management for two potential Areas of Critical Environmental Concern (ACEC); Bitter Creek and Mountain Plover. The BLM public lands being considered are located in Valley County, Montana. This plan would amend the Judith-Valley-Phillips Resource Management Plan (RMP).

An ACEC is an area where special management attention is required to protect important historic, cultural or scenic values, fish and wildlife resources or other natural systems, or to protect life and safety from natural hazards.

The Bitter Creek Wilderness Study Area (WSA) (59,660 acres) was found to meet the criteria as a potential ACEC due to the scenic diversity and variety of vegetation types and wildlife habitats. The Mountain Plover area (24,730 acres) provides natural habitat for the mountain plover, a prairie bird. It is an area of native plover habitat which is not associated with black-tailed prairie dog. Appendix A has an ACEC evaluation summary of both nominated areas.

### LOCATION OF THE PLANNING AREA

The Bitter Creek WSA, covering about 59,660 acres, is located in north Valley County, approximately 25 miles northwest of Glasgow, and 18 miles south of the Canadian border (see Figure 1).

The Mountain Plover area, covering about 24,730 acres, is located in south Valley County, approximately 20 miles west-southwest of Glasgow. The area includes the hardpan areas of the drainage ways in the Little Beaver Creek area (see Figure 1).

### NEED FOR THE PLAN AMENDMENT

#### Bitter Creek

In November 1990, the Bureau of Land Management (BLM) received the Mixed-Grass Prairie ACEC nomina-

tion from several organizations in Montana. The nomination encompasses approximately 350,000 acres of BLM public land in north Valley County. This area was nominated for its natural integrity, scenic values, vegetation and on the basis that it is one of the largest and most intact sections of prairie remaining in the United States and coupled with the Canadian Grasslands National Park, would provide an intact prairie corridor between the United States and Canada. (Montana Audubon Council, Sierra Club, Montana Wilderness Association, Montana Wildlands Coalition, National Wildlife Federation, Montana Wildlife Federation, The Wilderness Society, and Montana Chapter of the Sierra Club, 1990.)

In March 1998, the BLM completed an evaluation of this nomination to determine if it met both the relevance and importance criteria for consideration as a potential ACEC (see Appendix B). In summary, the entire nomination was found to be relevant in terms of the scenic, cultural, and wildlife resources. In addition, two areas of approximately 100,000 acres in size were found relevant from a natural process or systems perspective. However, only the Bitter Creek WSA (59,660 acres) was found to meet the importance criteria due to the scenic diversity and variety of vegetation types and wildlife habitats. The Bitter Creek WSA does qualify for further consideration as an ACEC.

#### Mountain Plover

In April 1989, the BLM received the Mountain Plover ACEC nomination from an individual. The area was nominated for the concentration of mountain plovers found off of prairie dog towns. In many areas, mountain plovers are found closely associated with black-tailed prairie dog towns.

In 1992, the BLM evaluated the Mountain Plover nomination and found it met both the relevance criteria and the importance criteria; and then recommended the area for further consideration as an ACEC (BLM, 1992). The *mountain plover is an unusual shorebird since it spends its entire life away from water. It is a bird of open flat land, avoids mountains, and seeks areas of low precipitation. Mountain plovers feed primarily on insects and can thrive without drinking free-standing water. Mountain plovers are very selective in choosing nest sites, preferring expansive, arid flats (under 5% slope) with very short vegetation (under 4 inches), and a high proportion of bare ground (a minimum of 30%).*

For this ACEC nomination the BLM will examine the measures that maintain nesting areas and ways to enhance the suitable remaining habitat. Potential limiting factors are adverse weather conditions, predation, human disturbances, and chemical insecticide spraying.

## **Special Management**

Before either of these areas can be designated an ACEC, the BLM must determine if they require special management. Alternatives for special management are considered through the plan amendment process.

## **PLANNING ISSUES AND CRITERIA**

The following issues and planning criteria will be used to formulate alternatives and guide selecting the preferred alternative.

### **Bitter Creek**

**Vehicle Travel:** Off-highway vehicle (OHV) travel has the potential to accelerate erosion and spread noxious weeds along with compromising the semi-primitive nonmotorized area. Special management could address the long term need for a limited OHV designation.

**Energy Mineral Resources:** There is a high occurrence and a moderate development potential for oil or gas. Oil and gas activities within this area may change the character of a semi-primitive nonmotorized area and adversely affect the scenic quality. Special management could address the long term decision for oil and gas leasing.

**Non-energy Mineral Resources:** There is a low occurrence and development potential for nonenergy minerals. Nonenergy mineral resource development may detract from the scenic resource and impact the semi-primitive nonmotorized area.

**Land Treatments:** Land treatments can be effective tools to enhance the native plant communities. Burning is favored over mechanical treatments as a natural method to improve ecological conditions. Mechanical treatments could impact the scenic values of the area.

**Vegetation Management:** Grazing occurs throughout the area. Grazing activities that existed prior to October 1976 (the passage of FLPMA) are grandfathered into the management of this area. This means existing management of ranching operations during 1976 are in effect today provided they are accomplished in the same manner and

degree in order to provide for a healthy ecosystem. Special management in this area could include continuing the promotion of the natural processes within this ecosystem.

**Noxious Plants:** To retain the naturalness of this area, noxious plants are managed by using the minimal impact tool to control the spread of noxious weeds, which consists of integrated pest management efforts.

**Riparian and Wetland Management of Watersheds:** Bitter Creek WSA is within the Willow North watershed. An assessment of riparian, wetland, and upland habitat conditions was completed in March 1999. Most streams and uplands in the WSA are meeting standards. The Willow North watershed plan includes recommendations for noxious weed control and for changes in grazing management to meet the standards. Range improvements constructed to meet healthy rangelands standards could impact scenic values. Special management could monitor the health of the streams to assure they are functioning units within the ecosystem.

### **Mountain Plover**

**Vehicle Travel:** Off-highway vehicle (OHV) travel may disturb nesting birds and/or destroy nests and chicks. Special management could include off-road restrictions and/or slower speeds on existing roads.

**Energy Mineral Resources:** There is a moderate occurrence and a moderate potential for oil or gas development. Oil and gas activities within occupied nesting habitat for mountain plovers may disturb nesting birds and chicks. Special management could include timing stipulations during drilling and production activities.

**Non-energy Mineral Resources:** There is a low potential for hardrock mineral development. There is a high occurrence and development potential for bentonite. Bentonite mining has occurred in the area. Nonenergy mineral resource development, such as bentonite mining, may disturb nests and chicks. Special management could include mitigation such as timing restrictions and road placement or closing the area to locating and/or leasing.

**Land Treatments:** Land treatments such as chisel plowing would increase vegetation but would decrease bare ground habitat for the mountain plover. Special management could include prohibiting any land treatments.

**Vegetation Management:** Mountain plovers show a preference for low growing vegetation. Grazing by cattle, sheep, black-tailed prairie dogs, and Richardson ground squirrels is important in maintaining the short vegetative

height. Livestock are not required to be present for a grazed site to be used by mountain plovers. Past grazing (primarily during winter and spring) seemed to create conditions sought out by mountain plovers. Nuttall's saltbush and wild buckwheat appeared to be naturally dwarf in stature. The availability of bare ground may also be important to mountain plovers. Special management could include maintaining low growing vegetation and bare areas.

Riparian and Wetland Management of Watersheds: Little Beaver Creek is the main stream in the nominated area. It is classified as *functional-at risk with a static trend*. Grazing management to improve riparian conditions must consider effects on plover habitat.

## **RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS**

The BLM planning regulations require that resource management plans be "consistent with officially approved or adopted resource related plans 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 law, and regulations applicable to public lands..." (43 CFR 1610.3a). The BLM will review this plan for consistency with other federal, state and local government or Native American planning efforts. The BLM will also rely on other entities to review this document for inconsistencies with their plans.

The Department of the Interior, Fish and Wildlife Service (Service) is proposing to list the mountain plover as a threatened species pursuant to the Endangered Species Act of 1973. The proposed rule is in the Federal Register dated February 16, 1999: Volume 64, Number 30 pages 7587-7601. According to the Service, the current population estimate is between 8,000 and 10,000 birds. Conversion of grassland habitat, agricultural practices, management of domestic livestock, and decline of native herbivores are factors that likely have contributed to the mountain plover's decline.

The designation of critical habitat was determined not prudent by the Service, therefore specific areas within the geographical area occupied by Mountain Plovers would not be designated under the listing.

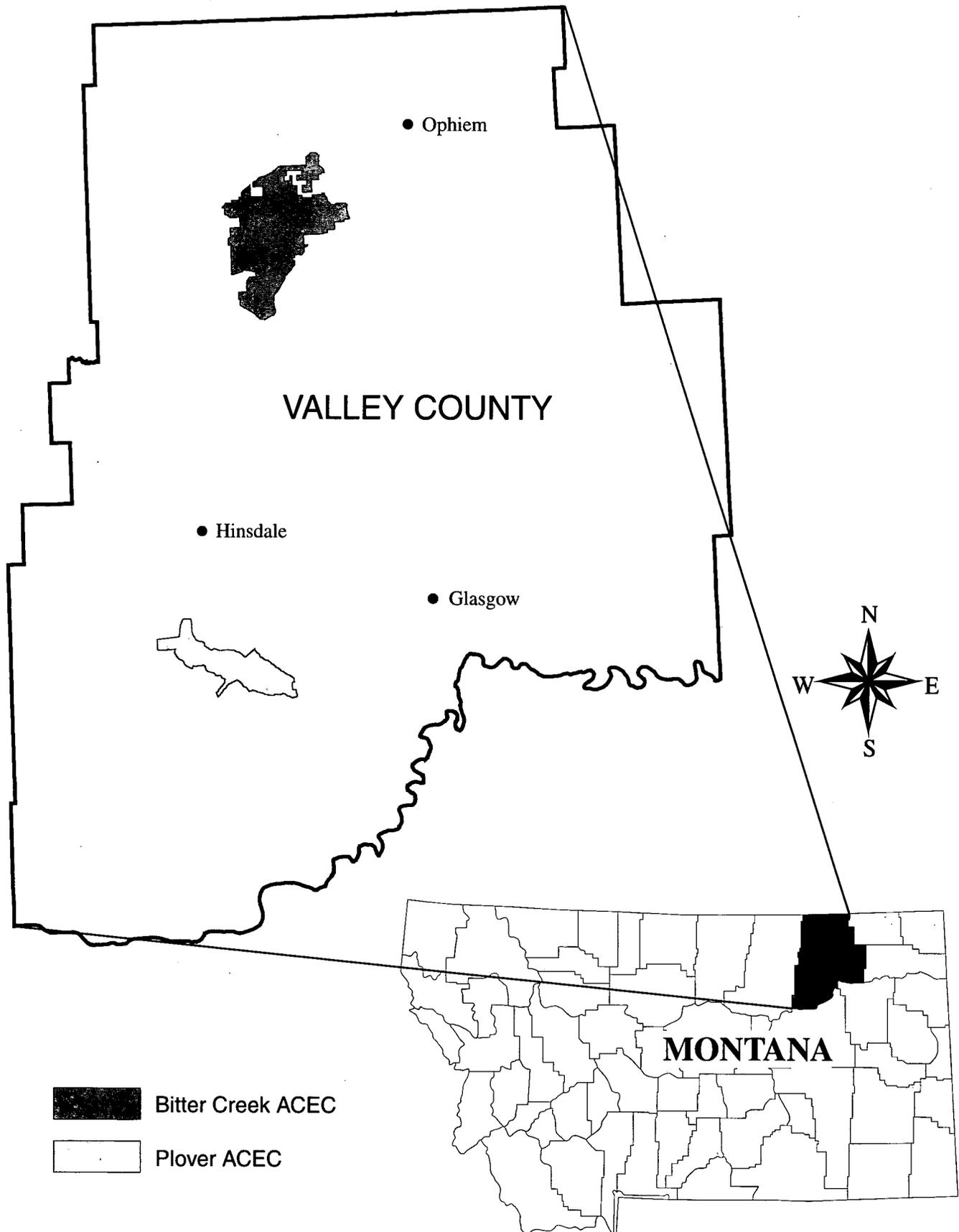
Mountain plovers' breeding habitat in Montana is usually characterized by grasslands and shrublands. Most breeding

sites are grazed by domestic livestock or prairie dogs and the largest number of breeding mountain plovers in Montana is found on and around a large complex of black-tailed prairie dog towns in Phillips and Blaine counties. Plovers are also found on non-prairie dog habitat in Valley, and in Wheatland, Golden Valley, Big Horn, Broadwater, Carbon, Carter, Fergus, Jefferson, Hill, Madison, Musselshell, Petroleum, Rosebud, Toole, Treasure and Teton Counties. The Montana population is estimated at 2,000 birds for Phillips and Blaine Counties and 800 individuals for the rest of Montana.

Conservation measures provided to a species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and leads to the implementation of conservation actions by Federal, State, County, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States, and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking and harming are discussed, in part, below.

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened, and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Endangered Species Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(1) provides that all Federal agencies shall utilize their authorities in furtherance of the purpose of the Act by carrying out programs for the conservation of species listed pursuant to the Act. Further, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Consequently, Federal listing will cause all Federal agencies to consider mountain plover conservation needs during their review of activities that they may fund, authorize, or carry out.

# Figure 1 Location Map



# CHAPTER 2

## ALTERNATIVES

### INTRODUCTION

This chapter presents alternatives for the Bitter Creek and Mountain Plover potential Areas of Critical Environmental Concern (ACEC). Two alternatives are analyzed in detail for each potential ACEC. Alternative A, the no action alternative, would continue current management. If selected, there would be no amendment to the Judith-Valley-Phillips Resource Management Plan (RMP) or designation of any ACECs. Alternative B would provide special management and designate the areas as ACECs. Designation of an ACEC only applies to public land administered by the Bureau of Land Management (BLM).

### MANAGEMENT COMMON TO ALL ALTERNATIVES

#### Bitter Creek

Since this area is a wilderness study area (WSA), management is guided by the Interim Management Policy for Lands Under Wilderness Review (IMP). Congress will ultimately decide which areas are added to the national wilderness system. Until such time as Congress decides, Bitter Creek will continue to be managed under the IMP.

Section 202 and 603 (c) of the Federal Land Policy Management Act (FLPMA) are the parameters for over-all management of the WSA which includes the “non-impairment” mandate. (IMP Handbook)

The nonimpairment criteria are:

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.

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 the area’s suitability for preservation as wilderness.

The BLM’s management policy is to continue resource uses on lands under wilderness review in a manner that

*maintains the area’s suitability for preservation as wilderness.*

If this area is not designated as wilderness by Congress, it will subsequently be managed in accordance with guidance for adjacent BLM public land unless otherwise specified under this plan amendment.

#### Mountain Plover

The Montana/Dakotas Standards for Rangeland Health and Guidelines for Livestock Grazing Management would apply to all alternatives (BLM, 1997). Standards are statements of physical and biological conditions or degree of function required for healthy sustainable rangelands. Achieving or making significant and measurable progress towards these functions and conditions is required of all uses of public rangelands. Historical data, when available, should be used when assessing progress towards these standards. The Lewistown District Standards and Guidelines apply in this area.

“Lewistown STANDARD #5: Habitats are provided to maintain healthy, productive and diverse populations of native plant and animal species, including special status species (federally threatened, endangered, candidate or Montana species of special concern as defined in BLM Manual 6840. Special Status Species Management).” *Management for indigenous vegetation and animals is a priority. The environment contains components necessary to support viable populations of a sensitive/threatened and endangered species in a given area relative to site potential.*

Guidelines for management of grazing (including domestic animals and wildlife) are preferred or advisable approaches to ensure that standards can be met or that significant progress can be made towards meeting the standard. The guidelines that would apply for these alternatives are; “Lewistown GUIDELINE #11: Grazing management should maintain or improve habitat for federally listed threatened, endangered, and sensitive plant and animals.” and “Lewistown GUIDELINE #12: Grazing management should maintain or promote the physical and biological conditions to sustain native populations and communities.”

The Endangered Species Act of 1973 provides for the protection of listed species and their habitats. Species listed

as threatened or endangered are to receive special protection. Any actions that may detrimentally impact these species will be reviewed by the U.S. Fish and Wildlife Service under a formal consultation process. A threatened species is one likely to become endangered in the foreseeable future. An endangered species is one that faces extinction throughout all, or a significant portion of its range. Federal agencies are directed to carry out programs for threatened or endangered species and the essential habitat upon which they depend. These programs are to bring these species and their habitats to a condition where the protective measures provided by the Endangered Species Act are no longer necessary.

The BLM provides the same level of protection to candidate species as listed species except that formal consultations are not required. The mandatory requirements of the Endangered Species Act have the potential for imposing major constraints on other uses of the BLM public lands. In many cases, there is no managerial discretion for carrying out programs that conflict with a threatened or an endangered species objectives.

## **ALTERNATIVE A - CURRENT MANAGEMENT**

### **Bitter Creek**

The area would not be designated an ACEC. The current management of this area is guided by the Interim Management Policy for Lands Under Wilderness Review (IMP), BLM Handbook H-8550-1, until Congress determines its eligibility into the National Wilderness Preservation System. If Congress does not designate this area as wilderness, it would be managed in accordance with guidance for adjacent BLM public land unless otherwise specified. (BLM, 1992)

The WSA is not available for oil and gas leasing under the IMP. The Federal Onshore Oil and Gas Leasing Reform Act of 1987 also prohibits BLM from leasing in WSAs. If released from wilderness study status, the BLM would protect surface resource values on lands open to oil and gas leasing. The area would be open with standard terms and standard lease stipulation (Form 3109-1). The standard lease stipulation would be used to protect raptors, crucial winter range, soils and visual resources.

With nonenergy mineral resources (hardrock mining) all federal minerals are available for exploration and development. Exploration for or development of other minerals (sand and gravel) is not permitted. If released from wilderness study status, the BLM public lands would

be open for exploration or development, however, there is the low probability of other mineral occurrence. (BLM, 1989)

Vegetative manipulation by chemical, mechanical, or biological means is not permitted except for (1) plantings or seedings established before October 1976 may be maintained but not expanded; (2) activities that qualify under the manner and degree provision for grandfathered grazing uses; and (3) control of noxious weeds and individual exotic plants when there is no effective alternative and when the control of noxious weeds or exotic plants are necessary to maintain the natural ecological balances within a WSA. Hand or aerial seeding of native species may be done to restore natural vegetation. If released from wilderness study status, land treatments would be similar to that of adjacent lands.

Rangeland management activities on lands under wilderness review involve the distinction between grazing uses that are grandfathered by Section 603 (c) of FLPMA and those that are not. Grandfathered grazing use is that grazing use, including the number, kind, and class of livestock and season of use authorized and used during the 1976 grazing fee year, including areas that were in the rest cycle of a grazing system; nongrandfathered grazing is any grazing that was not authorized and used during the 1976 grazing fee year. If released from wilderness study status, grazing would be managed similar to that of adjacent lands.

Current management of noxious plants is guided by the IMP where integrated pest management is the primary tool with provisions of using the minimum tools necessary to eradicate such species. Public education is incorporated into the current management of what one can do to prevent the spread of noxious weeds through the Leave No Trace program. If released from wilderness study status, integrated pest management will still be the primary tool.

No action would be initiated on BLM public land which would jeopardize any candidate species or jeopardize any federally listed threatened or endangered plant or animal. If released from wilderness study status, the potential for developing reservoirs for waterfowl production would be investigated.

Under the IMP this area is managed as a semi primitive nonmotorized area. If released from wilderness study status this area would be managed as an extensive recreation management area where a limited commitment of resources will provide dispersed and unstructured recreational activities.

Off highway vehicle (OHV) travel is limited to numbered routes only. Cross-country travel is prohibited. If released

from wilderness study status, OHV travel would be restricted seasonally, during hunting season, to numbered roads. Cross-country travel would be allowed the remainder of the year.

Under the IMP, minimum impact fire suppression tactics will be employed to insure the actions taken are safe, timely, and effective. Suppression techniques will focus on enhancing a natural barrier such as a road or trail. If released from wilderness study status, fire suppression tactics would be the same as on adjacent lands.

Under the IMP any land authorization must satisfy the nonimpairment criteria. If released from wilderness study status, right-of-ways would be considered on a case by case basis with appropriate stipulations.

For any surface disturbing activities (e.g. mineral development, range improvements, right-of-way location), BLM would evaluate the activity and if necessary apply mitigating measures, deny the authorization, or relocate the activity to a more suitable area. Surface disturbing activities would require reclamation.

### **Mountain Plover**

The area would not be designated an ACEC. The area would be managed consistent with the existing guidance from the Judith-Valley-Phillips RMP.

Wildlife and fisheries management priority would be given to the mountain plover. The emphasis for habitat maintenance and development would be on present and potential habitat for sensitive, threatened and/or endangered species. No action would be initiated on BLM public land which would jeopardize any candidate or federally listed threatened and endangered plant or animal.

The BLM would protect surface resource values on lands open to oil and gas leasing. The mountain plover habitat area is open to oil and gas leasing subject to standard stipulations (Form 3109-1). The provisions of the standard stipulation would be used to protect the mountain plover (use or occupancy will be restricted within 1/4 mile from identified essential habitat).

Under the draft Judith-Valley-Phillips Oil and Gas Supplemental RMP/EIS (BLM, 1998) a new stipulation would apply. The 27,000 acre hardpan area would have a special timing stipulation (see Appendix C). The stipulation is; surface use is prohibited from April 1 to July 31 within 1/4 mile of occupied nesting habitat for mountain plovers. This stipulation does not apply to the operation and maintenance of production facilities. For the

remaining energy mineral resources (geothermal, oil shale, and coal)

the BLM public lands would be open for issuing prospecting permits and leases with mitigation measures.

With nonenergy mineral resources (hardrock mining) all federal minerals are available for exploration and development. The BLM would allow exploration and development of bentonite resources while preventing unnecessary or undue degradation of nonmineral resources. This area is available for mineral material disposal.

Land treatments such as contour furrowing and grazing methods to improve ground cover and control erosion, runoff, and sedimentation could be applied in the Willow Creek Basin and in other locations with similar soils. Prior to constructing any rangeland improvements, a wildlife biologist would provide site-specific recommendations and develop needed mitigating measures.

Livestock grazing is managed as an integral part of the overall multiple-use of the BLM public lands. Range improvements (primarily reservoirs, and fences) would be built to support AMPs. Grazing methods to improve or maintain riparian-wetland areas to proper functioning condition would be continued or implemented.

The primary tool for the control of noxious plants would be IPM (integrated pest management), which are mechanical, biological, and chemical methods.

Spraying or other control methods for insects could be allowed using mechanical, biological, and chemical methods.

The BLM public lands in this area would remain open to off-road motorized travel. Cross-country travel is open yearlong as described in the Judith-Valley-Phillips RMP.

Fire management such as prescribed burning would be administered on an individual basis in grassland types to improve wildlife habitat and vegetation production.

Land authorizations such as rights-of-way would be considered on a case-by-case basis with appropriate stipulations.

For any surface disturbing activities (e.g. range improvements, mineral development, right-of-way location), BLM would evaluate the activity and if necessary apply mitigating measures, deny the authorization, or relocate the activity to a more suitable area. Surface disturbing activities would require reclamation.

## **ALTERNATIVE B - ACEC DESIGNATIONS (Preferred)**

### **Bitter Creek**

Bitter Creek would be designated an ACEC (59,660 public surface acres, see Figure 2). If Congress adopted BLM's recommendation and released Bitter Creek from WSA status, a plan for management of the ACEC would be initiated within two years. This ACEC management plan would be developed through a public process and would consider various alternatives. Following release by Congress and until an ACEC Management Plan is completed, the special management would be the same as the revised edition of the IMP existing in 1998 as described under Alternative A.

### **Mountain Plover**

The Mountain Plover area would be designated an ACEC (24,730 public surface acres, see Figure 3). The boundary would be on existing roads (42.3 miles) and property lines (3 miles). A watchable wildlife area could be established in an unobtrusive area for environmental education. The ACEC would include two habitat areas for the mountain plover. The primary habitat is the hardpan area (Vaeda silty clay soils) the Nuttall's saltbush habitat on the valley bottoms (12,000 acres). The secondary habitats are on the gentle rises on either side of the valleys.

The following management prescriptions would apply within the ACEC to protect the mountain plover during the nesting period from April 1 to July 31.

A seasonal restriction would be placed on oil and gas activities. Geophysical exploration would not be allowed from April 1 to July 31 and oil and gas leases would include a stipulation that prohibits surface use from April 1 to July 31 (see Appendix D). The following mitigating measures would apply for any oil or gas well completed as a producer.

1. Production facilities would be located off the primary habitat (hardpan areas) within the ACEC. Facilities include, for example, the treater and the storage tanks. The pump unit would not be included.
2. Pipeline and road construction would not be allowed from April 1 to July 31 in the primary habitat.
3. Special projects (e.g. work over rigs, pipeline maintenance) during the period April 1 to July 31 would require an inventory to determine if occupied nesting habitat occurs. The inventory would have to be completed

by a qualified biologist using BLM approved procedures. If there are occupied nests within 1/4 mile of the proposed activity, mitigation could include the use of a temporary road or with travel in the early morning or late afternoon but no travel from 11:00 a.m. to 4:00 p.m. If there are no occupied nests within 1/4 mile of the proposed activity, special mitigation measures would not apply.

The following mitigating measures would be considered during the Plan of Operations approval process for bentonite exploration and development. Mitigating measures would be applied to prevent unnecessary or undue degradation.

1. Seasonal restrictions would be recommended on surface disturbing activities from April 1 to July 31 on a case-by-case basis to prevent unnecessary or undue degradation. Proposed surface disturbing activities during the period April 1 to July 31 would require an inventory to determine if occupied nesting habitat occurs. If there are occupied nests within 1/4 mile of the proposed activity, the BLM would work with the operator to relocate the proposed activity or limit the size and duration of the disturbance. If there are no occupied nests within 1/4 mile of the proposed activity, special mitigation measures would not apply.
2. Alternative location of facilities off the primary habitat (hardpan areas) within the ACEC.
3. Access route design for exploration and development would minimize surface disturbance to avoid occupied nesting habitat.
4. Concurrent reclamation would be emphasized to keep disturbance to a minimum, thereby reducing habitat loss. Concurrent reclamation is the method of reclamation where topsoil removed from an area about to be mined is either 1) directly and immediately reapplied to the adjacent mined area; or 2) the topsoil is applied to the area it was removed from within a short time (1-2 months). Concurrent reclamation provides the greatest opportunity to return the native plant community to the site by preserving the seeds, roots and soil microorganisms. The topsoil material is only about 1-2 inches thick over shale in most places. Within this thin layer are all the ingredients to reestablish the native plant community. If concurrent reclamation is not used, reclamation should be within at least 2 years. The goal of reclamation would be to keep the vegetation short with bare ground.
5. Reclamation would utilize native plant species. Preference would be given to plants that are low growing.

All right-of-way (ROW) grants within the primary habitat would include the following stipulation. Construction

activity and surface disturbance would be prohibited during the period from April 1 to July 31 for the protection of mountain plover nesting habitat. Any exceptions to this requirement must have prior written approval from the authorized officer, except for emergency actions. Other mitigating measures would be considered on a case-by-case basis with appropriate stipulations from BLM Manual Handbook H-2801-1 incorporated into the ROW grant.

The BLM would minimize any road construction within the ACEC. No changes to speed limits would occur on existing roads. Portions of two roads are recommended for re-routing to reduce erosion and avoid mountain plover nesting habitat; Beaver Branch and Arrambide. Any BLM road maintenance during the time period (April 1 to July 31) within the ACEC boundaries would be coordinated with a wildlife biologist.

Off-highway travel would be restricted seasonally (April 1 to July 31) to designated roads and trails (see Figure 3). Off-road travel would be limited to administration of a federal lease or permit.

Current management for livestock grazing would continue but any changes or revisions based on standards for rangeland health and guidelines for livestock grazing management would address mountain plover habitat.

Other activities and surface disturbing activities would be limited seasonally or prohibited within the ACEC. Land treatments, e.g., contour furrowing or chisel plowing, would not be allowed within the ACEC. Construction of range and wildlife improvements or use as a fire staging area would not be allowed from April 1 to July 31. The containment/eradication of noxious plants would focus primarily on treatment in the fall and/or aerial spraying. The use of insecticides would not be allowed.

## **ALTERNATIVES CONSIDERED, BUT NOT ANALYZED IN DETAIL**

This section discusses alternatives considered but eliminated from detailed study, along with a brief discussion of reasons why they were determined not to be reasonable alternatives.

### **Mixed Grass Prairie**

An alternative designating the entire Mixed Grass Prairie nomination (350,000 acres) an ACEC was not considered since the nomination does not meet the criteria of relevance and importance. Only a portion of the area, Bitter Creek, meets the criteria. To be considered as a potential ACEC

and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2 (see Appendix B).

### **Bitter Creek ACEC Management Plan**

Management of the Bitter Creek WSA will continue under the IMP until Congress determines wilderness or nonwilderness status. The time table for Congress to act on this is unknown. Therefore an ACEC management plan would be premature at this time; and may be unnecessary if Congress determines that this prairie ecosystem should be represented in the Wilderness Preservation System. Since Congress can delay the fate of this area for decades, issues that would be apparent in developing a management plan today, may be moot points if and when we need to develop a management plan.

### **Boundaries of the 59,660 acre ACEC**

Changing the boundary and excluding the northeast portion of the Bitter Creek area was considered. This area, often referred to as the "horsehead" because of its shape on the map, has a difficult boundary to define on the ground. However, this area is an integral part of the overall Bitter Creek WSA in terms of the scenic, cultural, and wildlife resources.

### **Introduction of Wild Horses**

It was suggested during scoping that BLM introduce wild horses in the Bitter Creek area. This is outside the scope of this document.

### **Mountain Plover Habitat Enhancement**

This alternative would include the use of livestock to increase the area of short vegetation. Domestic sheep grazing produces habitat conducive to mountain plovers, in other parts of Montana. This alternative would require that sheep be used along with cattle to more heavily utilize the grass in areas that are not naturally covered with short vegetation or bare sections. This alternative was eliminated from detailed study because the existing fences would have to be modified to become sheep fences. These tightly spaced or woven wire fences would restrict the movement of pronghorn antelope, which are abundant in the area. More time and labor would be required of the livestock permittees, if sheepherders were used instead of fences. Other reasons for eliminating this alternative is the area naturally has short vegetation and bare ground; and the potential for resource degradation, especially erosion on shale derived soil under very heavy grazing.

## **Mountain Plover Nest Protection**

This alternative would include the use of cages to cover the nests of the mountain plover to increase the nesting success. Small mesh wire cages are currently being used to protect the nests of piping plovers by other agencies. These cages appear to increase the number of chicks that are hatched along the beaches of the east coast and the sand bars of the Missouri River where people and dogs are abundant. This alternative was eliminated from detailed consideration because destruction of nests or predation by people or dogs is not a factor in mountain plover productivity in this area.

## **Mineral Withdrawal**

This alternative would include withdrawing the BLM public lands within the Mountain Plover ACEC boundary from mineral entry. To accomplish this alternative is beyond the authority of the local managers and would require that the U.S. Congress withdraw the 24,730 acres. This alternative was eliminated from detailed consideration because operators of bentonite mining could adjust activities to conduct most operations off the ACEC and reclamation could return the mined area to the native plant community. Mine plans will be reviewed and appropriate measures taken to protect nonmineral resource values. Significant resource impairment would not occur with the appropriate measures taken.

## **No Leasing for Oil and Gas**

This alternative would include not leasing the BLM public lands within the Mountain Plover ACEC boundary for oil and gas. This alternative was eliminated from detailed consideration because adding additional timing restrictions on oil and gas activities during exploration and production would prevent potential adverse effects on mountain plovers. Other agencies in Colorado have had experiences which have shown that mountain plover and oil and gas activities are not incompatible at all times.

## SUMMARY OF ALTERNATIVES

Tables S.1 and S.2 present a summary comparison of the alternatives and the environmental consequences.

**Table S.1. Summary of Alternatives**

	<b>Alternative A - Current Mgmt.</b>	<b>Alternative B - ACEC Designation</b>
<b>Bitter Creek</b>	Would not be designated an ACEC and would continue to be managed as a Wilderness Study Area (WSA) under the Interim Management Policy. If released from WSA status the area would be managed per guidance for adjacent lands unless otherwise specified.	Would be designated an ACEC. If Bitter Creek is released from Wilderness Study Area status an ACEC management would be initiated within two years, during which management would continue under the Interim Management Policy (IMP).
<b>Energy Mineral Resources</b>	The area would not be available for Oil and Gas leasing. If released, standard terms and stipulations would apply.	Same as the IMP until a management plan is completed. The area would not be available for Oil and Gas leasing.
<b>Other Minerals</b>	Federal minerals are available for exploration and development. Exploration and development of sand and gravel would not be permitted. If released, lands would be open to exploration and development.	Same as the IMP until a management plan is completed. Federal minerals are available for exploration and development. Exploration and development of other minerals would not be permitted.
<b>Land Treatments Vegetation Management</b>	Mechanical or chemical vegetation manipulation would not be permitted. If released, land treatments could occur.	Same as the IMP until a management plan is completed. Mechanical or chemical vegetation manipulation would not be permitted.
<b>Grazing</b>	Grandfathered range management activities would be permitted. If released, grazing would be managed similarly to adjacent lands.	Same as the IMP until a management plan is completed. Grandfathered range management activities would be permitted.
<b>Noxious Weeds</b>	Noxious weed control would be done using minimum tool and integrated pest management concepts. If released, integrated pest management would continue.	Same as the IMP until a management plan is completed. Noxious weed control would be done using minimum tool and integrated pest management concepts.
<b>Recreation</b>	Managed as a semi primitive nonmotorized recreation area. If released, it would be managed as an extensive recreation management area.	Same as the IMP until a management plan is completed. Managed as a semi primitive nonmotorized recreation area.
<b>Vehicle Travel Off-Highway Vehicles</b>	OHV travel limited to numbered routes, if released, number route limit would only apply in hunting season.	Same as the IMP until a management plan is completed. OHV travel limited to numbered routes.

**Table S.1. Summary of Alternatives (continued)**

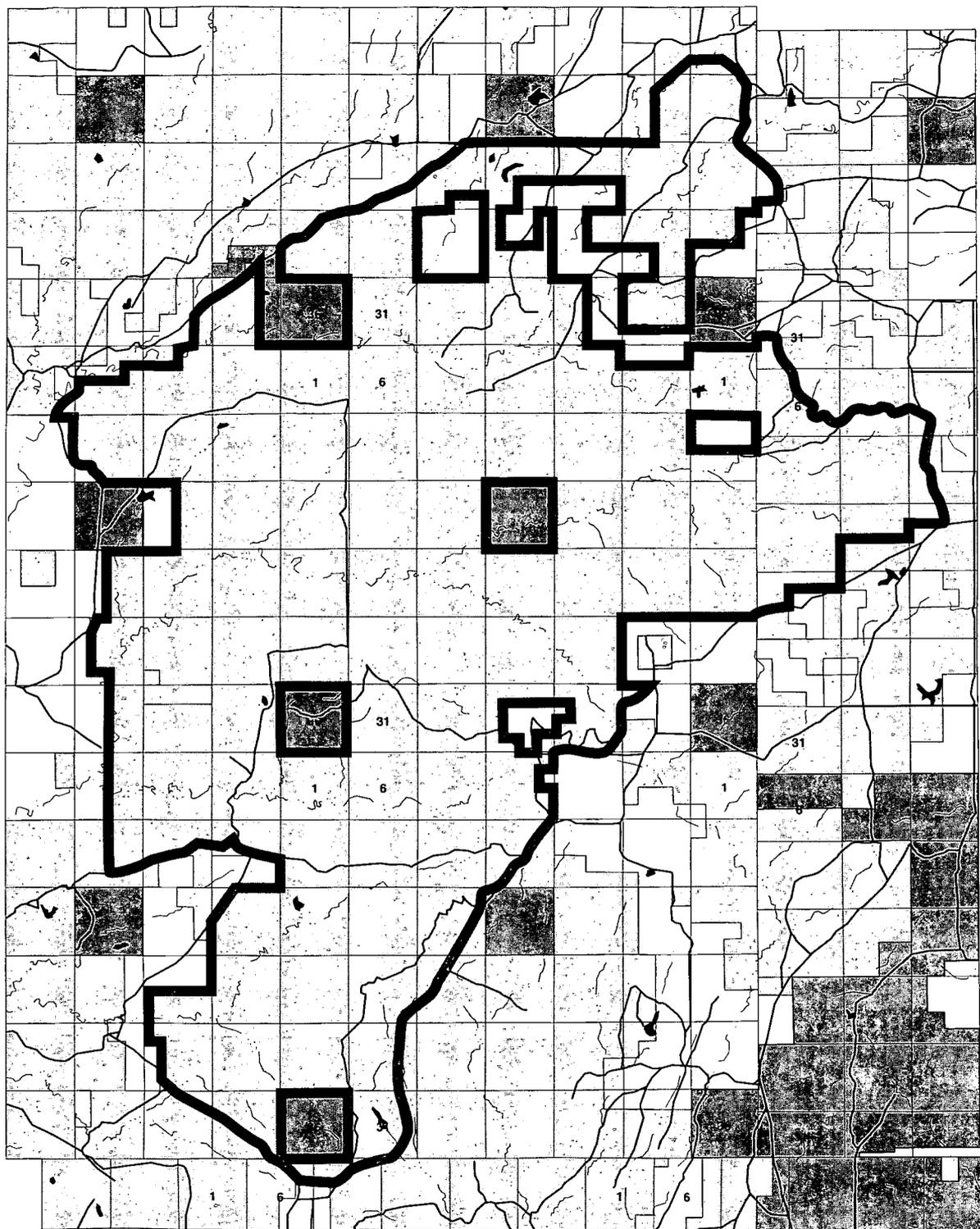
	<b>Alternative A - Current Mgmt.</b>	<b>Alternative B - ACEC Designation</b>
<b>Fire Management</b>	Minimum impact fire suppression tactics would be employed. If released, fire suppression would be same as adjacent lands.	Same as the IMP until a management plan is completed. Minimum impact fire suppression tactics would be employed.
<b>Land Authorizations</b>	All land authorization must meet the nonimpairment criteria. If released, reclamation would be required but not nonimpairment.	Same as the IMP until a management plan is completed. All land authorization must meet the nonimpairment criteria.
<b>Mountain Plover</b>	The area would not be designated an ACEC. No action would be taken to jeopardize the mountain plover.	Would be designated an ACEC. Special management would be applied to benefit the plover.
<b>Energy Mineral Resources</b>	Oil and Gas leasing and development would follow standard terms and stipulations.	Seasonal restrictions would be applied to both exploration and development.
<b>Other Minerals Bentonite</b>	Federal minerals are available for exploration and development. BLM would allow exploration and development of bentonite resources while preventing unnecessary or undue degradation of nonmineral resources.	Federal minerals are available for exploration and development. Seasonal restrictions (April 1- July 31), native plant species reclamation standards, facility location, road design and use restrictions would be recommended and emphasized for bentonite mining and other surface disturbing activities.
<b>Noxious Weeds</b>	Noxious weed control would use integrated pest management methods.	Noxious weed control would use integrated pest management methods. Focus on treatment in the fall or aerial spraying. Insecticidal spraying not allowed.
<b>Vegetation Management Grazing</b>	Grazing management would be implemented to meet Standards and Guidelines, including wildlife habitat standards.	Current management for livestock grazing would continue. Grazing management would be implemented to meet Standards and Guidelines, and specifically address mountain plover habitat.
<b>Land Treatments Range Improvements</b>	Range improvements including, land treatments could be done with stipulations to protect wildlife.	Construction prohibited April 1- July 31. No mechanical land treatments.
<b>Vehicle Travel Off-Highway Vehicles</b>	BLM public lands would remain open to off-road motorized travel.	OHV use would be restricted seasonally (April 1 - July 31) to designated roads and trails.
<b>Fire Management</b>	Fire suppression would be same as adjacent lands.	Fire suppression would be same as adjacent lands. Restriction on use as a fire staging area, April 1 - July 31.

**Table - S.2 - Comparison of Impacts: Bitter Creek**

	<b>Alternative A (Current Management)</b>	<b>Alternative B (Proposed Action)</b>
<b>Fire Management</b>	Minimum tool fire suppression. Low potential for impacts from wildfire suppression activities.	Impacts would be the same as the IMP until a management plan is completed.
<b>Land Treatments - Noxious Weed Control</b>	Use Integrated Pest Management to control noxious weeds. Low potential for mechanical land treatments if released from WSA status.	Impacts would be the same as the IMP until a management plan is completed.
<b>Riparian Management</b>	Maintain PFC or steady upward trend to PFC	Impacts would be the same as the IMP until a management plan is completed.
<b>Special Status Species</b>	No effects	Impacts would be the same as the IMP until a management plan is completed.
<b>Wildlife &amp; Fisheries Management</b>	IMP restricts reservoir construction. Possible construction of waterfowl or fisheries reservoirs if released from WSA status.	Impacts would be the same as the IMP until a management plan is completed.
<b>Recreation</b>	IMP restricts motorized trail riding. Potential loss of naturalness and semi-primitive experience if released from WSA status.	Impacts would be the same as the IMP until a management plan is completed.
<b>Off Highway Vehicles</b>	No off road travel under the IMP. Low potential for creation of new trails if released.	Impacts would be the same as the IMP until a management plan is completed.
<b>Grazing</b>	Under the IMP no change to grazing. Construction of reservoirs and fences possible if released.	Impacts would be the same as the IMP until a management plan is completed.
<b>Energy Mineral Resources</b>	Not available for leasing under the IMP. Moderate potential for loss of naturalness, visual impacts, wildlife habitat and security loss and cultural resource loss if released.	Impacts would be the same as the IMP until a management plan is completed.
<b>Minerals</b>	Low probability of development. No expected impact	Impacts would be the same as the IMP until a management plan is completed.

**Table - S.2 - Comparison of Impacts: Mountain Plover**

	<b>Alternative A (Current Management)</b>	<b>Alternative B (Proposed Action)</b>
<b>Land Treatments - Noxious Weed Control</b>	No treatments would occur on plover habitat. No impact to plover.	No treatments would occur on plover habitat. No impact to plover. Activities would be limited seasonally, primarily on treatment in the fall and/or aerial spraying. The use of insecticides would not be allowed.
<b>Fire Management</b>	No impact.	No impact, fire staging areas restricted.
<b>Riparian Management</b>	Projects and fences constructed for riparian improvement.	Riparian improvement could be slowed.
<b>Special Status Species</b>	No negative effects.	No negative effects with positive effects on mountain plover habitat.
<b>Wildlife &amp; Fisheries Management</b>	No impact.	No impact.
<b>Recreation</b>	Open to off-road travel yearlong. Minor potential for disturbance due to off road travel. Continued erosion on poorly designed access routes.	Seasonal closures to off-road travel. Potential to attract visitors to view plover. Reduced impact from off-road travel. Reduced erosion by rerouting two major access roads.
<b>Grazing</b>	Positive impact to plovers. Small disturbance to plovers from construction of range improvements.	Positive impact to plovers. No effect on permittees. Seasonal restrictions would eliminate potential disturbance due to constructions of improvements.
<b>Energy Mineral Resources</b>	Leasing and exploratory drilling would be controlled by applying standard terms and stipulations to protect the mountain plover. No special management would be required during development.	Lessee/operator could be required to delay projects. Timing restrictions on both exploration and development would protect the plover from disturbance during the nesting and rearing period.
<b>Non-Energy Mineral Resources</b>	No expected impact.	No expected impact.
<b>Bentonite</b>	Impacts to mountain plovers would occur if mining occurred during nesting.	Seasonal restrictions on mining activities would protect the plover during the nesting and rearing period.
<b>Land Authorizations</b>	No impact to plovers.	No impact to plovers.



R 37 E

R 38 E

R 39 E

T 35 N

T 34 N

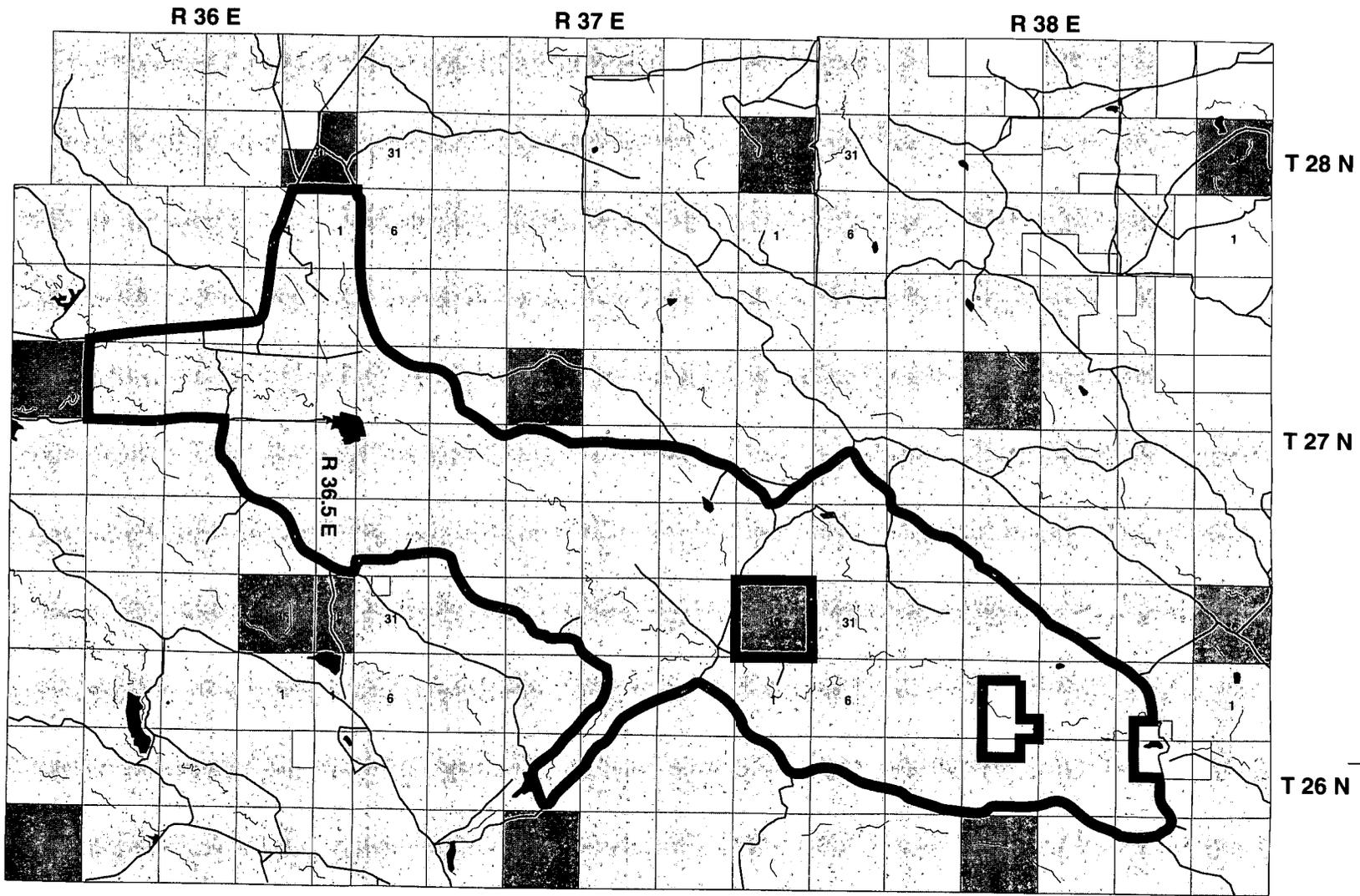
T 33 N

T 32 N

**LEGEND**

-  Federal Land
-  State Land
-  Private Land
-  ACEC Boundary

**Figure 2**  
**Bitter Creek ACEC**



-  Federal Land
-  State Land
-  Private Land
-  ACEC Boundary

**Figure 3**  
**Mountain Plover ACEC**

# CHAPTER 3

## AFFECTED ENVIRONMENT

### INTRODUCTION

This section of the plan amendment and environmental assessment (EA) contains a description of the pertinent natural resources and land uses found in each of the areas. The following critical elements of the human environment are not affected and will not be addressed further in this document; air quality, prime and unique farm lands, floodplains, hazardous wastes, wild and scenic rivers, and environmental justice. The plan amendment would not affect minority or low-income populations. More information about the area can be found in the Judith-Valley-Phillips Resource Management Plan (RMP) and final Environmental Impact Statement (EIS) (BLM, 1992) and the final Bitter Creek Wilderness EIS (BLM, 1989).

### BITTER CREEK

The Bitter Creek Wilderness Study Area (WSA) is located in the glaciated Missouri Plateau. The topography consists of flat to gently rolling terrain with rugged denuded badlands. Summer temperatures are hot with maximum temperatures in the high 90 degree Fahrenheit range. Winters are cold, with many days of sub-zero temperatures and a constant wind-chill factor is present.

#### Scenic

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.

There are minimal visual intrusions which do not detract from the scenic experience. Scenic qualities include the vast, unhampered domain; lack of synthetic facilities such as paved roads, buildings, 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.

A watchable wildlife area is situated on the eastern rim where hawks and eagles can be seen soaring over the WSA.

This rim differs in elevation by as much as 600 feet from the floor of the WSA.

Nightfall transforms this area into darkness with illumination from the celestial sphere. The lack of facilities and lighting enhance the night sky. The sense of vastness on this open landscape during the night, the sounds of nocturnal animals, and the clarity of the constellations turn the night and this area into an intriguing area for visitors who enjoy the night time nature.

#### Soils

Seventy percent of 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.

#### Vegetation

The Bitter Creek WSA contains a variety of plant communities in healthy condition, including riparian, wetland, shortgrass prairie benches, woody draws, and shale badlands. The WSA 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. There are wooded draws which include buffaloberry, Rocky Mountain juniper, green ash, chokecherry, and less commonly aspen.

The dominant vegetation of the stream channels is a sedge-rush and/or streambank willow community at the wettest zone with rose-snowberry, buffaloberry and silver sagebrush with western wheatgrass, green needlegrass, 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.

Leafy spurge has invaded the WSA and has altered the vegetation of some of the riparian areas entering Rock Creek. It is estimated that there are 500 acres of leafy spurge on BLM public lands within the WSA. About 2/3 of the area, on the north and east, has a light infestation. Chemical control is practiced in this zone. In the Eagle's Nest allotment the infestation is heavy along the streams

and chemical control is not feasible. Biological control is practiced in this zone.

## **Water Resources**

The entire WSA is within the Willow Creek watershed. There are no perennial streams 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 WSA. All of the riparian areas are either in proper functioning condition or functional-at-risk.

## **Special Status Species**

Special status species include the following; (1) proposed species - species that have been officially proposed for listing as threatened or endangered by the Secretary of the Interior, (2) T/E species - species officially listed as threatened or endangered by the Secretary of the Interior under the provisions of the Endangered Species Act, (3) candidate species - species designated as candidates for listing as threatened or endangered by the Fish and Wildlife Service, (4) sensitive species - species designated by a State Director as sensitive.

Under contract with BLM, the Montana Natural Heritage Program sampled plots in the area to determine the presence of threatened, endangered, or rare plant species or communities. No threatened/endangered plant species or communities were found. The only plant on the BLM watch list found in Valley county is Bractless *Mentzelia* (*Mentzelia nuda*), and it has been found in the far eastern part of the county, next to Missouri River. It is not located in the Bitter Creek area.

Historical and potential habitat for five species of wildlife which are federally classified as endangered or threatened occur within the Judith-Valley-Phillips planning area. These species are the bald eagle, black-footed ferret, gray wolf, least tern, and piping plover. Bald eagles could migrate through the area, but they would not stay for a lengthy period of time or to nest in the area. There is very limited black footed ferret habitat, and no ferret sightings have been made. A gray wolf was known to wander through the area approximately 20 years ago, but no sightings have been reported since. The remaining 2 species, least tern and piping plover, would not be expected to be found in the area.

No proposed T/E species are found here, but the area provides habitat for candidate wildlife species. The candidate species that could use the area at some time during the year are: swift fox and Black-tailed prairie dog.

The area provides habitat for BLM designated sensitive species. The sensitive species that could use the area at some time during the year are: Peregrine falcon, Ferruginous hawk, Loggerhead shrike, Northern goshawk, Baird's sparrow, Canvasback, Common loon, Long-billed curlew, Swainson's hawk, and Burrowing owl.

## **Wildlife**

The Bitter Creek area combines a lack of road development with a variety of habitats, which supports a diversity of 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; and 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 sage grouse. One black-tailed prairie dog town is located in the southern end of the area.

## **Cultural Resources**

Numerous cultural sites are known to occur in the vicinity of the WSA as a result of project related inventories. Prehistoric inhabitants of this area were semi-nomadic hunter-gatherers. They were dependant 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 the stones that held down the bottoms of their lodges or tepees. These prehistoric features are still visible in the WSA. This region was later homesteaded and cultural features associated with farming and raising livestock are also in the area.

## **Recreation**

Major recreation interests include hunting, wildlife viewing, hiking, sightseeing, nature study, and photography. Other recreational uses include camping, backpacking, and visiting homesteads. An interagency watchable wildlife brochure exists which features the Bitter Creek watchable wildlife area, drawing tourists to this site.

This area is managed for sparse use which is appealing to individuals who value for example; 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.

Off-highway vehicle (OHV) use is restricted yearlong to the numbered roads only, while foot and horse travel carry

no restrictions. In order to reduce the spread of noxious weeds, 96 hours before entering BLM public lands, animals should be fed only food that is certified weed free.

## **Grazing**

Six ranchers use the Bitter Creek WSA for cattle operations. Allotment management plans are prescribed for the ranchers which consists of rest-rotation or deferred-rotation grazing. Cattle graze in the area from April 1 through November 15.

## **Non Energy Minerals**

There is no nonenergy mineral production within the analysis area. However, the area does have varying potential for bentonite, uranium, geothermal energy, and sand and gravel. The following probabilities and classifications for potential mineral resources were provided, by contract, by Tetra Tech Incorporated in 1983: bentonite was given a moderate probability (while bentonite could occur on approximately 55,950 acres, there are no identified deposits and no indication of economic interest); sand and gravel was given a low probability; uranium was given a low probability; and geothermal energy sources were given a low probability. There are no active mining claims or mineral leases within the WSA.

## **Energy Minerals**

There is a high occurrence and moderate development potential for oil and gas development. Presently, there is no production on any lands in the analysis area. All BLM public lands in the WSA are closed to leasing until Congress makes a decision on the wilderness/non wilderness status of the Bitter Creek WSA. A lease on state lands bordered by units of the WSA has expired.

Natural gas production in Valley County is exclusively gas from the Bowdoin Dome Area which consists of shallow, low pressure reservoirs of Cretaceous and older age. The average depth of production is about 1,500 feet. In addition to these existing producing fields, Valley County contains an area which is considered high potential for exploration.

The Bitter Creek area is at the western edge of the Williston Basin geologic province. The Williston Basin contains structural deformation features in the form of anticlinal and synclinal folds which act as structural traps to the migration of hydrocarbons. It is these features that are of interest to the oil and gas industry for possible exploration and development. The sedimentary rocks are relatively narrow in thickness (7,000-9,000 feet) in the Basin before the crystalline basement rock (non-sedimentary rock and very unlikely to contain hydrocarbons) is encountered. Leasing

and development in the Basin has produced prolific amounts of oil and gas in eastern Montana and western North Dakota.

The Bowdoin Dome gas field, 16 miles southwest is the nearest hydrocarbon production. Lustre Oil Field, located 35 miles to the southeast, is the nearest Williston Basin oil production.

## **Land Authorizations**

Northern Border Pipeline Company has a 4-1/2 mile long right-of-way for an underground gas pipeline in the ACEC area. There are no other right-of-ways within the ACEC area.

## **Economic and Social**

The area is rural, sparsely populated, with an agricultural based lifestyle. Valley County's population was 8,239 in 1990, a 20% decrease from 1980. In recent years the population of Valley County has increased with an estimated 1995 population of 8,462, a 3% increase since 1990. The population of Valley County is expected to continue to slowly increase. The economy of Valley County is based on the natural resources in the areas. These resources include the land, which is used for crop and livestock production, and water and wildlife that offer outdoor recreation activities. Most of the county's employment and personal income is derived from these natural resources. Agriculture, services, and government are the main sources of employment in Valley County.

BLM public lands contribute to the local economy through livestock forage and dispersed recreation. In addition public lands are valued for their environmental resources, recreational opportunities, cultural resources, and in an increasingly urban world, the vast open space.

## **MOUNTAIN PLOVER**

The Mountain Plover area is located in south Valley County, Montana. The eastern corner of the area is approximately 20 miles west-southwest of Glasgow, Montana, in the Milk River Basin.

## **Soils**

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. This complex 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. (Soil Survey of Valley County, Montana)

## Vegetation

The major upland vegetation types that occur in this area include the Grass, Big Sagebrush/grass, and Saltbush types. These vegetation types are described in the Judith-Valley-Phillips RMP. Clubmoss does not cover any appreciable amount of land in this area. The Saltbush type is the important one for this analysis, so a short summary of this type is; Nuttall's saltbush is the dominant plant on broad alluvial valleys associated with sedimentary badlands (see figure 4). Associated grass species include Sandberg bluegrass and western wheatgrass (see figure 5). Important forbs include prickly pear, wild onion, and wild parsley. Greasewood is often associated as a fringe type.

Mountain plovers were found to 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 (see figure 6), low rises in the bottom lands containing almost pure stands of blue grama, and shale soils with western wheatgrass. This latter habitat was found on the ridge sides among the horizontal juniper habitat. (FaunaWest, 1994)

Other similar appearing areas of vegetation (or lack of vegetation) are elsewhere in south Valley County and also in north Valley County, but not as extensive. Surveys have been conducted at various times during the last few years, but mountain plovers have not been observed on any other BLM public lands in Valley County.

## Water Resources

This potential 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. Little Beaver Creek is in functional-at risk status with a static trend. Grub Reservoir is the only large waterbody and covers 250 acres.

## Special Status Species

Special status species (a BLM designation) include the following; (1) proposed species - species that have been officially proposed for listing as threatened or endangered by the Secretary of the Interior, (2) T/E species - species officially listed as threatened or endangered by the Secretary of the Interior under the provisions of the Endangered Species Act, (3) candidate species - species designated as candidates for listing as threatened or endangered by the Fish and Wildlife Service, (4) sensitive species - species designated by a State Director as sensitive.

No proposed, candidate, threatened, or endangered plant species are found in this area. The only plant on the BLM watch list found in Valley county is Bractless *Mentzelia* (*Mentzelia nuda*), and it has been found in the far eastern part of the county, next to Missouri River. It is not located in the Mountain Plover area.

The area provides habitat for a proposed T/E wildlife species. The proposed threatened species that uses the area at some time during the year is the Mountain plover.

Historical and potential habitat for five species of wildlife which are federally classified as endangered or threatened occur within the Judith-Valley-Phillips planning area. These species are the bald eagle, black-footed ferret, gray wolf, least tern, and piping plover. Bald eagles could migrate through the area, but they would not stay for a lengthy period of time or to nest in the area. There is no black footed ferret habitat in this area, and no ferret sightings have been made. No sightings of gray wolves have been reported. The remaining 2 species, least tern and piping plover, would not be expected to be found in the area.

The area does not provide any habitat for candidate wildlife species. The area provides habitat for BLM designated sensitive species. The sensitive species that could use the area at some time during the year are: Peregrine falcon, Ferruginous hawk, Loggerhead shrike, Long-billed curlew, Swainson's hawk, and Burrowing owl.

## Wildlife

Game species include mule deer, pronghorn antelope, and sage grouse. There are numerous nongame species. No black-tailed prairie dog towns are in the vicinity of the areas. The closest complex of larger towns is approximately 20 miles to the southwest. There is a small town on state land about 10 miles east. Plovers are typically associated with prairie dog towns greater than 50 acres.

The knowledge about mountain plover locations and habitat in the area received an early assistance due to bentonite mining activities. Biologists in the late 1970's and early 1980's checked out areas that could be mined for bentonite and documented the presence of plovers.

Historical and potential habitat for 6 species of wildlife which are federally classified as endangered or threatened occur within the Judith-Valley-Phillips planning area. These species are the bald eagle, Peregrine falcon, black-footed ferret, gray wolf, least tern, and piping plover. Bald eagles and Peregrine falcons could migrate through the area, but they would not stay for a lengthy period of time or to nest in the area. The remaining 4 species would not be expected to be found in the area for any length of time. The mountain plover is a candidate for listing as either threatened and endangered. This potential ACEC was nominated for the mountain plover so considerable discussion about this bird will follow.

The mountain plover is a member of the group of birds called shorebirds that are usually found along the edges of water areas. It is an unusual shorebird since it spends its entire life away from water. The mountain plover is a Great Plains native that breeds on the arid shortgrass prairie from southeastern Alberta and southwestern Saskatchewan (NRCan, 1997) to southern New Mexico and winters in California, Texas, and Mexico. Since 1837, it has been found in 23 states, Canada, and Mexico. The number of mountain plovers has declined drastically in the last century. About 1900, it was abundant and was heavily market hunted in California and probably throughout its range. As early as 1914, plover numbers were reported to be declining. (Nebraska, 1997) During the past century, the conversion of native prairies to croplands has significantly reduced the availability of suitable habitats for this species, producing a significant decline in the continental population.

Current distribution maps are misleading, showing plovers occurring over a large range. In reality, habitat within this range is limited. Nearly half of the remaining breeding population is found in Weld County, Colorado and Phillips County, Montana, with a very local distribution elsewhere in its range (Andrews and Righter, 1992). They tend to be

poorly sampled by roadside surveys such as the Breeding Bird Survey (BBS) where they are recorded in very small numbers from New Mexico to Wyoming. The survey-wide indices are variable but with a declining tendency. (BRD, 1995) The BBS routes in Montana do not cover areas with mountain plovers. No quantitative monitoring information from BBS is available for Montana.

The mountain plover was designated endangered in 1987 in Canada, (NRCan, 1997) a species of special interest or concern in Montana and Oklahoma, extirpated in North Dakota and South Dakota, on the watch list in Kansas and threatened in Nebraska. (Nebraska, 1997) The U.S. Fish and Wildlife Service is considering listing the mountain plover as threatened throughout its range.

The mountain plover looks much like a pale version of the more common killdeer, but without chest stripes. The head, back, wings and portions of the upper breast are a pale, sandy brown. The neck and underparts are white. The front of the crown is capped with black, and a black stripe extends from the base of the beak to the eye. The dark bands contrast sharply with the brilliant white forehead and throat. In flight, the best field marks are a thin white wing stripe and black tail band fringed with a white border. Males and females are similar in size and color. (Nebraska, 1997)

The mountain plover is generally considered an inhabitant of the arid shortgrass prairie, which is dominated by blue grama and buffalo grass with scattered clumps of cacti and forbs. Mountain plovers are very selective in choosing nest sites, preferring expansive, arid flats (under 5%) with very short vegetation (under 4 inches) and a high proportion of bare ground (a minimum of 30% bare ground). In parts of its breeding range the mountain plover selectively nests in prairie dog towns. (Nebraska 1997) Intensive grazing is beneficial for Mountain Plovers, and they also regularly occupy prairie dog towns (Knowles et al. 1982). Also mountain plovers breed in semidesert sites within, and west of, the shortgrass prairie. These sites are mostly bare ground with scattered short forms of the genera saltbush (*Atriplex*) or sagebrush (*Artemisia*) (Wallis and Wershler, 1981, Parrish, 1988, Day, 1994), prickly pear (*Opuntia*), and Spanish-bayonet (*Yucca*) (Coues, 1874).

Mountain plovers arrive on the breeding grounds in small flocks. They are somewhat colonial during the breeding season, and may shift their breeding areas from year to year. Males commonly reoccupy their former territories, which they defend against intrusion by other males. Mountain plovers are solitary nesters. The nest consists of a shallow depression in the ground lined with a small amount of materials found nearby. (Nebraska, 1997) Nests are often near prominent objects (rocks, cow manure piles)

to make the plovers less conspicuous to predators. (Knopf and Miller, 1994).

Mountain plovers usually lay three well-camouflaged eggs, brownish gray in color and are spotted or blotched with blackish brown. Only one adult attends the nest, rotating the eggs and shading them on hot days during the 29-day incubation. The brown-speckled chicks reach adult size 35 days after hatching. (Nebraska, 1997)

Chicks can run and capture their own food soon after hatching. Two to five days after the eggs hatch, adults may move the brood as far as half a mile to a mile and a half, then remain in that area until the chicks are fledged. One of the biggest problems for chicks is exposure to the prairie's hot afternoon sun. Shade is scarce on the prairie, and chicks seek shade under tall vegetation or in the shadows cast by livestock watering tanks, fence posts, telephone poles and adult plovers. Many eggs and chicks do not survive. Eggs are lost primarily to predation and hail damage, while chick mortality is primarily the result of predation. Predators include prairie falcons, ferruginous hawks, golden eagles, loggerhead shrikes, swift foxes and ground squirrels. (Nebraska, 1997)

Mountain plovers feed primarily on insects, especially spiders, beetles, grasshoppers, crickets and ants. The type of prey consumed changes throughout the season with beetles most common from late spring to midsummer and grasshoppers and ants eaten in greater quantities in late summer. (Nebraska, 1997) Grasshoppers are a primary food item in Montana. All food items are consumed immediately. All water requirements are obtained from food items (Knopf, 1996) Mountain plovers will forage on slopes and ridges. Adults with young have been observed in tall vegetation and around livestock watering facilities, which probably provide an abundance of insects. Adults also use plowed fields.

When using areas around cattle watering tanks, Mountain Plovers prefer ones that have a dry surface and often move broods there to forage. Tanks with seepage usually are frequented by Killdeers. Mountain plovers are rarely seen with Killdeers. (Graul, 1973).

Little information describing mountain plover migration is available. USGS Patuxent Wildlife Research Center shows in the table *Bird Banding and Recovery Data (Non-Game Banding Records 1955 - 1997)* of all the birds banded (1,498) only four birds have been recovered. (Patuxent, 1998)

Fall flocking begins as early as July, with birds leaving the breeding grounds by early September and arriving on the

wintering grounds in early November. They depart from the wintering grounds in mid-March and arrive on breeding grounds in late April to early May.

When approached, a mountain plover is more likely to crouch or walk away than to fly. If disturbed, a bird may move a few steps then stop abruptly, standing silent and motionless. When forced to fly, it rises rapidly with quick wing beats flying low over the ground. (Nebraska, 1997) Breeding Mountain Plovers are relatively inconspicuous and easily overlooked. They tend to be poorly sampled by roadside surveys such as the Breeding Bird Survey where they are recorded in very small numbers from New Mexico to Wyoming. (BRD, 1995)

## **Cultural Resources**

Numerous cultural inventories have been conducted in south Valley County on behalf of development projects. These inventories have resulted in the discovery of numerous cultural sites. These are generally small prehistoric sites consisting of stone tools, remnants of fire pits or hearths and stone cairns. Also abundant in this area are stone circles, outlining where tepees - the hide covered lodges of the plains once stood. The area also contains cultural features associated with farming and raising livestock.

## **Recreation**

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.

## **Grazing**

The area is permitted for livestock grazing. All of the allotments are managed under allotment management plans. They prescribe rest-rotation or deferred-rotation grazing. Cattle are grazed in one allotment or another from April 1 through November 15. The hardpan areas preferred by the plover are primary grazing areas for cattle due to the nearly level terrain near Little Beaver Creek. There are six grazing allotments which are partially within the ACEC area.

In the past, domestic sheep were grazed yearlong in this section of the county. Cattle and horses also grazed in the area. During periods of low precipitation the competition for forage was intense, so some years the vegetation was short in height due to grazing and lack of growth.

## **Minerals**

Extensive bentonite mining occurred in the area in the late 1970's and early 1980's, including the construction of a processing plant on private land. The majority of the bentonite pit sites have been on rises just off of the hardpan areas. Occasionally small amounts of bentonite are trucked out of the existing pits at this time. A mine was active in the western most portion of the Mountain Plover ACEC through 1985. Final abandonment was approved for the reclaimed mine site in 1995. A photo of a reclaimed bentonite mine site is shown in figure 7. Mountain plovers have been observed on these reclaimed sites.

There are currently 169 mining claims located on BLM public lands in and around the reclaimed area of the past mining activity. Twenty two of these claims are located inside the northwest boundary of the ACEC. There is potential for mining to occur on some of these lands in the future. Currently Core Home Corporation has filed a 3809 Notice to develop a small surface mine on 4 acres of federal land adjacent to the ACEC in Section 11, T. 27 N., R. 36 E.

There are no mineral material contracts in the area.

There is a moderate occurrence and development potential for oil and gas. Geophysical exploration for oil and gas occurred in the 1960's and an exploratory well was drilled in the early 1990's near Hurricane Reservoir, on the western edge of the nominated area. The well was a nonproducer. There are no currently active federal oil and gas leases in the area. There is the likelihood of exploratory drilling in the future. Past exploration in southern Valley County has involved drilling on exploratory units which range in size from 6 to 25 thousand acres in size (BLM, 1992).

## **Land Authorizations**

There are no rights-of-way or other special use permits issued in this area. BLM is required to provide reasonable access for the use and enjoyment of private and state lands surrounded by BLM public lands.

## **Economic and Social**

See the Bitter Creek section.

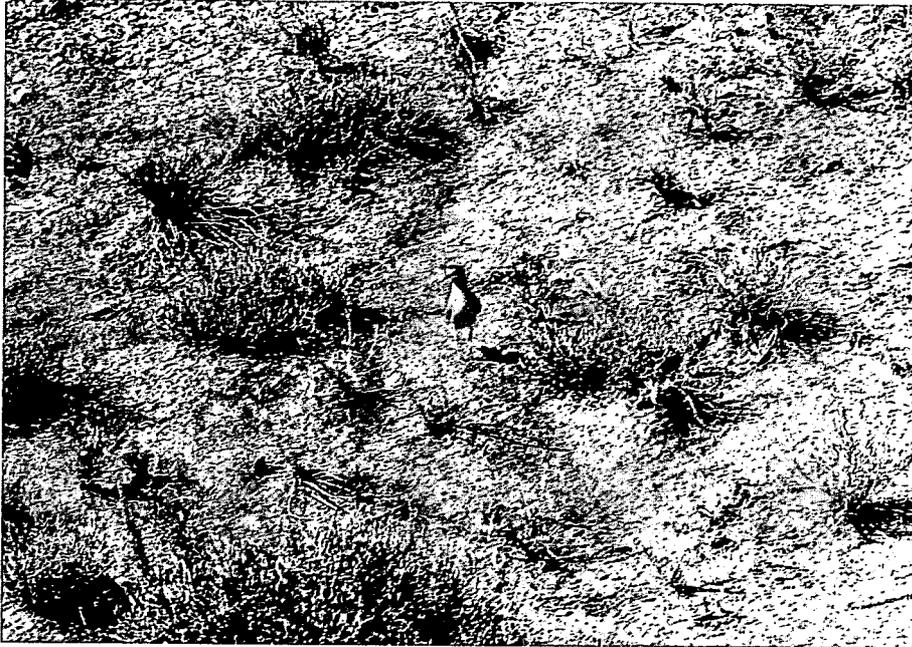


Figure 4 - Saltbush and Hardpan

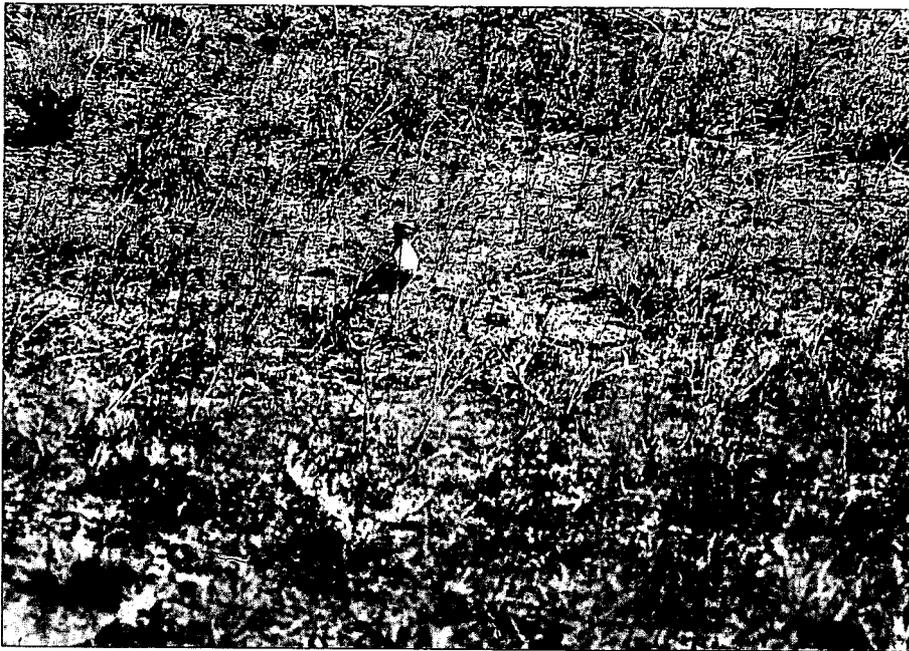


Figure 5 - Western Wheatgrass and Saltbush

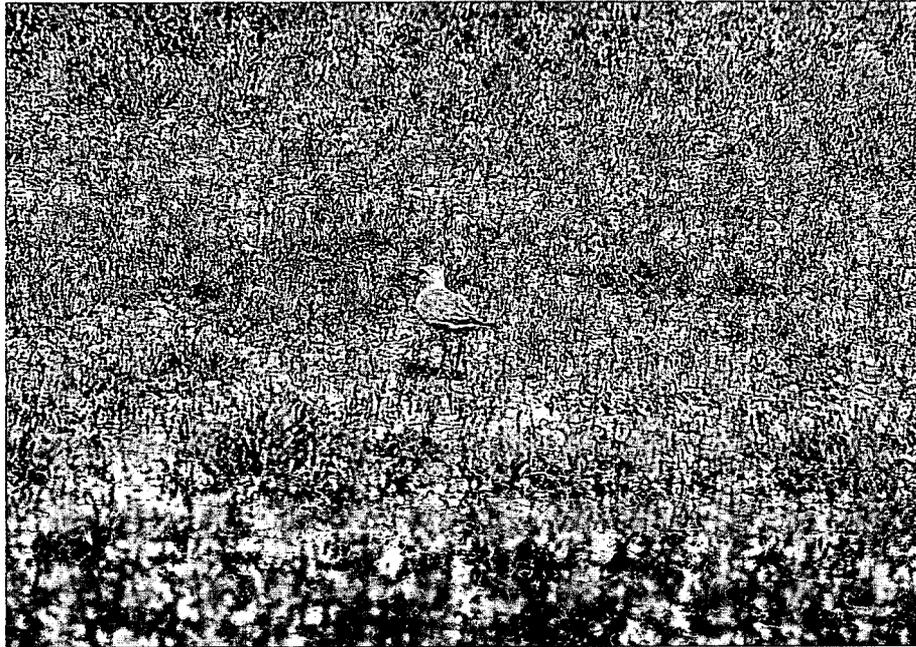


Figure 6 - Knotweed and Saltbush

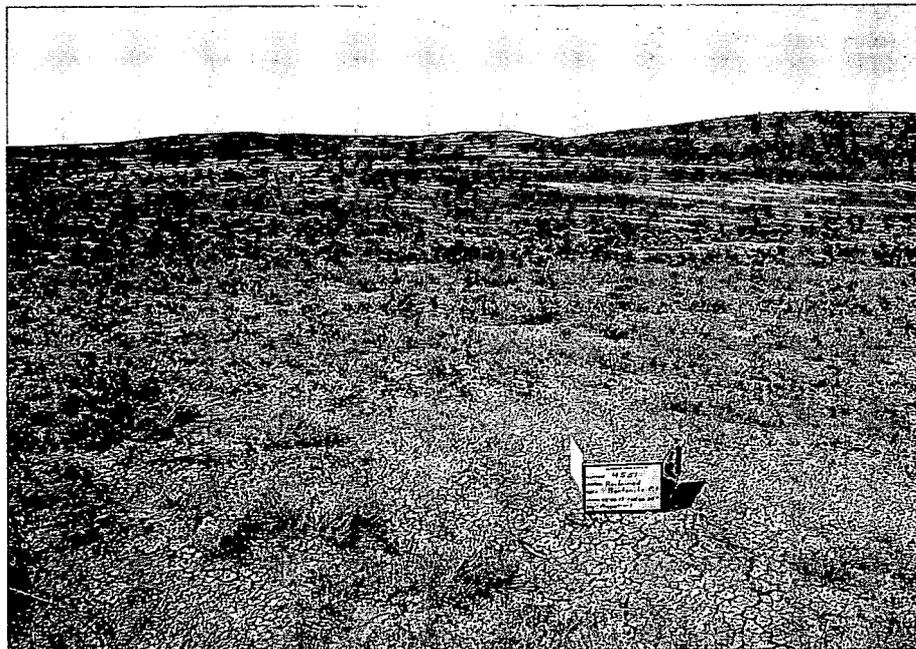


Figure 7 - Reclaimed Bentonite Mining Site



# CHAPTER 4

## ENVIRONMENTAL CONSEQUENCES

The BLM will comply with applicable laws, regulations, and policies in the implementation of this plan. The management actions will be carried out if adequate personnel and funding are available. There are no impacts to soils, water or cultural resources from any of the alternatives.

### BITTER CREEK

#### Alternative A - Current Management

The area is currently managed as a Wilderness Study Area under the current Interim Management Policy (IMP). If the United States Congress decides that the Bitter Creek WSA should not be designated a Wilderness Area, then the area will be managed under the guidelines of the Judith-Valley-Phillips (JVP) Resource Management Plan.

The impacts from activities that will occur in either case are summarized below from the Judith-Valley-Phillips RMP and Bitter Creek EIS.

Fire Management: For implementation of this alternative under either the IMP or the JVP, burning could be done to support natural and necessary processes of the ecosystem to enhance the native plant community. Burning would have no long term impacts on the grassland plant community. There would be longer impacts if the limited silver sagebrush plant communities were burnt. Silver sagebrush would resprout after the fires.

Land Treatments: Conducting land treatments would be restricted under the IMP. If released from wilderness study status, vegetative manipulation, including burning or chisel plowing of clubmoss areas could be done to promote rangeland health. However, since the uplands in the Bitter Creek area are meeting the standards for rangeland health, it is unlikely that any extensive land treatments would occur. If treatments were done, they would result in enhancement of the productivity of native species and advance the seral status of the native plant communities affected. Chisel plowing would leave the surface of the ground rough for 10-20 years.

Noxious Weeds: The "minimum tool" concept is used in WSAs to evaluate what type of method to use to complete a task with the least impact on the WSA's wilderness attributes. Integrated Pest Management is defined as the

use of many different tools to control weeds. For example the use of biological, chemical, and mechanical weed control methods is being used in the area north of Hinsdale, including the Bitter Creek WSA. If released from wilderness study status, noxious weed control would be the same as the adjacent lands, which is Integrated Pest Management.

Riparian Management: Construction of fences to create riparian pastures is more restricted under the IMP than the JVP. However, since the riparian areas in the Bitter Creek area are meeting the standards for rangeland health, it is unlikely that any extensive construction activities could occur.

Special Status Species: Management under this alternative either using the IMP or JVP guidance would not negatively affect any T/E, proposed T/E, candidate, or sensitive plant or animal species. Special status species are priorities for management. There are no special status plants or proposed T/E animal species in the area, therefore there would not be any effects by this alternative. The management guidance in the JVP provides the necessary habitats and/or protection for T/E species, candidate species, and sensitive species.

Wildlife and Fisheries Management: Constructing waterfowl reservoirs or fishing reservoirs are restricted under the IMP reducing improvements to those resources. There is no change to the WSA status from wildlife and fisheries management under the current management alternative. If released from wilderness study status, reservoirs could be constructed for waterfowl habitat or fisheries. Since the area is not prime waterfowl habitat and very remote for fishing opportunities, it is expected that limited water development would be done for wildlife habitat enhancement.

Recreation: Under the IMP, this area is managed similarly to the semi-primitive nonmotorized category of the Recreation Opportunity Spectrum. This would decrease the recreation opportunities for those people seeking a motorized trail riding experience. If released from wilderness study status, there is the potential to manage these lands for development. This could result in a loss of naturalness through vegetation manipulation and building of structures and roads. This could alter the present character of this area and decrease the recreation opportunities for those people seeking a semi-primitive or wilderness experience.

Off-Highway Vehicles: Under the IMP, travel is limited to numbered roads only with no off road travel allowed. Game retrieval is limited to horses or by foot. If released from wilderness study status the area would be open to cross-country travel except during the hunting season. This could result (low potential) in off road travel and creation of new trails in the area.

Grazing: Implementation of this alternative would not change the current grazing management, under the IMP. Any changes to that management or additions of new range improvements are severely constrained. If released from wilderness study status, range facilities such as crossfences and additional water developments could be constructed to manage grazing.

Oil and Gas: Under the IMP, the area is not available for oil and gas leasing and exploration or development. This could reduce revenues to the US Treasury. There could be potential impacts related to oil and gas development. If released from wilderness study status, the area would be open to oil and gas leasing. Oil and gas development has the potential to alter the environment in the Bitter Creek area to the degree that the values that have qualified the area as a potential ACEC would be lost. There is a moderate potential for development of natural gas or oil in the area. A major field discovery would severely impact the naturalness of the area, affecting the visual resource and the visitor's experience in general. Wildlife habitat and natural vegetation would be impacted to a minor degree. Big game wildlife security would be affected severely by the network of service roads that could be required and increase in human activity. This impact would last the life of any field, possibly 50 or more years.

Minerals: WSAs are open to location under the mining laws until Congress determines the future status of the land. Under the IMP, the area is not available for mineral leasing. If released from wilderness study status, the area would be open to mineral leasing. There is a low probability of development, no expected impact.

Land Authorizations: Under the IMP, there are no new authorizations and no impact. If released from wilderness study status, the area would be open to land authorizations. There is a low potential for environmental impact due to reclamation standards for rights-of-way and other land authorizations.

## **Alternative B - ACEC Designation (Preferred)**

An environmental assessment would be completed in the future to analyze the ACEC management plan if Congress

releases Bitter Creek from wilderness study status. Under the ACEC designation, the impacts would be the same as under the IMP described in Alternative A, until an ACEC management plan is completed.

## **MOUNTAIN PLOVER**

### **Alternative A - Current Management**

The area would not be designated an ACEC and would be managed consistent with the existing guidance from the Judith-Valley-Phillips RMP.

Land Treatments/Noxious Weed Control: Implementation of the current management alternative would restrict the land treatments that could be applied. Any projects proposed on mountain plover habitat would be evaluated and recommended to not be implemented, if there would be effects on plovers. No chemical spraying or other control methods for noxious weeds or insects occurs in the area presently and none is anticipated. Controlling the location of the land treatments or applying mitigation measures would eliminate any potential effects to the preferred plover habitat. No effect on mountain plovers would be expected.

Fire Management: Implementation of this alternative would consider burning grasslands to improve habitat. Any prescribed burning would be conducted during a time when there would be no effect on plovers. No restrictions would be placed on locating wild fire control activities.

Riparian Management: Projects to improve riparian conditions may be needed, for example construction of fences to create riparian pastures would be completed after evaluating their effect on mountain plovers and determining no loss of bare ground. Riparian goals and mountain plover habitat treated equally.

Special Status Species: This alternative would not negatively affect any T/E, proposed T/E, candidate, or sensitive plant or animal species. Special status species are priorities for management. There are no special status plant species in the area, therefore there would not be any effects by this alternative. The management guidance in the JVP provides the necessary habitats and/or protection for T/E species, candidate species, and sensitive species. The proposed threatened specie, mountain plover, was not discussed in the JVP. The present plover habitat would be maintained, therefore there would be no effect.

Wildlife and Fisheries Management: Implementation of this alternative would restrict waterfowl projects by

limiting areas where shallow reservoirs could be built. No effect on mountain plovers would be expected, since priority would be given to mountain plover.

**Recreation:** Implementation of this alternative would not affect current recreation patterns. Dispersed recreation opportunities exist with this area being used primarily for hunting and OHV travel. The primary season of use would remain September 1 through December 1. The benefits associated with the existing recreation opportunities is it boosts the local economy during the primary season of use.

The BLM public land in this area would remain open to off-road motorized travel yearlong. Outside of hunting season, this area has a small amount of off-road travel. Considering this small amount of off-road travel on the hardpan area the potential disturbance impacts would be minor, due to the very short time needed to cross a piece of hardpan an incubating mountain plover would not be kept off a nest for too long of a time, but a nest could be run over. The likelihood for this to occur would be slight.

**Grazing:** Implementation of this alternative would not change the current activities. Grazing of livestock would not have any effects on mountain plovers. Livestock would have a positive effect by grazing the vegetation to a shorter height. Construction of range improvements could have a small disturbance effect on plovers if constructed during the nesting period. Native vegetation would be maintained.

**Energy Mineral Resources:** With current management alternative BLM would protect the surface resource values on all lands leased for oil and gas with the standard stipulations and lease terms. The lease terms of delaying an activity 60 days or moving an activity 200 meters (656 feet) would lessen any potential impacts on mountain plovers, but not entirely eliminate all impacts. The nesting period is greater than 60 days and the hardpan areas are wider than 656 feet. The standard stipulation would be applied to the mountain plover habitat area and all other leased lands. The standard stipulation includes provisions for special areas, such as for mountain plover habitat. One special area listed is "1/4 mile from identified essential habitat of state and federal sensitive species." Any surface use or occupancy within such special areas will be strictly controlled, or if absolutely necessary, excluded. Use or occupancy will be restricted only when the BLM demonstrates the restriction necessary for the protection of such special areas and existing or planned uses. Identification of the essential habitat and the resulting restrictions would be furnished to the lessee after being advised of a specific proposed surface use or occupancy on the leased lands.

The standard stipulation also says the BLM is responsible for assuring that the leased land is examined prior to

undertaking any surface-disturbing activities to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats. At the present time, the mountain plover is not listed as an endangered or threatened species, but has been proposed to be listed as a threatened species. The proposed rule is in the Federal Register dated February 16, 1999. If the mountain plover is not listed this part of the standard stipulation would not apply.

Under the draft Judith-Valley-Phillips Oil and Gas Supplemental RMP/EIS (BLM, 1998) the lease terms would still apply and a new stipulation would replace the standard stipulations. The hardpan area (the primary habitat area) would have a special timing stipulation. The stipulation is; surface use is prohibited from April 1 to July 31 within 1/4 mile of occupied nesting habitat for mountain plovers. The time periods may be made less restrictive depending upon the actual on-the-ground conditions. This stipulation would eliminate potential impacts during the nesting period due to the drilling of any oil or gas well. This new stipulation does not apply to the operation and maintenance of production facilities.

Before geophysical exploration a notice would be given to the Glasgow Field Station, showing the location of the activity and access routes, anticipated surface disturbance, and time frames for operations. Before the activity is allowed to proceed the office ensures that the operator is bonded and that any necessary mitigation measures are conveyed to the operator. Considering the very short time needed to cross the hardpan area the potential impacts would be short term, but a nest could be run over or an incubating adult kept off a nest for too long of a time. The likelihood for this to occur would be slight.

**Non-Energy Mineral Resources:** Implementation of this alternative would not change current activities. All federal minerals are available for exploration and development. This area was once the bottom of an inland sea, which covered the area with sediments burying any rock layers deeply. The development of hardrock mining is not expected, so impacts to mountain plovers are not expected.

**Bentonite:** Implementation of the current management alternative would be BLM would allow exploration and development of bentonite resources while preventing unnecessary or undue degradation of nonmineral resources. The phrase unnecessary or undue degradation is defined as surface disturbance greater than what would

normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operation of similar character and taking into consideration the effects of operation on other resource and land uses, including those resources and uses outside the area of operations. An approved plan of operations would not be required for operations of less than five acres. Impacts to mountain plovers would occur if bentonite activities, such as topsoil removal and access road construction occurred during nesting either driving over nests or causing nest abandonment. Habitat would be reduced slightly until reclamation was complete.

Land Authorizations: Implementation of this alternative would that rights-of-way would be considered on a case-by-case basis with appropriate stipulations. Some activities could be restricted. No effect on plovers is expected with stipulations added to control time of use and the area needed.

### **Alternative B - ACEC Designation (Preferred)**

The Mountain Plover area would be designated an ACEC and would be managed consistent with the guidance from the Judith-Valley-Phillips RMP as modified by the management prescriptions of this alternative. The consequences of this alternative would be the same as Alternative A plus other consequences as explained below.

Land Treatments/Noxious Weed Control: Implementation of the ACEC alternative would restrict the land treatments that could be applied, and surface disturbing activities would be limited seasonally. Any projects proposed on mountain plover habitat would be evaluated and not done, if there would be effects on plovers. No impacts to plovers are anticipated to occur, since controlling the location of the treatment or applying mitigation measures would eliminate any potential effects to the preferred plover habitat. The containment/eradication of noxious plants would focus primarily on treatment in the fall and/or aerial spraying. The use of insecticides would not be allowed. No effect on mountain plovers would occur due to the restrictions on spraying or other control methods for noxious weeds or insects. The food source for the plovers would be unchanged without the use of insecticides.

Fire Management: Implementation of this alternative would be that burning could be conducted to improve habitat. Requests for prescribed burning in appropriate areas would be a higher priority. Any prescribed burning would be conducted during a time when there would be no negative effect on plovers. The ACEC area could not be used as a fire staging area April 1 - July 31.

Riparian Management: Little Beaver Creek is the main stream in the nominated area. It is classified as functional-at-risk with a static trend. Construction of fences to create riparian pastures could be completed after evaluating their effect on mountain plovers. Grazing management to improve riparian conditions must consider effects on plover habitat. Some projects may not be constructed at all. Managing grazing to maintain bare soils on the uplands of the primary habitat could slow the rate of improvement to the riparian areas.

Special Status Species: This alternative would not negatively affect any T/E, proposed T/E, candidate, or sensitive plant or animal species. The mountain plover, a proposed threatened species would be positively affected. The special management activities of the ACEC enhance the habitat for mountain plovers. The chance for any potential disturbance of nesting birds is reduced or eliminated.

Wildlife and Fisheries Management: Implementation of this alternative would be the same as the current situation. No effect on mountain plovers would be expected, since priority would be given to mountain plover.

Recreation: Implementation of this alternative would restrict vehicle travel by recreationists. OHV travel would be limited April 1 - July 31 in the designated area, there would be minimal affect since nearly all recreation use occurs during the hunting season (9/1 - 12/1). A watchable wildlife area could be established thereby offering a range of values to society as a whole, as well as specific economic benefits to the local community. ACEC designation for the mountain plover may attract visitors during months that typically are considered off season and can attract a wider-range of people with multiple interests to Valley County. Without off-road travel on the hardpan area the possibility of disturbance and nest destruction impacts would be eliminated. New roads would be designed to avoid the preferred plover habitat. Rerouting sections of existing roads would have a long term effect on plover habitat by reducing erosion on the hard pan.

Grazing: There would be no effect on grazing permittees or livestock by designating this an ACEC. The grazing of livestock would not have any negative effects on mountain plovers. Livestock would continue to have a positive effect by grazing the vegetation to a shorter height. Construction of range and wildlife improvements would not effect mountain plovers by building the improvements outside of the nesting period. This could require an adjustment in construction schedules.

Energy Mineral Resources: Implementation of this alternative would not eliminate any BLM public lands

from leasing, but could require adjustments in scheduling. With an ACEC designation the BLM would place additional restrictions on the lessee/operator's plans in order to eliminate possible effects on mountain plovers. Timing restrictions would be placed on geophysical exploration, drilling, and the operation and maintenance of production facilities. The stipulation would eliminate potential disturbance and nest destruction impacts during nesting season.

The operation of a well could effect mountain plovers, if an operation and maintenance activity occurred after egg incubation had been initiated on a nest close to a well site, access road, or production facilities and the nest was abandoned. The duration and extent of the operation and maintenance activity would determine how much disturbance it would proportionally create. The ACEC would require increased coordination with the BLM and possibly increase operating expenses by the lessee/operator.

Non-Energy Mineral Resources: Implementation of this alternative would be the same as the current situation. All federal minerals are available for exploration and development. This area was once the bottom of an inland sea, which covered the area with sediments burying any rock layers deeply. The development of hardrock mining is not expected, so impacts to mountain plovers are not expected.

Bentonite: Implementation of this alternative would require increased coordination with the BLM and possibly increase operating expenses by the bentonite miners. All BLM public lands would be open to bentonite mining activities. The BLM would allow the exploration and development of bentonite resources during times when the plovers are not nesting, eliminating potential impacts. There could be a inconsequential amount of habitat that would be unusable while the pit is open. This would be short term and temporary since reclamation would be required to be initiated after excavation is completed, and the surface area of the pit would be controlled. An approved plan of operations would be required for all operations (except for casual use). Seasonal restrictions would not impact bentonite mining operations significantly since most of the claims are outside the ACEC area so operations could be planned to run continuously. The claims inside the ACEC boundary are predominately on the secondary habitat.

Land Authorizations: Implementation and consequences of the ACEC alternative would be identical to the first alternative. No effect on plovers is expected with stipulations added to control time of use and the area needed for ROW grants.



# CHAPTER 5

## CONSULTATION AND COORDINATION

Consultation and coordination has been an important part of this ACEC resource management plan amendment. An open house, informational letter, contacts with other governmental agencies, and the public were used to gather input for this plan amendment. This input helped define what issues needed to be addressed and what issues were previously resolved with current management guidelines.

The BLM invited the public to comment on the draft amendment/EA. A notice of availability for the draft amendment/EA was published in the Federal Register and in local newspapers.

### PUBLIC INVOLVEMENT

A Notice of Intent, formally announcing the beginning of the planning process, was published in the Federal Register on April 17, 1998. The public has been informed of and involved in the planning process through the Federal Register Notice, news release, direct mailing, and an open house.

Public participation activities are listed chronologically in Table 5.1. Complete records of public comments and involvement are on file in the Glasgow Field Station, Glasgow, Montana.

### CONSISTENCY

The BLM's planning regulations require that resource management plans be "consistent with officially approved or adopted resource related plans 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 law, and regulations applicable to public lands...".

All Federal, state, local, and tribal councils are requested to review this document for inconsistencies with their plans and inform the BLM of any inconsistencies.

#### Endangered Species Act

The BLM manual directs the responsible manager to comply with the Endangered Species Act of 1973, which requires consultation with the Fish and Wildlife Service if it is determined that any BLM action may affect a threatened or endangered species or its critical habitat.

The Endangered Species Act of 1973 consultation requirements are;

50 CFR §402.14(a) *Requirement for formal consultation.* Each Federal agency shall review its actions at the earliest possible time to determine whether any action may affect

**TABLE 5.1  
PUBLIC INVOLVEMENT**

Date	Action
April 17, 1998	Notice of Intent to prepare an amendment/EA for the Bitter Creek and Mountain Plover potential ACECs.
June 23, 1998	A letter was sent to a mailing list of interested parties, agencies, organizations, and individuals.
June 23, 1998	A news release was issued about the two potential ACECs and an open house.
July 21, 1998	An open house to identify issues was held in Glasgow.
February 2000	Draft Bitter Creek and Mountain Plover ACEC Plan Amendment/EA was sent to interested parties, agencies, organizations, and individuals.
March 17, 2000	Notice of Availability of a draft Bitter Creek and Mountain Plover ACEC Plan Amendment/EA.

listed species or critical habitat. If such a determination is made, formal consultation is required. . . .

50 CFR §402.01 Scope. . . . Biological assessments are required under section 7(c) of the Act if listed species or critical habitat may be present in the area affected by any major construction activity as defined in §404.02. . . .

50 CFR §402.02 Definitions. . . . *Major construction activity* is a construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act. . . .

50 CFR §402.02 Definitions. . . . *Biological assessment* refers to the information prepared by or under the direction of the Federal agency concerning listed and proposed species and designated and proposed critical habitat that may be present in the action area and the evaluation potential effects of the action on such species and habitats. . . .

BLM has determined through the biological assessment contained in this plan amendment/EA that the mountain plover, a candidate species, would not be adversely affected by continuing the current management or implementing the proposed action.

**DISTRIBUTION LIST**

**County Commissioners**

Phillips County Commissioners  
Valley County Commissioners

**State**

Department of Fish, Wildlife and Parks  
Department of Natural Resources and Conservation  
Governor’s Office

**Congressional**

Honorable Max Baucus  
Honorable Conrad Burns  
Honorable Rick Hill

**Federal**

Fish and Wildlife Service  
USGS Biological Resource Division

**Tribal Councils and Committees**

Fort Belknap Community Council  
Fort Belknap Reservation  
Fort Peck Tribal Water  
Fort Peck Tribes

**Organizations**

Badlands Cooperative State Grazing District  
Buggy Creek Cooperative State Grazing District  
Central Montana Wildlands Association  
Glasgow City/County Library  
Institute for Policy Research  
Montana Association of State Grazing Districts  
Montana Audubon  
Montana Public Lands Council  
Montana Wilderness Association  
National Wildlife Federation  
Public Lands Council  
Sierra Club  
Silver Dollar Grazing Association  
The Nature Conservancy of Montana  
The Wilderness Society  
Valley County Sportsman  
Wittmayer Grazing Association  
Wildlife Management Institution  
Yellowstone Valley Audubon Society

**Businesses**

Billings Gazette  
Boucher Ranch, Inc.  
Core Home Corporation  
Engstrom Ranch, Inc.  
Fauna West Wildlife Consultants  
First Community Bank  
Glasgow Courier  
Great Falls Tribune  
Judith River Farm  
KLTZ/KLAN Radio  
Luther Appraisal Services  
McIntyre Ranch, Inc.  
Williston Basin Interstate Pipeline

The draft amendment/EA was also mailed to an additional 40 individuals.

**LIST OF PREPARERS**

John Fahlgren, Assistant Field Manager, Glasgow Field Station  
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Stephen Klessens, Rangeland Management Specialist, Glasgow Field Station  
Jerry Majerus, Land Use Specialist, Lewistown Field Office  
Jim Mitchell, Geologist, Lewistown Field Office  
Mary Skordinsky, Outdoor Recreation Planner, Glasgow Field Station  
David Waller, Wildlife Management Biologist, Glasgow Field Station

## PUBLIC COMMENTS AND BLM RESPONSES

Comments on the draft Bitter Creek and Mountain Plover ACEC Plan Amendment/EA were received from 25 individuals and organizations. The comment letters are available for public review at the Glasgow Field Station office. Pertinent comments were extracted from the letters, and BLM prepared responses to those comments. Comments were split into categories based upon which potential ACEC were of concern. BC represents Bitter Creek, MP represents Mountain Plover, and CC is a combined comment. The following table lists the commenter and which comments are contained in their letter.

COMMENTS	COMMENT(S) CONTAINED IN THEIR LETTER
Montana Wilderness Association	BC - 1, BC - 2, BC - 3, BC - 4, BC - 5, BC - 6, MP - 1, MP - 2, MP - 3
Bill Cunningham	BC - 1, BC - 2, BC - 7, MP - 4
Valley County Commissioners	CC - , CC - 2, CC - 3, CC - 4
DNRC Trust Land Management Division	CC - 5, CC - 6, CC - 7, CC - 8, CC - 9, CC - 10
Larry L. Evans	BC - 2, BC - 6, MP - 5, CC - 1, BC 8
Sierra Club Northern Great Plains Region	BC - 1, MP - 6, MP - 7
Barbara Warner	MP - 5, BC - 6 BC - 9, BC - 1
James Phelps	CC - 1
Brian Parks, Kathy Kinzfohl	BC - 10, BC - 2, MP - 5, BC - 1, BC - 9, BC - 8
Marilynn Dinger	BC - 10, BC - 2, BC - 11, BC - 1, BC - 8
Predator Conservation Alliance	MP - 6, MP - 7, MP - 8
Derek Ponsette	BC - 10, BC - 1, BC - 11
Dave Colavito	BC - 1, BC - 7, BC - 8
Bob Einhaus	BC - 2, BC - 10, BC - 1
Montana Audubon	BC - 10, MP - 7, BC - 7
Nevada Outdoor Recreation Association, Inc.	BC - 2, BC - 3, CC - 11, BC - 7, BC - 2, BC - 10, MP - 4
American Wildlands	BC - 2, BC - 9, BC - 7, BC - 11, BC - 12, BC - 1, BC - 8
Donald Marble	BC - 1, BC - 10
Jeannine and Tom Williams	CC - 1
Ambrose Tubbs, Inc.	BC - 1, BC - 11
Charlotte Trolinger	MP - 7, BC - 10, MP - 7, CC - 12
Paul Zallek	
Arlie J. Lane	CC - 1
Marv Hoffer	BC - 1, BC - 2, MP - 9, BC - 13, BC - 14
National Wildlife Federation	BC - 14, BC - 15

## COMMENTS ON ACECS AND RESPONSES

**BC - 01 - comments** - The originally nominated 350,000 acre area should be an ACEC. The boundary of Bitter Creek WSA does not contain all similar lands, the land doesn't change that much at the boundary. The entire area is in need of special management.

*Response* - BLM conducted a very intensive analysis of the "Mixed Grass Prairie (MGP) ACEC" nomination, including visits to similar areas in Montana, Wyoming, North Dakota, and South Dakota. In response to comments asking BLM to reconsider the original Mixed Grass Prairie Nomination, the 1998 Evaluation of Relevance and Importance document is included in this plan amendment/EA as Appendix B. That 1998 document explains the process, criteria, data, and rationale for determining that the Bitter Creek area only, and not the entire nomination area (the 350,000 acre area), meets the relevance and importance criteria. Copies of this Relevance and Importance analysis were provided to the nominating groups in 1998, and no comments were received from those groups at that time.

As noted by the comment, the land does not change dramatically at the WSA boundary. The MGP analysis team considered either expanding or reducing the area but found that the existing boundaries of roads and ownership defined the exemplary grassland area quite well. The fact that the WSA boundary is a legally established boundary which would aid future administration of an ACEC was also a consideration. The same boundary issue was discussed at length by the MGP team in considering the 350,000 acre nomination. The nomination boundary did not include all similar lands and was difficult to justify for that reason. For example, BLM public lands in the Buggy Creek and Canyon Creek watersheds south of the original nominated area are more outstanding than much of the rest of the nominated area, but were not included by the nominators. In addition, the BLM public lands in southern Valley County comprising an area of some 650,000 acres of grasslands, (the largest block of public land administered by BLM in Montana) were not included in the nomination. These south Valley lands are in more natural condition than the original nomination area as they do not have the agricultural inclusions.

To illustrate this point further, when the ACEC team considered the Mountain Plover ACEC nomination they found that all similar plover habitat was not included so the nomination area was enlarged from an estimated 9,600 acres to 24,730 acres. The team had many discussions considering using the same approach on the "Mixed Grass

Prairie" nomination. *In other words, if the entire nomination was worthy of ACEC designation, so was nearly all of the remainder of the BLM public lands in Valley County, for a total public land area of at least one million acres.* Even a unit of 1 million acres would not have a clear boundary, as similar lands in south Phillips County would then adjoin the area. It was felt that this approach would dilute the value and intent of an ACEC designation, which should more appropriately be applied to outstanding grassland areas, such as Bitter Creek.

**BC - 02 - comments** - BLM is downgrading Bitter Creek from a WSA to an ACEC, that may undermine future potential for wilderness designation and open the area for oil and gas exploration. Both Bitter Creek and the Mountain Plover ACEC area should continue as WSAs for ultimate designation as wilderness.

*Response* - The Mountain Plover area is not within a WSA. BLM is not proposing to "downgrade" Bitter Creek from a WSA to an ACEC, but to protect the area if it is released from WSA status by Congress. BLM does not have the authority to change a WSA to an ACEC. Only Congress has the authority to change WSA designations, either releasing it from WSA status or making it wilderness. BLM has the authority to designate ACECs.

Bitter Creek is a WSA that was not recommended for wilderness status. (Montana Statewide Wilderness Study Report, BLM, 1991). Factors affecting the wilderness quality identified in this report include 44 reservoirs, ten waterfowl nesting islands, 62 miles of fence, 2 miles of water pipeline, one holding corral, one spring development, and 59 miles of vehicle ways. An interior road system of 14 miles divides the WSA into three segments. In addition, the majority of the WSA is bounded by an exterior road system that impacts solitude.

Bitter Creek would be released from WSA status to be managed the same as surrounding BLM public lands if Congress passes a wilderness bill adopting BLM's recommendation. Under the ACEC proposal, Bitter Creek would remain a WSA and continue to be managed as a WSA until Congress acts to either release it or to make it wilderness. If Bitter Creek is released by Congress, the ACEC status would then protect the area (management would continue the same as the Interim Management Policy for Lands under Wilderness Review). Conversely, if Congress rejects BLM's recommendation and designates Bitter Creek as wilderness, the ACEC status would have no conflicting effect on the management of the area.

If Congress released Bitter Creek from WSA status, a plan for management of the ACEC would be initiated within

two years. This ACEC management plan would be developed through a public process and would consider various alternatives. Following release by Congress and until an ACEC Management Plan is completed, the special management would be the same as the revised edition of the IMP existing in 1998. Without the ACEC designation, the Bitter Creek lands would be managed the same as surrounding BLM public lands.

**BC - 03 - comments** - Oil and gas development is prohibited in the Bitter Creek WSA. The current prohibition should remain in place.

*Response* - At the present time Bitter Creek WSA is not available for oil and gas leasing under the IMP. The Federal Onshore Oil and Gas Leasing Reform Act of 1987 also prohibits BLM from leasing in WSAs. If Bitter Creek WSA is released from WSA status by Congress the area would remain unavailable for leasing at least until completion of an ACEC management plan. The ACEC Management Plan developed through a public process would determine if a no lease policy would be continued.

**BC - 04 - comments** - Mining development is prohibited in the Bitter Creek WSA. The current prohibition should remain in place.

*Response* - WSAs are open to location under the mining laws until Congress determines the future status of the land. Leases dated prior to October 21, 1976, known as valid existing rights, must be measured against the nonimpairment criteria in the IMP. Valid existing rights are rights existing at the time of the passage of FLPMA (October 21, 1976), leases and mining claims issued after this time period are fully subjected to the nonimpairment criteria. Every lease or claim filed before the passage of FLPMA still has to provide for the least impairment. Leases and claims after October 21, 1976, would have to fulfill the nonimpairment criteria. No new leases may be issued on lands under wilderness review for oil and gas, geothermal, and other leasable materials. The nonimpairment standard must be temporary, create no surface disturbance, nor involve permanent placement of structures. Circa 1982, all of the leases that were issued, prior to wilderness inventory, either expired or were relinquished. No new leases have been issued since then.

**BC - 05 - comments** - To allow consistent management within Bitter Creek, the BLM should approach the State of Montana and identify land which could be traded for state sections.

*Response* - The BLM has indicated to the State of Montana that we are interested in exchanging lands to consolidate BLM management in WSAs, particularly WSAs recommended for wilderness designation. In the case of Bitter Creek, which is not recommended for wilderness, designation of an ACEC would increase our interest in consolidating lands in the area.

**BC - 06 - comments** - It should be clear in the decision that the purpose of the ACEC designation is to further recognize the wilderness characteristics of the area.

*Response* - The purpose of the proposed Bitter Creek ACEC is to preserve the natural grassland, not to further recognize wilderness values. Wilderness characteristics are not one of the identified characteristics of an ACEC.

**BC - 07 - comments** - BLM should consider a broader Grasslands National Monument or Park as an alternative in the final EA.

*Response* - Creating a national monument or a national park is not within the authority of BLM and is outside the scope of this document.

**BC - 08 - comments** - This habitat is ideal for bison reintroduction.

*Response* - Bitter Creek WSA was part of the historical range of bison. Bison are not a listed species under the Endangered Species Act and are not a migratory species, therefore management of the animal is the responsibility of the State of Montana. Introduction of bison in the area is outside the scope of this document.

**BC - 09 - comments** - The Frenchman Creek "Roadless" area needs to be designated as wilderness.

*Response* - Frenchman Creek does not qualify as a WSA based on the original 1979 inventory. This inventory found that none of the three segments contained outstanding opportunities for solitude or primitive and unconfined recreation due to the configuration of the segments and the great visibility of agricultural lands and activities from the open ridge tops found throughout the area. The private lands in the bottom divided the area into units that were narrow with limited opportunity for solitude. This area does not contain outstanding opportunities for solitude or primitive and unconfined recreation due to the configuration of the land where the average width of the land being about three miles wide, with cultivated fields

and ranches within view and over 25 miles of vehicular ways. Some of the canyons in this area are deep enough to provide for solitude but the narrowness of the unit would constantly force separate groups to be in contact with each other. Supplemental values exist which consist of tipi rings and lithic scatter

**BC - 10 - comments** - Natural prairie mixed-grasslands are disappearing, this is a last remnant of a sizeable amount.

*Response* - The area of the nomination is actually within the *Shortgrass Prairie*, the Grama-Needlegrass-Wheatgrass Potential Natural Vegetation Type (not the Mixed Grass Prairie). This vegetation type encompasses most of eastern Montana and a portion of eastern Wyoming and is a sub-delineation of the Great Plains-Shortgrass Prairie Province that stretches from Texas and includes portions of Oklahoma, Colorado, Kansas, Nebraska, and most of North Dakota and South Dakota in addition to the area of eastern Montana and Wyoming (Kucher 1966). Bailey (1995) in "Description of the Ecoregions of the United States" identifies the Ecoregion as "Great Plains-Palouse Dry Steppe." It is the largest ecoregion in the United States, comprising 8.1% of the total land area of the USA.

The shortgrass prairie type found in Montana, North Dakota, South Dakota and Wyoming totals nearly 33 million acres. There was a slight increase in acres in grassland in this area in the period 1982 to 1992 (90,000 acres overall) due to the Conservation Reserve Program (NRCS 1994). The grama-needlegrass-wheatgrass type is not imperiled by changing land use. Only 7.39 percent of the type is cultivated. (LaRoe et. al. 1995)

**BC - 11 - comments** - BLM has the opportunity to create a linkage from the United States to the Canadian Grasslands National Park.

*Response* - Continuation of the current management of the BLM public lands adjacent to the Canadian Grasslands National Park perpetuates a prairie ecosystem in healthy condition, with public ownership and standards that require all uses to maintain the lands in healthy, proper functioning condition. The short-grass prairie is not imperiled by changing land use in the United States, while in Canada the park is in a remnant area of grassland within a landscape of grain fields. Creating a "linkage" with the Canadian Grasslands National Park is outside the scope of this document.

**BC - 12 - comments** - Reconsider Frenchman Creek for ACEC status. The state and private lands on the Frenchman are roadless and used primarily for grazing.

*Response* - The private lands in the Frenchman Valley were the key reason the Frenchman area was not found to meet the importance criteria in the analysis of the "Mixed Grass Prairie" ACEC nomination. There are approximately 20 miles of the Frenchman Valley bottom in the nomination area, all but about 1 mile are private or state lands. Much of the private land acreage is in irrigated agriculture (10 of the 20 miles). There are roads along the creek on all but 2 miles of Frenchman Valley.

**BC - 13 - comments** - BLM should provide all data and environmental analysis addressing the original Mixed Grass Prairie ACEC nomination.

*Response* - The groups who nominated the original Mixed Grass Prairie ACEC received a copy of the Mixed Grass Prairie Relevance and Importance Analysis document in 1998. A copy of the document is included as Appendix B of this plan amendment/EA. There is no environmental analysis involved in a relevance and importance determination. The environmental assessment step comes when an area is found to be qualified as an ACEC and is proposed for designation. The document you are now reading is the Environmental Analysis of the area of the nomination found to qualify as an ACEC.

**BC - 14 - comment** - Protected plants (such as the roundleaf water-hyssop, dwarf wooly-head, and five-leaf cinquefoil) and animals (such as the ferruginous hawk, swift fox, piping plover, mountain plover, and least tern) all reside in the area.

*Response* - Under contract with BLM, the Montana Natural Heritage Program sampled 53 plots in the "Mixed Grass Prairie" nomination area in 1993 to determine the presence of threatened or endangered or rare plant species or communities. No threatened or endangered plant species or communities were found. Within the nominated area only the ferruginous hawk and swift fox occupy the habitats there. The piping plover, mountain plover, and least tern are found south of the Milk River or along the Missouri River. See page 17 of Appendix B.

**BC - 15 - comment** - BLM failed to review the Mixed Grass Prairie nomination under all required importance criteria.

*Response* - All required criteria were addressed. The 1998 Evaluation of Relevance and Importance for the Mixed

Grass Prairie ACEC Nomination is included as Appendix B of this document, please refer to pages 8-11.

**CC - 01 - comments** - The JVP RMP provides adequate protection. No data has been presented suggesting an ACEC is needed.

Prairie ecosystems need to be preserved.

*Response* - The Judith-Valley-Phillips RMP does ensure that BLM public lands in Valley County will remain in natural condition and in healthy status. With or without ACEC designation the BLM public lands throughout Valley County will continue in public ownership and be managed to perpetuate the natural plant communities, with controls on land uses including mineral development, recreation, and grazing to ensure this. ACEC designations for Bitter Creek and the Mountain Plover area on Little Beaver Creek are intended to add an additional level of protection and management emphasis to ensure the special values these two areas hold are emphasized in future years.

**CC - 02 - comment** - The potential economic benefits of oil and gas leasing (or of mineral development) should not be banned from either the Bitter Creek or Mountain Plover area at this time.

*Response* - Bitter Creek WSA is not now available for oil and gas leasing or development and has been unavailable for 20 years. Oil and gas development would not be banned in the Mountain Plover area, but seasonal restrictions would in effect. The Mountain Plover ACEC would still be open for leasing. For additional information see the minerals section of Chapter 3.

**CC - 03 - comment** - Although we are uncertain about the meaning of the terms “minimal tool” and “integrated pest management” we encourage the BLM to use a cooperative and aggressive method to control weeds on these areas to prevent the spread of weeds to adjoining lands.

*Response* - No change is anticipated in the Bitter Creek ACEC. The “minimum tool” concept is used in WSAs to evaluate what type of method to use to complete a task with the least impact on the Wilderness Study Area’s wilderness attributes. Integrated Pest Management is defined as the use of many different tools to control weeds. For example the use of biological, chemical, and mechanical weed control methods is being used in the area north of Hinsdale, including the proposed Bitter Creek ACEC. ACEC designation would not change our action plans for weed control as we use both minimum tool and integrated pest

management on both these units now and are not proposing any changes if the ACEC designation is approved. In the proposed Mountain Plover ACEC activities and surface disturbing activities would be limited seasonally. The containment/eradication of noxious plants would focus primarily on treatment in the fall and/or aerial spraying. The use of insecticides would not be allowed.

**CC - 04 - comment** - We are opposed to ACEC designations and any other actions which would further restrict the ability of our citizens to make a living and eventually threaten the survival-ability of Valley County.

*Response* - Designation of Bitter Creek as an ACEC continues the current management that has been in effect for 20 years. The management prescription for the Mountain Plover ACEC does not prohibit mining or oil and gas but does require seasonal use restrictions that are reasonable and would allow for development of mineral resources. Grazing is unchanged in both areas.

**CC - 05 - comment** - The EA does not clearly identify the school trust lands and private lands and describe the management implications their presence creates.

*Response* - The State and private lands are excluded from the ACEC designation. ACEC designation only applies to public land administered by the BLM. State and private land that are surrounded by the proposed ACECs are described below by legal description and shown in figures 2 and 3.

Mountain Plover -  
State Section

T. 27 N., R. 37 E., Section 36, All

Private

T. 26 N., R. 38 E., Section 4, SWNE, SENW,  
ESW, WSE, SESE  
Section 9, NWNE, NENW

Bitter Creek -

State Sections

T. 34 N., R. 37 E., Section 36, All

T. 34 N., R. 38 E., Section 16, All

T. 33 N., R. 37 E., Section 36, All

Private

T. 34 N., R. 38 E., Section 33, SNE, SENW,  
NESW, WSE, NESE

Section 34, SWNW

Section 12, N

T. 35 N., R. 38 E., Section 20, SSE

Section 29, All

**CC - 06 - comment** - Chapter 4 (Environmental Consequences) does not mention or describe the potential impact of the alternatives on state or private inholdings.

*Response* - Impacts related to drainage and access are discussed in the next two responses to comments. No additional impacts on private and state lands have been identified. The State and private lands are excluded from the ACEC designation.

**CC - 07 - comment** - Interest in oil and gas exploration on state land inholdings could be affected by the management plan in place for surrounding Federal land. Conversely, if state land were explored and commercial production established, it might cause an oil and gas drainage situation that would require an amendment of the BLM resource management plan to protect the Federal government's correlative rights.

*Response* - There are leasing provisions to prevent drainage of federal minerals from nonfederal offending wells. In the event that future production becomes established, on state or private lands, the adjacent federal lands could be leased to prevent drainage. Any leases to protect against drainage would not allow drilling on the federal WSA lands (No Surface Occupancy, NSO).

**CC - 08 - comment** - The EA needs to be revised to include the BLM's commitment to provide reasonable access to the State of Montana school trust inholdings.

*Response* - BLM is required to provide reasonable access for the use and enjoyment of private and state lands surrounded by BLM public lands.

**CC - 09 - comment** - Township and Range descriptions appear to be in error on figures 2 and 3.

*Response* - The maps have been corrected.

**CC - 10 - comment** - Revise the EA, including tables, to include impact analysis of the alternatives for all resource areas, including minerals.

*Response* - The EA has been revised to clarify the environmental effects of the alternatives.

**CC - 11 - comment** - We reserve the right to file an IBLA appeal.

*Response* - The resource management planning process includes an opportunity for administrative review via a plan protest to the BLM's director. The protest period extends for 30 days. Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval of an amendment to an RMP may protest such approval. The protest guidelines are included in the Dear Reader letter of this document. The decision on a protest by the Director constitutes final agency action for the Department of the Interior. The Interior Board of Land Appeals (IBLA) does not hear appeals from a decision by the Director of the BLM on protests concerning land use plan amendments. Any person adversely affected by a decision of a BLM official to implement some portion of a plan amendment may, however, appeal such action to the IBLA at the time the action is proposed for implementation.

**CC - 12 - comment** - Cultural resources must be preserved, no systematic assessment of historic and cultural assessment has been conducted.

*Response* - An assessment of known cultural resources was conducted as part of the relevance and importance analysis for the Mixed Grass Prairie and Mountain Plover ACEC nomination. Based on this assessment, neither area met the relevance and importance criteria for cultural resources.

For all of BLM's projects, prior to any surface disturbing activity on public lands, an intensive ground inventory is conducted by an archeologist. If significant cultural properties are found the proposed activity is modified, moved, or not done.

**MP - 01 - comment** - Area closures for motorized vehicles, along with signing, must be included and if roads exist within the proposed Mountain Plover ACEC, consideration should also be given to closing and obliterating unnecessary or unauthorized roads.

*Response* - The preferred alternative includes the following management prescription; "Off-highway travel would be restricted seasonally (April 1 to July 31) to designated roads and trails (see Figure 3). Off-road travel would be limited to administration of a federal lease or permit." Implementation of that prescription would include signing and patrol by BLM law enforcement personnel as appropriate for the activities that are occurring within the ACEC boundaries. Currently two BLM roads are being considered for rerouting to lessen their potential impacts on mountain plovers and their habitat. Any BLM road maintenance during the time period (April 1 to July 31) within the ACEC boundaries would be coordinated with a

wildlife biologist. There are no county or privately maintained roads in the proposed ACEC.

**MP - 02 - comment - & MP - 03 - comment** - Any future oil and gas leasing in the Mountain Plover ACEC should restrict development to existing roads and prohibit new road building. Where additional mining activities are proposed in the Mountain Plover ACEC, plover habitat should be withdrawn from further locating and/or leasing.

*Response* - With an ACEC designation the BLM would place additional restrictions on the lessee/operator's plans to eliminate possible effects on mountain plovers. Timing restrictions would be placed on geophysical exploration, drilling, and the operation and maintenance of production facilities. The stipulation would eliminate potential disturbance and nest destruction impacts during nesting season. The locations of any new roads and the timing of road construction would also be restricted to eliminate negative effects on mountain plovers. The proposed seasonal restrictions are adequate to protect the occupied habitat during critical time periods.

BLM guidance requires that mining operations include adequate and responsible measures to prevent unnecessary and undue degradation of federal lands and to provide for reasonable reclamation. All BLM public land will remain open to mineral entry unless significant resource impairment would result from hardrock mineral activity after all possible mitigation is applied. The JVP management guidance is that BLM will allow exploration and development of bentonite resources while preventing unnecessary or undue degradation of nonmineral resources. Mine plans will be reviewed and appropriate measures taken to protect nonmineral resource values. A withdrawal of the Mountain Plover ACEC was considered but was determined not needed to prevent significant resource impairment. Operators of bentonite mining could adjust activities to conduct most operations off the ACEC and reclamation could return the mined area to the native plant community.

**MP - 04 - comment** - Make the Mountain Plover ACEC part of a larger vision to secure in perpetuity a large, contiguous, and ecologically healthy northern mixed grass prairie region, such as for example the Big Open Wildlife Range.

*Response* - BLM management as prescribed in resource management plans and the Standards for Rangeland Health will perpetuate a large contiguous, healthy grassland on BLM public lands in eastern Montana.

**MP - 05 - comment** - While it is reasonable to designate the Mountain Plover area as ACEC, it seems this is just a small portion of the ecologically important lands under consideration.

*Response* - The land within the boundaries of the Mountain Plover ACEC includes a substantial amount of the Vaeda silty clay soils (the hardpan soils) found in Valley County. The ACEC includes all of the broad, wide expanses of the hardpan. These are the areas used for mountain plover breeding and is what makes this habitat unique. There are other areas outside of the ACEC occasionally used for feeding and incidental breeding. The proposed ACEC is the important extent of the unique area of a naturally occurring habitat. The initial nomination by a private individual did not include all of the important habitat, which is one of the reasons the BLM expanded the boundaries to include more hardpan. The nomination area was enlarged from an estimated 9,600 acres to 24,730 acres.

In a report prepared for the BLM, FaunaWest Wildlife Consultants pointed to their observations that mountain plovers in this area sought out two habitat types, both found along valley bottoms. The valley bottoms were broad, greater than 0.8 kilometers across and relatively level, less than 1% slope. The first type was the alluvium in the central portion of the valleys, which frequently occurred as large areas of lightly colored hardpan. Vegetation on these sites was dominated by Nuttall's saltbush, plains prickly pear cactus, Nuttall's alkali-grass, and blue grama. The second type was on the gentle rises on either side of the valley bottom dominated by almost pure stands of yellow eriogonum and Richardson's rubberweed. Both types had an extremely low vegetative height profile of less than 10 centimeters and a high percentage of bare ground, greater than 50 %.

The proposed ACEC incorporates all of the extensive complexes of those habitat types.

**MP - 06 - comment** - Timing restrictions do not apply to the production phase of oil and gas development. Production results in daily visitation to the well site by crews to check on the well. Oil and gas development results in loss and fragmentation of habitat because of road, pipeline, and powerline construction.

*Response* - Timing restrictions *do* apply to the production phase of oil and gas development (see appendix D). The preferred alternative includes the following statement; "The following mitigating measures would apply for any oil and gas well completed as a producer." Included in those measures are seasonal restrictions during the time

periods of April 1 to July 31. Those measures are to prevent protracted disturbance of nesting plovers. Based upon reports of mountain plovers nesting on oil well sites and access roads in Colorado, daily visits by one or two vehicles to keep producing wells operational are considered to be nondisturbing.

**MP - 07 - comment** - A more appropriate oil and gas leasing designation for the Mountain Plover ACEC would be to designate it “no lease” or to have No Surface Occupancy stipulations along its boundary with a “no lease” core.

*Response* - With an ACEC designation the BLM would place additional restrictions on the oil and gas activities to eliminate possible adverse effects on mountain plovers. Timing restrictions would be placed on geophysical exploration, drilling, and the operation and maintenance of production facilities. The stipulation would eliminate potential disturbance and nest destruction impacts during nesting season. The locations of any new roads and the timing of road construction would also be restricted to eliminate negative effects on mountain plovers. The seasonal restrictions as proposed allow leasing to occur without affecting mountain plovers.

A no lease alternative for the Mountain Plover ACEC was considered but was determined not needed to prevent significant resource impairment. The additional restrictions on the oil and gas activities would eliminate possible adverse effects on mountain plovers.

**MP - 08 - comment** - This EA must consider prairie dog reintroduction to the mountain plover ACEC.

*Response* - Introduction of prairie dogs, if successful, would remove the uniqueness of this area. The area was nominated because the mountain plovers were found off of prairie dog towns. The Mountain Plover ACEC area provides natural habitat for the mountain plover and is not associated with black-tailed prairie dogs. This area provides plover habitat that is not connected with grazing either by prairie dogs or domestic sheep, which are the

principal habitats for mountain plovers in other places in Montana.

Also, this area is not potential prairie dog habitat when compared to existing prairie dog colonies surrounding this area. The soils in the Mountain Plover ACEC are comprised of clays with a high content of sodium (alkali soils). Alkali soils have a hard, crusty surface layer with poor soil aeration. The soils also have a high shrink-swell potential, which means there are large volume changes when the soil moisture changes. When the soils are dry the ease of excavation becomes so difficult they seem like a rock. When wet the soils become pliable and have a low load supporting capacity, the soils spread out and become smooth. The soils also naturally have a very high percentage of barren ground, therefore the food source (plants) for prairie dogs is also limiting.

**MP - 09 - comment** - Consultation with the Fish and Wildlife Service for the mountain plover, a candidate species is needed.

*Response* - Even though the mountain plover is not a listed species, the BLM will continue informal consultation with the FWS about potential effects of designating a Mountain Plover ACEC. The purpose of this ACEC is to have a positive effect on mountain plovers. The Fish and Wildlife Service and USGS - Biological Resource Division have been sent information about the BLM’s initiation of planning to determine if special management is needed for mountain plovers. Fish and Wildlife Service also was provided a copy of the draft plan amendment/EA. No written response has been received from them. Telephone discussions with representatives of the Service have determined that their concern is with reclamation of bentonite mined areas. The concern is whether mountain plover habitat can be maintained after mining. Additional information about reclaimed sites has been added to the EA. Based upon past experience BLM believes that reclaimed sites provide habitat, but will make a point of monitoring sites, which are mined and reclaimed in the future, for mountain plover use.

# BIBLIOGRAPHY

- American Ornithologists Union. 1983. Check-list of North American birds, 6th ed. Allen Press, Lawrence, KS. 877 pp.
- Andrews, R., and R. Righter. 1992. Colorado Birds. Denver Mus. Natur. Hist., Denver, CO. 442 pp.
- Bailey, Robert G., 1995. Descriptions of Ecoregions of the United States, Forest Service Misc. Pub. 1391.
- BRD. 1995. Mountain plover *Charadrius montanus*, U.S. Department of Interior, United States Geologic Survey, Biological Resources Division, Dec 14, 1995.
- Coues, E. 1874. Birds of the northwest: a hand-book of the ornithology of the region drained by the Missouri River and its tributaries. U.S. Govt. Printing Office, Washington, D.C. (Reprinted 1974 by Arno Press, New York)
- Day, K. S. 1994. Observations on Mountain Plovers (*Charadrius montanus*) breeding in Utah. *Southwestern Naturalist* 39:298-300.
- FaunaWest Wildlife Consultants, 1997. Mountain Plover Numbers, Reproduction, and Habitat Use in Montana: A Summary of Six Years. Unpublished Report Prepared for Montana Dept. of Fish, Wildlife & Parks and the Bureau of Land Management. April 22, 1997.
- Garrett, K., and J. Dunn. 1981. Birds of southern California: status and distribution. Los Angeles Audubon Soc., Los Angeles, CA. 408 pp.
- Godbey, Jerry L. 1992. U.S. Department of Agriculture, Forest Service, A Survey of the Mountain Plover on the Pawnee National Grassland, Greeley, Colorado, 1992.
- Graul, W. D. 1973. Breeding adaptations of the Mountain Plover (*Charadrius montanus*). Ph.D. diss., University of Minnesota, St. Paul.
- Graul, W. D. 1975. Breeding biology of the Mountain Plover. *Wilson Bull.* 87:6-31.
- Graul, W. D. and L. E. Webster. 1976. Breeding status of the Mountain Plover. *Condor* 78:265-267.
- Knopf, F. L. 1996. Mountain Plover (*Charadrius montanus*). Pages 1-16 In *Birds of North America*, No. 211 (A. Poole and R. Gill, eds.). The Acad. Nat. Sci., Philadelphia, PA, and The Am. Ornithol. Union, Washington, D.C.
- Knopf, F. L., and B. J. Miller. 1994. *Charadrius montanus* - Montane, Grassland, or Bare-ground Plover? *The Auk*. 111(2):504-506.
- Knowles, C. J., C. J. Stoner, and S. P. Gieb. 1982. Selective use of black-tailed prairie dog towns by Mountain Plovers. *Condor* 84:71-74.
- Kuchler A. W. 1966. Potential Natural Vegetation of the Conterminous United States. University of Kansas Press.)
- LaRoe, E. T., G. S. Farris, C. E. Puckett, P. D. Doran, and M. J. Mac, eds. 1995. Our living resources: a report to the nation on distribution, abundance, and health of U.S. plants, animals, and ecosystems. U.S. Department of the Interior, National Biological Service, Washington, D. C. 530 pp. (page 472 Table 3).
- Leachman, Bob, and Barbara Osmundson. 1990. U.S. Department of Interior, Fish and Wildlife Service. Status of the Mountain Plover A Literature Review. Fish and Wildlife Enhancement, Golden, Colorado May 15, 1990.
- Miller, Brian and Fritz Knopf. U.S. Department of Interior, Fish and Wildlife Service, Survival Rates of Mountain Plovers (*Charadrius montanus*) on the Pawnee National Grassland, National Ecology Research Center, Fort Collins, Colorado.
- Montana Audubon Council. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 9, 1990.
- Montana Chapter of the Sierra Club. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 9, 1990.
- Montana Wilderness Association. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 9, 1990.
- Montana Wildlands Coalition. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 9, 1990.
- Montana Wildlife Federation. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 21, 1990.

- National Wildlife Federation. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 2, 1990.
- Nebraska. 1997. The Mountain Plover A Threatened and Endangered Species, Nebraska Wildlife, Nebraska Game and Parks Commission, Lincoln, Nebraska, March 27.
- NRCan. 1997. Mountain Plover(*Charadrius montanus*), Wildlife at Risk, National Atlas on School Net, National Atlas of Canada, Government of Canada, Natural Resources Canada, October 22, 1997.
- Parrish, T.L. 1988. Mountain Plover habitat selection in the powder River Basin, Wyoming. M.S. theses. University of Wyoming, Laramie, Wyoming. 60 pages.
- Patuxent. 1998. Bird Banding and Recovery Data - Mountain plover, U.S. Department of Interior, United States Geologic Survey, Patuxent Wildlife Research Center, Laurel, Maryland June 3, 1998.
- Sierra Club. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 28, 1990.
- The Wilderness Society. 1990. Letter nominating the Mixed Grass Prairie as an ACEC, November 9, 1990.
- United States Department of the Interior, Bureau of Land Management. 1989. Final Bitter Creek Wilderness Environmental Impact Statement. Lewistown, Montana.
- United States Department of the Interior, Bureau of Land Management. 1992. Final Judith Valley Phillips Resource Management Plan and Environmental Impact Statement. Lewistown, Montana.
- United States Department of the Interior, Bureau of Land Management. 1997. Record of Decision, Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Montana, North Dakota and South Dakota, Billings, Montana.
- United States Department of the Interior, Bureau of Land Management. Interim Management Policy for Management of Lands under Wilderness Study, Washington, D.C.
- United States Department of the Interior, Bureau of Land Management. 1998. Draft Judith-Valley Phillips Oil and Gas Supplemental RMP/EIS, Lewistown, Montana.
- Wallis, C.A., and C.R. Wershler. 1981. Status and breeding of Mountain Plovers (*Charadrius montanus*) in Canada. Canadian Field-Naturalist 95:133-136.

# APPENDIX A

## AREA OF CRITICAL ENVIRONMENTAL CONCERN

### INTRODUCTION

This appendix provides an assessment of the areas nominated for area of critical environmental concern (ACEC) designation; Mixed Grass Prairie and Mountain Plover.

### EVALUATION PROCESS

In order to be designated an ACEC, an area must meet both the relevance and importance criteria as defined in 43 CFR 1610.7-2.

**Relevance.** An area meets the relevance criteria if it contains one or more of the following.

1. Significant historic, cultural or scenic values including rare or sensitive archaeological resources and religious or cultural resources important to the Native Americans.
2. Fish and wildlife resources including habitat for endangered, sensitive or threatened species, or habitat essential for maintaining species diversity.
3. Natural process or systems including endangered, sensitive, or threatened, plant species; rare, endemic or relic plants or plant communities which are terrestrial, aquatic, or riparian, or rare geologic features.
4. Natural hazards including avalanche, dangerous folding, landslides, unstable soils, seismic activity, or dangerous cliffs.

**Importance.** The value, resource, system, process, or hazard described above must have substantial significance and values characterized by one or more of the following.

1. More than locally significant qualities.
2. Quality of circumstances that make it fragile, sensitive, rare, irreplaceable, unique, endangered, threatened, or vulnerable to adverse change.
3. Recognized as warranting protection to satisfy national priority concerns or to carry out the mandates of the Federal Land Policy and Management Act.

4. Qualities which warrant highlighting to satisfy public or management concerns about safety and public welfare.
5. Poses a significant threat to human life or safety or to property.

An interdisciplinary team evaluated each area to determine if it met both the relevance and importance criteria. Evidence of relevance and importance may be gathered from BLM and other sources. The Mixed Grass Prairie area was evaluated in 1998 and the Mountain Plover area was evaluated in 1992.

If an area does not meet the criteria, or special management attention is not needed, analysis supporting the conclusion is incorporated into the amendment and the area is not considered a potential ACEC.

**MIXED GRASS PRAIRIE (BITTER CREEK):** Nominated for its natural integrity, scenic values, vegetation and on the basis that it is one of the largest and most intact sections of prairie remaining in the United States and coupled with the Canadian Grasslands National Park, would provide an intact prairie corridor between the United States and Canada. This nomination encompasses approximately 350,000 acres of BLM public land in north Valley County.

**Relevance Criteria:** The entire nomination area was found to meet the relevance criteria for scenic and cultural values and wildlife resources. The area contains outstanding scenic views which are not compromised by visual intrusions or social imprints. The area is known to contain sensitive archaeological resources. The area is valuable for wildlife due to the relatively large, continuous, and contiguous amount of prairie under federal administration which provides a reservoir of grassland habitat. Two areas consisting of approximately 100,000 acres of BLM public land each, meet the criteria for natural process or systems. These two areas are primarily in an undisturbed condition and are representative of the natural system and process. The nomination does not meet the relevance criteria for natural hazards.

**Importance Criteria:** The nomination area is not considered to have more than locally important qualities giving it special worth, consequence, meaning or distinctiveness. Similar resources can be found in other areas under federal administrative; therefore, the relevant

resources in the nomination area do not possess qualities or values which are any more important than comparable resources in other areas. Only the Bitter Creek WSA (59,660 acres) was found to meet the importance criteria due to the scenic diversity and variety of vegetation types and wildlife habitat.

**Summary:** The Bitter Creek WSA does qualify for further consideration as an ACEC.

**MOUNTAIN PLOVER:** Nominated for the mountain plover habitat values.

**Relevance Criteria:** This area meets Criteria 2. The area provides habitat for the mountain plover and is not associated with black-tailed prairie dogs. This is the natural habitat of the plover and not biologically created by prairie dogs. The plover is a species of special concern to the Montana Department of Fish, Wildlife and Parks. It is a category 1 species under the Endangered Species Act and

is being considered for listing by the U.S. Fish and Wildlife Service (as of January 1992). This is one of the three documented breeding sites in Montana and may represent the second major population in the State. Knowles, 1991, has reviewed the record of mountain plover sightings in this area and has found 123 observations of 314 birds since 1978.

**Importance Criteria:** The area meets Criteria 1 and 3. This habitat is important to the plover and needs to be maintained. The area is unique because it contains natural habitat for the mountain plover. It is one of the last areas of native plover habitat in the United States. It is more than locally significant to the survival of the plover. The area would qualify under Sec. 102.(a)(8) of FLPMA as an area to be managed that will protect the quality of scientific values and provide food and habitat for fish and wildlife.

**Summary:** This nomination qualifies for further consideration as an ACEC.

**APPENDIX B**

**MIXED GRASS PRAIRIE**

**AREA OF CRITICAL ENVIRONMENTAL CONCERN  
(ACEC) NOMINATION**

**EVALUATION OF RELEVANCE AND IMPORTANCE**

December 2, 1997

Prepared by

United States Department of the Interior  
Bureau of Land Management  
Valley and Phillips Resource Areas

## ACRONYMS

ACEC .....	Area of Critical Environmental Concern
BCWSA .....	Bitter Creek Wilderness Study Area
BLM .....	Bureau of Land Management
EIS .....	Environmental Impact Statement
FLPMA .....	Federal Land Policy and Management Act of 1976
FAR .....	Functional-at-Risk
JVP RMP .....	Judith-Valley-Phillips Resource Management Plan
LU .....	Land Utilization
MDFW&Ps .....	Montana Department of Fish, Wildlife & Parks
MRA .....	Montana Riparian Association
NF .....	Non-Functional
NP .....	National Park
NRCS .....	Natural Resources Conservation Service
PNC .....	Potential Natural Community
PFC .....	Proper Functioning Condition
PRA .....	Phillips Resource Area
RMP .....	Resource Management Plan
T/E .....	Threatened or Endangered
VRA .....	Valley Resource Area
VRM .....	Visual Resource Management
WSA .....	Wilderness Study Area

## TABLE OF CONTENTS

Introduction .....	1
Relevance and Importance Criteria .....	3
Relevance	
Scenic Values .....	4
Cultural .....	4
Wildlife .....	4
Natural System / Vegetation .....	5
Paleontological Resources .....	6
Natural Hazards .....	6
Importance	
Summary .....	7
Resource Importance Determination .....	7
Scenic Values .....	8
Cultural .....	10
Wildlife .....	10
Natural System/Vegetation .....	11
Paleontological Resources .....	11
Natural Hazards .....	11
Resource Description	
Scenic Values .....	12
Cultural .....	13
Wildlife .....	15
Wildlife Habitat .....	15
Fisheries .....	16
Raptors .....	16
Special Status Species .....	16
Natural System / Vegetation .....	16
Upland Vegetation .....	16
Riparian Vegetation .....	18
Riparian Habitat Types .....	19
Riparian Health and Function .....	19
Paleontological Resources .....	19
Natural Hazards .....	19
References .....	20
Attachments	
1 - Interdisciplinary Team Membership .....	22
2 - Areas Determined Comparable from a Federal Acreage and Land Ownership Basis .....	23
3 - Wildlife Species in the Nomination Area .....	25
4 - Special Status Species .....	27
5 - Upland Vegetation Ecological Condition .....	29
6 - Stream Functioning Condition and Miles .....	30

Map of total ACEC Nomination Area ..... 32  
Map of the area that qualifies as a potential ACEC ..... 33

The following document is the analysis of the Mixed Grass Prairie ACEC nomination in the Valley and Phillips Resource Areas. Of the 350,000 acres of public land nominated, BLM has determined that only the 60,000 acre Bitter Creek WSA area qualifies as a potential ACEC. Until Congress acts to either designate Bitter Creek as Wilderness or release it from WSA status, Bitter Creek will continue to be managed under BLM's "Interim Management Policy and Guidelines for Lands under Wilderness Review".

## INTRODUCTION

The Bureau of Land Management (BLM) must identify, evaluate and designate Areas of Critical Environmental Concern (ACEC) through a resource management plan (RMP) or an amendment to an RMP. ACECs are areas of public land where special management attention is required to protect unique resources such as important historic, cultural, or scenic values, fish and wildlife resources or other natural systems. Areas are nominated by the public, BLM or other federal and state agencies. All nominations are evaluated to determine if they meet both relevance and importance criteria. A nomination must meet one or more relevance and importance criteria to be considered a potential ACEC. A potential ACEC is designated if the area requires special management.

The BLM received the Mixed Grass Prairie ACEC nomination (refer to Map 1) in November 1990. The area was nominated by the following organizations for its natural integrity, scenic values, vegetation and on the basis that it is one of the largest and most intact sections of prairie remaining in the United States.

- \* National Wildlife Federation
- \* Montana Chapter of the Sierra Club
- \* Montana Wilderness Association
- \* Montana Wildlands Coalition
- \* Montana Audubon Council
- \* Montana Wildlife Federation
- \* Sierra Club

The nomination area encompasses approximately 530,000 acres of which 344,700 (65%) acres are public lands administered by the BLM and 185,300 (35%) acres are private and state lands. Of the public lands, 53,000 (15%) acres are in the Phillips Resource Area (PRA) and 291,700 (85%) acres are in the Valley Resource Area (VRA).

To maintain the planning schedule and commitment to the public, the BLM did not include the nomination in the July 1991 Draft or October 1992 Final Judith-Valley-Phillips Resource Management Plan (JVP RMP) and Environmental Impact Statement (EIS). The BLM's decision was to evaluate this nomination after completion of the RMP. If the nomination qualifies "for further consideration, per the ACEC relevance and importance criteria, alternatives for special management will be considered through an amendment to the Judith Valley Phillips RMP/EIS" (BLM, 1992).

Three areas (Bitter Creek Wilderness Study Area, Rock Creek Canyon and Ichpair Slough) within the Mixed Grass Prairie nomination area were previously evaluated but found not to meet both the relevance and importance criteria for ACEC designation (JVP RMP/EIS Volume 1, 1992, pages 268, 375 and 376).

In summary, the entire nomination area was found to be relevant in terms of the scenic, cultural, and wildlife resources. In addition, two of approximately 100,000 acres in size were found relevant from a natural process or systems perspective. However, only the Bitter Creek WSA (59660 acres) was found to meet the importance criteria. The Bitter Creek Area does qualify for further consideration as an ACEC.

While the Bitter Creek WSA area was not found to meet the ACEC criteria in the 1992 evaluation (which considered only scenic values), the 1997 review of comparable areas revealed that the Bitter

Creek area is more than locally significant due to the primitive nature of the roads, roadless status, scenic diversity and variety of vegetation types and wildlife habitats. Consequently, the Bitter Creek area was determined to meet both the relevance and importance criteria.

This report addresses the relevance and importance criteria for the Mixed Grass Prairie ACEC nomination and for the smaller Bitter Creek WSA portion.

## **RELEVANCE AND IMPORTANCE CRITERIA**

To be considered a potential ACEC and analyzed in RMP alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2. For an area to be a potential ACEC, both criteria must be met.

### **Relevance**

An area meets "relevance" criteria if it contains one or more of the following:

1. A significant historic, cultural, or scenic value including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans.
2. A fish and wildlife resource including but not limited to habitat for endangered, sensitive or threatened species, or habitat essential for maintaining species diversity.
3. A natural process or system including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features.
4. Natural hazards including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs.

### **Importance**

The value, resource, system, process, or hazard described above must have substantial significance and values characterized by one or more of the following.

1. Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
2. Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
3. Has been recognized as warranting protection to satisfy national priority concerns or to carry out the mandates of Federal Land Management and Policy Act of 1976.
4. Has qualities which warrant highlighting to satisfy public or management concerns about safety and public welfare.
5. Poses a significant threat to human life and safety or to property.

## Relevance

### Summary

The entire nomination area was found to meet the relevance criteria for scenic and cultural values (Criterion 1) and wildlife resources (Criterion 2). Two areas consisting of approximately 100,000 acres of public land each, meet the criteria for natural process or systems (Criterion 3). The nomination does not meet the relevance criteria for natural hazards (Criterion 4).

### Specific Resource Relevance Analysis

#### Scenic Values

The nomination area meets the relevance criterion for significant scenic values. ( Criterion 1)

Overall, the nomination area contains outstanding scenic views which are not compromised by visual intrusions or social imprints. The comprehension of vastness is apparent from many sites within the nomination area. The nomination area offers the gentle rolling grasslands, interspersed with denuded badlands, interesting geological events creating features such as blowouts; and undulating fields which distort distances and prairie features.

#### Cultural

The nomination area meets the relevance criterion for cultural resources (Criterion 1). The area is known to contain sensitive archaeological resources.

Portions of the nomination area consist of unbroken native range with intact prehistoric features. These features include stone rings, cairns, rock alignments and buffalo kill sites (Davis, 1975; Tratebas and Lahren, 1982).

During the homestead era (1910 - 1920), the majority of the nomination area was claimed by homesteaders. The acreage which was actually cultivated is not known. Much of the acreage proved marginal for farming and was returned to the federal government under the provisions of the Bankhead-Jones Farm Tenant Act.

#### Wildlife

The nomination area meets the relevance criterion for wildlife resources (Criterion 2).

The nomination area is valuable for wildlife due to the relatively large, continuous, and contiguous amount of prairie under BLM administration which provides a reservoir of grassland habitat.

The area provides habitat for special status species<sup>1</sup> (T/E species, candidate species, and sensitive species). The special status species that use the nomination area at some time during the year are:

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<sup>1</sup>Based on Instruction Memorandum MT-94-055 entitled "Special Status Species" dated May 6, 1994.

- Bald eagle
- Ferruginous hawk
- Northern goshawk
- Canvasback
- Long-billed curlew
- Burrowing owl
- Northern swift fox
- Loggerhead shrike
- Baird's sparrow
- Common loon
- Swainson's hawk
- Blacktail prairie dog

The nomination area also provides habitat for Montana Species of Special Concern<sup>2</sup> and neotropical migratory birds which live in grasslands.

### **Natural System / Vegetation**

Two areas referenced in 3 below (Frenchman Creek to Bluff Creek and the Deep Creek to Eagle Creek) meet the criteria for natural system or process (Criterion 3). These portions of the nomination area, comprising about 100,000 acres of public land each, are primarily in an undisturbed condition and are representative of the natural system and process.

To determine whether the nomination area meets the relevance criteria as a natural system or process, the following factors were considered:

1. Comparability of current native vegetation communities to natural communities, and;
2. Degree of alteration of landscape and vegetation by farming or other activities.

Ecological condition of uplands and riparian health and function data were compiled for the nomination area to determine relative comparability with the natural vegetation. Aerial photos were used to map crested wheatgrass seedings and farmed areas. Findings from these efforts are summarized below.

1. Species composition and trend for the uplands, and health and function status of the riparian areas show that the nomination area is quite healthy and closely represents the *potential natural community*.
2. When considering the nomination area as a whole, it would not meet the natural system relevance criteria due to prevalence of crested wheatgrass seedings and farming in a central band from Genevieve northeast through the Thoeny area and continuing to the eastern boundary (refer to Map 2). In this middle zone, there is a preponderance of evidence of past farming (crested wheatgrass seedings and go-back areas) and of current intermingled farming which detracts significantly from the natural system.
3. The northwestern and southeastern portions of the nomination area, Frenchman Creek to Bluff Creek and Deep Creek to Eagles Nest Coulee (including Bitter Creek WSA), respectively, encompass a substantial area of the Grama-Needlegrass-Wheatgrass community with a mixture of rolling prairie and breaks/badlands topography. Crested wheatgrass seedings, previously farmed "go-back" lands or current private farmlands do not alter the natural vegetation significantly in these two areas. The area within the Bitter Creek WSA has the least alterations. The Frenchman-Bluff area includes ranches and irrigated croplands in the creek bottoms.

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<sup>2</sup>Based on the list depicted in the Final JVJP RMP/EIS (10/92).

### **Paleontological Resources**

The nomination does not meet the relevance criterion for paleontological resources. Although paleontological resources and their accompanying geographic and geologic data are of scientific value, there have not been any significant discoveries within the nomination area which warrant consideration.

### **Natural Hazards**

There have not been any natural hazards identified within the nomination area. Therefore, the area would not qualify for further consideration from this standpoint.

## Importance

### Summary

*The nomination area, as a whole, was determined to be not more than locally significant. The Bitter Creek WSA area was found to be more than locally significant. The Bitter Creek WSA stands out in terms of one or more of the following factors: 1. lack of developed roads and other intrusions 2. diversity of scenic quality, 3. variety of vegetation and habitats.*

### Resource Importance Determination

To determine if the nomination area met the "importance" criteria, the Valley Resource Area staff visited similar areas of public land in the grama-needlegrass-wheatgrass ecosystem in Montana, South Dakota, North Dakota and Wyoming. Scenic value, wildlife habitat, and natural system were considered at these locations. Importance of the cultural resource was determined based on knowledge of similar BLM areas in the Lewistown District.

Eighteen areas were identified (refer to Attachment 2) under federal administration which are comparable to the nomination area in federal acreage and land ownership pattern. Seven of the 18 areas were eliminated from consideration based on the degree of human development or interference as determined by a questionnaire response from the administering agency. Of the remaining 11 areas, nine were field visited by an inter-disciplinary team. The inter-disciplinary team was familiar with two areas (Valley South and McCone); therefore, a comparability assessment was made without a field visit.

Overall, eight of the areas were found to be comparable to the Mixed Grass Prairie nomination in terms of scenic values, wildlife values, and natural system. Eight of the original 18 areas were determined to be comparable to the nomination area in terms of scenic values. Eighteen areas were found comparable in terms of wildlife values and 15 were comparable as representative of the shortgrass prairie (grama-needlegrass-wheatgrass) ecosystem.

The only identified difference between the overall nomination area and the eight comparable areas is the nomination area's proximity to the Canadian Grassland National Park (refer to Map 2). This fact is highlighted by the 1990 nomination letter which describes the nomination area not only as nationally but internationally important because Canada "identified lands directly north of the nomination area as being the best remaining example of a grassland ecosystem in that country." It is important to understand the rationale for establishment of the Canadian Grasslands National Park when discussing the importance of the adjacent nomination area.

The Canadian Grasslands National Park was established under the September 22, 1988 Grasslands National Park Agreement as a representative part of the prairie grasslands natural region of Canada, to provide a focus for public understanding and awareness of Canada's grasslands and the need to preserve what is left of a once extensive natural heritage (May 1991 Grasslands National Park Interim Management Guidelines). The national park was designated to reestablish and preserve a representative sample of the prairie ecosystem (including its associated components) which was once much more extensive.

Similar circumstances do not occur within the United States. As discussed previously, the evaluation of the Mixed Grass Prairie ACEC nomination identified eight areas totalling over 2.5 million acres in the short grass prairie biome under federal administration which contain similar scenery and lack of development to the nomination area. In addition, there are 3.6 million acres of Forest Service, Park Service and BLM administered lands that are more developed but remain representative of a natural system and are comparable to the subject area in terms of wildlife habitat. The million-acre Charles M. Russell Wildlife Refuge is within the grama-needlegrass-wheatgrass grassland type, but was not considered a comparable area because it is breaks rather than prairie. Furthermore, the grama-needlegrass-wheatgrass grassland type is not imperiled by changing land use. Only 7.39 percent of this grassland type is cultivated in the USA (LaRoe et. al. 1995).

Proximity of the nomination area to the Canadian Grasslands National Park, alone, was not determined significant enough to meet the requirements of Criterion 1 or the "uniqueness" quality or circumstance outlined in Criterion 2. The importance determination of an ACEC nomination should be based on the value or significance of the relevant resource(s); not solely on their proximity to another area.

The Bitter Creek WSA portion of the nominated area stood out as a primitive area with the least developed roads and other human intrusions, while possessing an outstanding variety of vegetation types and wildlife habitats representative of the prairie ecosystem. The WSA boundary was considered to essentially contain the area that has the relevant and important values. The WSA boundary has been signed and conforms primarily to land ownership boundaries or roads.

The relevant factors of the nomination area were determined not to meet the requirements of Criterion 3.

Importance Criteria 4 and 5 were determined not to apply.

## **Specific Resource Importance Analysis**

### **Scenic Values**

Criteria used to determine the scenic quality of the 18 grassland sites were based on the amount and type of use; adjacent land use affecting the viewshed (a distant view seen from points of observation), visual sensitivity (includes relatively unique or rare scenes, vastness, or areas that detract from the vista), landforms (changes or variations in topography), vegetation (variety of patterns, forms, textures, and a composite of these features that create the character of the prairie), and wildlife sightings, (frequency of observation and similarity of species). Table 1 is a summary of areas that were determined to be comparable from a scenic standpoint (see Attachment 2 of summary of all areas considered.).

**Table 1  
Areas Comparable to the Mixed Grass Prairie from a Scenic Standpoint**

Site	Location	Public Acres	Features
Buffalo Gap West	South Dakota	238,000	Two-track trails; no major intrusive activity inside study unit; facilities limited; use low; topography similar; vegetation and wildlife sightings similar. Not as primitive and undeveloped as BCWSA, due to outer network of paved highways and graveled roads.
Thunder Basin	Wyoming	368,000	Graveled roads similar to main roads in the nomination area; no major intrusive activity inside study unit; topography similar; vegetation and wildlife sightings similar; viewshed screened. However, overall feeling was of being in a well roaded area, comparable to travel through the overall nomination area but not comparable to BCWSA.
Valley South	Montana	650,000	Graveled main roads; remaining roads are two track trails; no major intrusive activity; facilities limited; use low; topography similar; vegetation and wildlife sightings similar. There are very primitive areas which compare to BCWSA, but scenic diversity is lacking.
Buffalo Gap East / Badland Park	South Dakota	358,000	Rugged scenery, undeveloped landscape with paved road network through park with interpretive signs, overlooks etc.
Wymont	Montana and Wyoming	380,000	North block of Wymont area is similar to badlands portion of BCWSA or South Valley, unroaded, undeveloped. Little diversity of vegetation or scenery.
Little Missouri Grasslands (south)	North Dakota	276,000	Rugged Little Missouri Breaks scenery, mixed with broad prairie vistas, network of all-weather roads is only development. Diverse vegetation types. However, overall feeling was of being in a well roaded area, not comparable to BCWSA.
Phillips Southwest (1)	Montana	188,000	Mix of Missouri Breaks and prairie landscape. Rugged scenery, primitive roads. Includes Cow Creek and Antelope Creek WSAs, similar values to BCWSA but predominately breaks topography.
Phillips Southwest (2)	Montana	180,000	Graveled main roads; remaining roads are two track trails; no major intrusive activity inside unit; facilities limited; use low; topography similar; vegetation and wildlife sightings similar to overall nomination area. However, overall feeling was of being in a well roaded area, not comparable to BCWSA.

From an overall scenic standpoint, the nomination area is comparable to the eight grassland areas listed above and; therefore, is not more than locally significant (Criterion 1).

Only the Prairie County unit which contains the Terry Badlands WSA appeared to contain an area comparable to the Bitter Creek WSA, representing a large area of undeveloped, unroaded, and scenic grassland. Thus, the BCWSA is found to be more than locally significant. From a scenic standpoint, the values depicted in Importance Criteria 2 and 3 were not found to apply. Importance Criteria 4 and 5 do not apply.

## **Cultural**

The entire nomination area was determined not to be more than locally significant from a cultural resources standpoint. There are several known cultural sites which, if intact, may be eligible for the National Register of Historic Places. However, these sites are widely scattered and a similar collection of eligible cultural sites would be expected in any area of similar size on the northwestern plains.

All archaeological sites are fragile and individually unique. However, the known cultural resources in this area are typical to this region of the northwestern plains. As such they do not meet criteria 2 and 3. Criteria 4 and 5 do not apply to cultural resources.

## **Wildlife**

The nomination area is not more than locally significant (Importance Criterion 1). The nomination area does provide seasonal or migration habitat for special status species and year-long habitat for black tail prairie dogs; however, the area is not considered critical for the survival of the special status species. Most public lands within the State of Montana serve as migration habitat for special status species.

The wildlife species found in the nomination area have broad ecological amplitude throughout the grasslands. The grasslands that provide wildlife habitat in the nomination area are similar to the grasslands, throughout Montana, North Dakota, South Dakota, and Wyoming, which provide habitat for the same diversity of wildlife. All of the areas listed in Attachment 2 were determined to be comparable to the nomination area due to a similar mix of wildlife species. Areas in the northern great plains have individual combinations of prairie, wetlands, riparian areas, and bare areas peculiar to that location based on soils and microclimates. Any species that have specialized habitat, for example, the cliff swallow, could find similar habitat in the other areas as well.

Populations of some neotropical migratory bird species are suspected to be declining; however, the cause(s) and extent of the declines are not understood at the present time. Nationally, the changes to or a reduction in native grasslands is a cause for concern for neotropical migratory birds. However, the largest concern is in the tallgrass prairie, not in the shortgrass areas such as the nomination area. The nomination area was determined not to contain substantial significance and/or value from a neotropical species standpoint.

The entire nomination area does not meet Importance Criterion 2. This shortgrass prairie habitat is not rare or unique when compared to the abundance of other BLM or other federally administered grassland habitat in the region. There are portions of the nomination area that provide special habitats, such as nesting areas for ferruginous hawks, that are important but not unique since they nest on other lands in addition to these areas.

The Bitter Creek portion, as defined by the WSA boundary, is considered to meet the importance criterion 2. This factor is due to the unique combination of the lack of road development and the variety of habitats represented, supporting a diversity of grassland wildlife species. Included in this area are excellent examples of prairie riparian, wetland, grassland, woody draw, and breaks habitats.

The nomination area does not meet Importance Criterion 3. The wildlife habitat within the nomination area does not warrant protection to satisfy national priority concerns or to carry out the mandates of FLPMA.

Importance criteria 4 or 5 do not apply for wildlife resource.

### **Natural System/Vegetation**

The nomination area as a whole is not more than locally significant (Importance Criterion 1) from a natural system or vegetation standpoint. There are 15 other public land areas within the Great Plains-Shortgrass Prairie Province which include blocks of 100,000 acres or more with vegetation comparable to the potential natural community as described by Kuchler (1966) (refer to Attachment 2).

From a natural systems standpoint, the entire nomination area does not possess unique qualities outlined in Criterion 2. The proximity of the Canadian Grasslands National Park to the nomination area is a unique circumstance; however, is not considered significant in terms of the effect on the natural system.

The Bitter Creek WSA portion is unique because of the lack of influence of developments and roads and is exemplary of a properly functioning prairie ecosystem. Included in the BCWSA are a variety of natural vegetation types; wetland, riparian, woody draw, prairie grassland, and badlands. While many of the other 15 comparable areas include these vegetation types, no other area has this rich variety of types in combination with lack of developed roads and scenic intrusions. Therefore Bitter Creek, as defined by the wilderness study area boundary, is deemed to meet the Importance Criterion 2.

From a natural system standpoint, the entire nomination area has not been recognized as warranting protection in order to satisfy national priority concerns or the carry out the mandates of FLPMA (Criterion 3).

Criteria 4 and 5 do not apply for the natural systems process.

### **Paleontological Resources**

The importance criteria were not considered as a result of the area not meeting the relevance criteria for paleontological resources.

### **Natural Hazards**

There are no natural hazards identified in the nomination area.

## Resource Description

### Scenic Values

The nomination area maintains a good representation of the shortgrass prairie ecosystem with minimal visual intrusions which do not detract from the scenic experience when viewed from the distance. Scenic qualities include the vast, unhampered domain; lack of synthetic facilities such as paved roads, buildings, 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.

Except for the Hinsdale-Thoeny-Opheim and Snake Creek county roads (refer to Map 2), the road system has a low-profile and does not obstruct or compromise the scenery. An occasional road sign may be present near the townsites of Thoeny and Snake Creek which lie within the nomination area; however, on public lands, road signs are generally absent.

An inventory of the visual resources was completed during development of the Prairie Potholes Vegetation and Missouri Breaks Grazing EISs. The inventory evaluated the visual features of land, water, vegetation and structures which provided the subsequent delineation of scenic quality, visual sensitivity, visual zones and visual resource management (VRM) classes. Scenic quality, sensitivity to changes in the landscape and distance zones were factored together to determine the VRM classes. From this inventory, BLM lands have been placed in one of four VRM classes. For a definition of each class, refer to page 25 of the October 1992 Final JVP RMP (Volume One).

The nomination area contains Class II and Class IV areas. Class II areas are managed to retain the existing character of the landscape. Class II areas are represented in the Frenchman Creek and Rock Creek areas and most of the Bitter Creek WSA. Each are described below:

*Frenchman Creek.* The Frenchman Creek area from the United States - Canadian border forms the western most portion of the nomination area. This area is rugged and contains approximately a 1/2 mile wide valley. The valley bottom is privately owned, mostly irrigated hayland. Outward from this valley are found steep bluffs, cliffs, and narrow tributary coulees. The unit contains many interesting erosional details which contribute to the scenic elements of landform and color. The exposed rock and soil along with the grasses and riparian vegetation provide a variety of colors. The area contains some cultural modifications such as houses, roads, hayfields, and powerlines.

*Rock Creek Canyon.* The Rock Creek Canyon consists of a steep narrow canyon, rimrock, and a perennial stream. A slow winding stream flanked with near vertical walls of various clays are topped by 10 to 20 feet thick beds of sandstone rimrock. Some isolated bends show thick stands of cottonwood and willow with a variety of other riparian species. The near vertical slopes and most of the plateaus show only infrequent juniper. The valley bottom includes ranch buildings, a graveled road, and irrigated fields and is mostly private land.

*Bitter Creek.* The Bitter Creek WSA is the most natural area within the nomination area and contains 59,660 acres. The WSA contains 59,660 acres of BLM land that is separated into three roadless segments; Bitter Creek South, Bitter Creek West, and Bitter Creek East.

Bitter Creek South contains 8,605 acres and is separated from the Bitter Creek West and Bitter Creek East units by the Northern Border Pipeline road which latitudinally transacts the south unit from the

northern two units. This road blends in well with the surrounding landscape, but compromises the WSA value of solitude, as it offers increased motorized access on public lands. In the Bitter Creek South unit, a watchable wildlife route is situated on the eastern rim where hawks and eagles can be seen soaring over the WSA. This rim differs in elevation by as much as 600 feet from the floor of the WSA. Vegetative and geological features within this area tend to screen out some obtrusive elements, and enhances the values of naturalness and solitude. Existing features include reservoirs, a vehicle way, fencing, and one corral.

Bitter Creek West unit contains 11,105 acres. The Northern Border Pipeline road defines the boundary in the south, and roads define the boundary on the east and north sides. The topography of this area is rugged in the west containing shale mounds and drainage channels; converging with the eastern section of plateaus, potholes, and rolling terrain. Solitude and naturalness are enhanced by the existing landforms in the western section, while the eastern section is compromised by the effects of the existing road. Existing features include reservoirs and fencing.

Bitter Creek East unit contains 39,950 acres. This is the most natural area where solitude is enhanced by the sparsely vegetated bowls exist where thickets of aspen and cottonwood trees along with buffalo berry and other shrubs enhance the area. Existing features include reservoirs, fencing, and roads on the west portion which define this unit.

Land characteristics of the Bitter Creek WSA include rolling terrain, denuded badlands, and lush riparian areas. The major drainages of the nomination area support shrubs, willows and cottonwood trees. Large plateaus converge into rugged eroded breaks. There are some high cliffs and classic badlands type areas. "Blow-out" type of landscape exist where the shale soils are held in place by horizontal juniper, buffalo berry, and a variety of other small shrubs.

Nightfall transforms the Bitter Creek WSA into darkness with illumination from the celestial sphere. The lack of facilities and roads enhance the night sky. In other areas, competition between artificial lighting and the night sky often results in a compromising view. Only major constellations are visible with the unaided eye in moderately developed areas. However, in the WSA area, the celestial bodies outshine the darkness of the landscape and can be an intriguing source of questions and appreciation to the natural world and the universe.

## **Cultural**

Of the 274 known archaeological and historic sites within the nomination area, 211 and 63 lie within the Valley and Phillips Resource Areas, respectively. The prehistoric sites were classified into four categories (as per Ruebelmann et. al. 1984) as described below:

1. *Habitation Sites* characterized by the presence of one or more of the following features:
  - a. scatters of discarded tools, lithic waste, bone waste, fire cracked rock or pottery in association.
  - b. hearths and other remains of fires (like fire cracked rock) concentrations, charcoal, ash, and clusters of rock in and around a pit.
  - c. cairns, defined as groups or cluster of boulders that served as utility platforms or location markers.

- d. tipi rings or stone circles.
2. *Procurement Sites*. These are indicated by the presence of deposit of bones and artifacts at the base of a cliff or exposed in a ravine. Drive line (cairn alignments) might also be associated with these sites.
3. *Industrial sites* characterized by the presence of non-diagnostic lithic debris and artifacts associated with the manufacture of stone tools.
4. *Ritual sites* characterized by the presence of such features that suggest ceremonial, social, and political activities. Within the nomination area, these include large diameter rings, burials, stone effigies, and petroglyph boulders.

Habitation sites account for 89 percent of the sites within the nomination area. The size of the habitation sites range from single cairns and rings to hundreds of features.

Procurement sites (< 1 percent of the known sites) within the nomination area are limited to bison kills. Bison kills are known from traps and jumps. This site class represents approximately 3 percent of the recorded sites in the PRA. Technically, there are no sites just confined to bison kills in Valley County; however, 2 kill sites are associated with large habitation sites. The low percentage of procurement site is consistent with other data from northern Montana. Procurement sites are usually interpreted as significant as they often contain chronological and functional indicators.

Industrial sites (< 1 percent of known sites) are limited to one lithic scatter in the PRA and 2 in the VRA. Like the procurement sites, this class is under represented since many lithic scatters are recorded in association with habitation features. Quartzite is the most common material used in the manufacture of stone tools with limited amounts of finer grained materials present (S. Deaver 1988). Given the pattern of raw material availability, no large quarry sources would be expected. Instead, the pattern seems to be one of exploiting local available materials found in glacial till and in high plains tertiary gravel.

Ritual sites (1 percent of known sites) are limited to one prehistoric burial in the PRA and 2 sites with large diameter rings in the VRA. Additional ritual features are found at one site in the PRA and one site in the VRA. The site in Phillips County contains a petroglyph boulder and stone effigy; however, no pattern can be determined for the effigy (Davis 1975). This site in the VRA is described as having spokes running from a central ring (Tratebas and Lahren 1982).

A fifth category for historic sites was also included. A total of 24 historic sites (9 percent of known sites) are recorded in the nomination area. The historic towns and transportation system were not included in the 24 sites. Only three of the historic sites are not directly related to the homestead era of 1910 to 1920. These sites include one historic grave of unknown age, a bridge and an irrigation canal.

Overall, the site pattern is consistent with that found elsewhere in northern Montana. Most of the sites are related to domestic activities and are believed to be related to habitation. Most of the historic sites are related to the homestead era. Relatively few sites of other classes exist.

## **Wildlife**

Migratory game, upland game and non-game birds; raptors; game and non-game resident wildlife; fur-bearing; and predatory wildlife species present in the nomination area either year-long or seasonally

are listed in Attachment 3. In addition, amphibians and reptiles are listed. The predominant wildlife species in the area are ones that migrate.

### **Wildlife Habitat**

The wildlife habitat is a grassland type with small shrub or sagebrush types along the drainages. In addition to these riparian areas, there are a few scattered woody draws on the eastern and western edges of the area. Those on the eastern edge are more typical of Midwestern areas with silverberry, hawthorn, juneberry, and chokecherry.

The nomination area contains productive waterfowl habitat, both natural and created wetlands. There has been an increase in waterfowl habitat in this area primarily related to the increase in the number and density of water impoundments constructed by BLM. The inclusion of islands in impoundments has been a great asset to Canada goose production.

Sage grouse habitat is restricted primarily to the silver sage coulees. The sage is confined to relatively small areas all of which are important to sage grouse. Sage grouse crucial (year-long) habitat occurs on approximately 10% of the public lands.

Sharp-tailed grouse habitat can be characterized by hills, benchland, and other areas of rolling topography with a good stand of old herbage or residual cover, composed chiefly of grasses. Sharp-tailed grouse crucial (year-long) habitat occurs on 20% and medium value (year-long) habitat on 30% of the public lands.

Pronghorn antelope summer habitat is extensive throughout the area. The areas consist primarily of a grassland association which has an abundance and variety of various forbs and fringed sage. Silver sagebrush is limited to coulee bottoms and is used extensively for winter habitat if available. Winter habitat in both quality and quantity are limited. Large numbers of Canadian pronghorn migrate through the area during severe winters to sagebrush coulees near Glasgow. No fencing problems are currently hampering migration of pronghorns. For antelope, the crucial winter habitat occurs on 5%, high value (summer) habitat on 25%, and medium value (year-long) habitat on 60% of the public lands.

Mule deer habitat is confined primarily to the prairie "breaks" of Rock Creek, Bitter Creek, South Fork of Bitter Creek, South and West Forks of Rock Creek, Eagle's Nest Coulee, and Frenchman Creek. Additional unnamed coulees in those areas are important habitat for mule deer. Productivity of the mule and white-tail deer populations in this area is related closely to the quality and quantity of preferred vegetative species. Browse is the most important species during the winter. Available winter forage is the primary factor limiting the carrying capacity of winter habitat. For white-tailed deer, high and medium value (year-long) habitat occurs on 1% of the public lands. For mule deer, high value (year-long) habitat occurs on 20%, medium value (year-long) habitat on 20%, and low value (year-long) on 10% of the public lands.

### **Fisheries**

There are two fishing reservoirs (Gay Reservoir and Hose Reservoir) that have been stocked with rainbow trout on public land within the nomination area.

## **Raptors**

Rock Creek Canyon and Rock Creek-Thoeny area are key raptor areas. These areas contain nesting hawks and have high concentrations of raptors during migration. The Montana Department of Fish, Wildlife, and Parks (MDFW&Ps) conducts a census of raptors from Hinsdale to Opheim each spring.

## **Special Status Species**

Special status species include the following:

- (1) Proposed species - species that have been officially proposed for listing as threatened or endangered (T/E) by the Secretary of the Interior,
- (2) T/E species - species officially listed as threatened or endangered by the Secretary of the Interior under the provisions of the Endangered Species Act,
- (3) Candidate species - species designated as candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service,
- (4) State listed species - species proposed for listing or listed by a state in a category implying potential endangerment or extinction,
- (5) Sensitive species - species designated by a BLM State Director as sensitive. Animal species for Montana, North Dakota, and South Dakota were designated on a Bureau of Land Management Special Status Species List on May 6, 1994. This designation also includes the former U.S. Fish and Wildlife Service category 2 species.

Special status species known to exist in the nomination area are listed in Attachment 4.

The State of Montana has designated wildlife species that are of special concern. Those species known to exist in the nomination area are noted in Attachment 3.

## **Natural System/Vegetation**

### **Upland Vegetation**

The Mixed-Grass Prairie ACEC nomination area is within the Grama-Needlegrass-Wheatgrass (*Bouteloua-Stipa-Agropyron*) Potential Natural Vegetation type (Kuchler, 1966). This vegetation type encompasses most of eastern Montana and a portion of eastern Wyoming and is a sub-delineation of the Great Plains-Shortgrass Prairie Province (Bailey, 1976). The Great Plains-Shortgrass Prairie Province stretches from Texas and includes portions of Oklahoma, Colorado, Kansas, Nebraska, and most of North Dakota and South Dakota in addition to the area of Montana and Wyoming.

Bailey (1995) in "Description of Ecoregions of the United States" identifies the Ecoregion as "Great Plains-Palouse Dry Steppe". It is the largest Ecoregion in the United States, comprising 8.1 percent of the total land area of the United States.

Shortgrass prairie rangeland types found in Montana extend into North Dakota, South Dakota and Wyoming total nearly 33 million acres. There has been a slight increase of approximately 90,000 acres in this region between 1982 and 1992 primarily to the Conservation Reserve Program (Natural Resources Conservation Service 1994). The grama-needlegrass-wheatgrass grassland type is not imperiled by changing land use. Only 7.39 percent of the type is cultivated (LaRoe et. al. 1995).

The vegetation found within the nomination area is currently consistent with the Potential Natural Community as described by Kuchler. Kuchler's narrative description of the type lists the order of dominance as western wheatgrass, needle and thread, and blue grama. This is the order of dominance found in the nomination. Other species important in the association as listed by Kuchler are:

- Bluebunch wheatgrass
- Fringed sagewort
- Hairy goldenaster
- Prairie junegrass
- Plains muhly
- Sand dropseed
- Little bluestem
- Threadleaf sedge
- Broom snakeweed
- Dotted gayfeather
- Sandberg bluegrass
- Green needlegrass

The Kuchler list does not include all significant species, notably, silver sagebrush is not listed.

The term "Mixed Grass" does not really fit the area, it is actually in the "shortgrass prairie" according to Kuchler. This is true in a broad sense for the rolling prairie lands. The "breaks" topography, however, is dominated by mid-grasses; western wheatgrass, green needlegrass, prairie sandreed, little bluestem, needle and thread and has a greater component of shrubs and forbs than the upland prairies. In Bitter Creek WSA, Opeheim Hills, Rock Creek Canyon and Frenchman Breaks, there are wooded draws which include buffalo berry, Rocky Mountain juniper, green ash, chokecherry and less commonly, aspen. The best examples of woody draws, with the greatest variety of species, are within the Bitter Creek WSA.

Under contract with BLM, the Montana Natural Heritage Program sampled 53 plots in the nomination area in 1993 to determine the presence of threatened, endangered or rare plant species or communities. No threatened/endangered plant species or communities were found (Cooper 1993).

Current upland vegetative ecological status and trend are depicted on Attachment 5.

Crested wheatgrass seedings on previously farmed LU land and "go-back" farmed lands (lands that were allowed to revegetate naturally) are widespread in the area. Based on measurements from aerial photos, 7,480 acres of public lands in the nomination area are crested wheatgrass seedings.

An estimated 50,000 to 100,000 acres<sup>3</sup> of LU land in the nomination area were farmed during the period of 1916 to 1936. Since there was also a substantial amount of public domain land that was homesteaded and not "proved up on", the above estimate which involves LU land only, is conservative. Most of this land was simply abandoned and not reseeded following purchase by the federal government under the Bankhead-Jones Farm Tenant Act. These lands are generally growing the potential natural community and to the casual observer are generally indistinguishable from undisturbed sites. Anyone familiar with the homesteading history, however, can easily distinguish the outlines of old fields due to the moldboard plow furrows on the outside and the rock piles on the property lines or in the coulee heads.

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<sup>3</sup>Based on the following calculation: 350,000 public land acres within the nomination area X 60% LU land = 210,000 acres of LU land. 210,000 acres X 25% to 50% actually plowed (personal observation) = 50,000 to 100,000 acres actually plowed.

The intermingled private lands include dryland cropland, irrigated hayland, tame pasture and native rangeland. The farm lands are concentrated in the bottom lands on Frenchman, Rock, Willow, McEachran and Bluff Creeks and in the Thoeny and Genevieve areas. The northwest and southeast portions of the nomination area, the Bluff Creek to Frenchman area and the Bitter Creek to Deep Creek areas have relatively few crested wheatgrass seedings and little farming. The Bitter Creek Wilderness Study Area is the portion least impacted by development and contains a variety of plant communities in healthy condition, including riparian, wetland, shortgrass prairie benches, woody draws (aspen, hawthorn, chokecherry, buffalo-berry, silverberry etc.) and shale badlands.

### **Riparian Vegetation**

Rock Creek and Frenchman Creek are the only perennial streams in the nomination area. In the VRA, the following "priority riparian areas" were identified in the JVP RMP. These are intermittent tributaries to Rock Creek which include public land ownership of the riparian area.

- South Creek
- Deep Creek
- Bluff Creek
- Eastfork Crow Creek
- Willow Creek
- Chisholm Creek
- Eagle's Nest Creek
- Southfork Rock Creek
- McEachran Creek
- Crow Creek
- Snake Creek
- Eastfork Willow Creek
- Bitter Creek

The JVP RMP lists 110.8 miles of public ownership on these streams. In 1995, an assessment of all potential riparian areas was made to determine all intermittent and ephemeral streams and to subsequently determine the habitat types and health/function status of all streams in the area. This resulted in 19 additional streams being classified as intermittent riparian areas within the nomination area in the VRA for a total of 264.2 miles of stream. Three streams totaling 14.9 miles were identified and inventoried in the PRA portion of the nomination area.

Much of the riparian land in the nomination area is privately owned; Frenchman, Rock, Willow, McEachran, and Bluff Creek have irrigated hay lands along the creek.

### **Riparian Habitat Types**

The vegetation of the riparian zones has been classified into habitat types by the Montana Riparian Association (MRA) and BLM personnel on all streams in the nomination area. The dominant vegetation of the stream channels is a sedge-rush and/or streambank willow community at the wettest zone with rose-snowberry, buffaloberry and silver sagebrush with western wheatgrass, green needlegrass, 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.

Leafy spurge has invaded the Rock Creek drainage and has altered the vegetation of some of the riparian areas entering Rock Creek. There is about 2,000 acres of leafy spurge on all land ownerships in the nomination area. It is estimated that there is 500 acres on BLM public lands. Willow Creek, Rock Creek, Bitter Creek, Collins Creek, Chisholm Creek, Lime Creek, Burnett Creek have heavy infestations. Scattered infestations are found on Bluff Creek and McEachran Creek.

### **Riparian Health and Function**

The streams of the nomination area are largely in stable condition. Seventy-two percent of the stream miles sampled in VRA are in proper functioning condition (PFC) while 28% are functional at risk (FAR). There are zero miles in non-functional (NF) status (refer to Attachment 6). Approximately 88% of the VRA streams within the nomination area have either a rest rotation or deferred rotation grazing system<sup>4</sup>.

The streams in the PRA are under season-long grazing, of these 32% are in PFC while 68% are in FAR.

### **Paleontological Resources**

The nomination area is underlain primarily by the Judith River and Bearpaw Shale formations. Dinosaurs, mammals, crocodiles, turtles, and other reptiles, amphibians, and fish are known to be found in the Judith River formation (Cambrian, late Cretaceous, about 75 million years). Marine reptiles and invertebrates are also known to be found in the Bearpaw Shale formation which represents the last major transgression of the Western Interior Seaway in the late Cretaceous. Outcrops of these formations can be found within the nomination area; however, have not been intensively inventoried for paleontological resources. To date, there have not been any significant paleontological resources discovered within the nomination area.

### **Natural Hazards**

There are no natural hazards within the nomination area.

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<sup>4</sup>Rest rotation: Grazing management method where one pasture (of three to five pastures) is rested for a year while the remaining pastures are grazed in a planned rotating sequence of use periods.

Deferred Rotation: Grazing management method where each pasture (two to several) is grazed each year at a different time based on a planned rotation sequence.

## REFERENCES

- Bailey, Robert G., 1976. Ecoregions of the United States; RARE II Map B, Forest Service. Minor modification in consultation with R. G. Bailey, 1978.
- Bailey, Robert G., 1995. Descriptions of Ecoregions of the United States, Forest Service Misc. Pub. 1391.
- Cooper, Steven, 1993. Vegetation Ecologist, Montana Natural Heritage Program, memorandum dated August 13, 1993.
- Davis, Leslie B. 1975. Prehistory of the Whitewater-Frenchman Creek/Milk River Locality: An Introduction, 2 Volumes. Report prepared for the Whitewater School District and the Bureau of Land Management by Montana State University.
- Deaver, Sherri. 1988. Glacial Till: The Ubiquitous Quarry, Archaeology in Montana 22(1): 1-6.
- Kuchler A. W., 1966. Potential Natural Vegetation of the Conterminous United States. University of Kansas Press.
- LaRoe, E. T., G. S. Farris, C. E. Puckett, P. D. Doran, and M. J. Mac, eds. 1995. Our living resources: a report to the nation on distribution, abundance, and health of U.S. plants, animals, and ecosystems. U.S. Department of the Interior, National Biological Service, Washington, D. C. 530 pp. (page 472 Table 3).
- Montana Audubon Council, 1990. Letter nominating the Mixed Grass ACEC, November 9, 1990.
- Montana Chapter of the Sierra Club, 1990. Letter nominating the Mixed Grass Prairie ACEC, November 9, 1990.
- Montana Wilderness Association, 1990. Letter nominating the Mixed Grass Prairie ACEC, November 9, 1990.
- Montana Wildlands Coalition, 1990. Letter nominating the Mixed Grass Prairie ACEC, November 9, 1990.
- Montana Wildlife Federation, 1990. Letter nominating the Mixed Grass Prairie ACEC, November 21, 1990.
- National Wildlife Federation, 1990. Letter nominating the Mixed Grass Prairie ACEC, November 2, 1990.
- Natural Resources Conservation Service, 1994. National Resource Inventory Data, Rangeland acreage for 1992 and 1982 totals for Major Land Resource Areas in the Shortgrass Prairie region of Montana, including the portions of these units extending to South Dakota, North Dakota, and Wyoming. Data provided per fax from Doug Harrison, NRCS, Bozeman, Montana.
- Ruebelmann, George N., Burton D. Williams and Dale A. Davidson, 1984. A Cultural Resource Management Plan for the Glaciated Prairie Region of Northern Montana, Cultural Resource Management Plan prepared for the Lewistown BLM District.

Sierra Club, 1990. Letter nominating the Mixed Grass Prairie ACEC, November 28, 1990.

The Wilderness Society, 1990. Letter nominating the Mixed Grass Prairie ACEC, November 9, 1990.

Tratebas, Alice M. and Larry A. Lahren, 1982. Class II Cultural Resource Investigations on Selected Tracts of Phillips--Blain--Valley Counties, Montana, Volume 1: Prehistoric Resources, Report prepared for Park-Ohio Industries, Cleveland, Ohio by Anthro-Research, Inc., Livingston, Montana.

United States Department of the Interior, Bureau of Land Management, 1989. Final Bitter Creek Wilderness Environmental Impact Statement. Lewistown, Montana.

United States Department of the Interior, Bureau of Land Management, 1992. Final Judith Valley Phillips Resource Management Plan and Environmental Impact Statement. Lewistown, Montana.

United States Department of the Interior, Bureau of Land Management, 1979. Missouri Breaks Grazing Environmental Impact Statement. Lewistown, Montana.

United States Department of the Interior, Bureau of Land Management, 1981. Prairie Potholes Vegetation Allocation Environmental Impact Statement. Lewistown, Montana.

Attachment 1

Interdisciplinary Team Membership

Person	Responsibility
Michael R. Holbert Rick M. Hotaling	Team Leaders
David Waller	Wildlife; T/E Animals
John Fahlgren	Vegetation/Riparian; Soils; T/E Plants
Doug Melton/Stanley Jaynes	Cultural Resources
Mary Skordinsky	VRM/Scenery
Jerry Majerus	Technical Assistance

Attachment 2

Areas Determined Comparable from a  
Federal Acreage and Land Ownership Basis

Area Name	State	Public Land Acreage (1,000)	Comparability of Relevant Values			
			Wildlife	Scenic	Vegetation	Overall
Phillips Southeast	Montana	480	Yes	No	Yes	No
Phillips North	Montana	380	Yes	No	Yes	No
Little Missouri National Grasslands (Middle)	North Dakota	405	Yes	No	Yes	No
Little Missouri National Grasslands (North)	North Dakota	322	Yes	No	Yes	No
Casper North	Wyoming	426	Yes	No	Yes	No
Buffalo Gap East/Badland NP	South Dakota	358	Yes	Yes	Yes	Yes
Prairie	Montana	553	Yes	No	Yes	No
Wymont	Wyo./Mont.	380	Yes	Yes	Yes	Yes
Gillette West	Wyoming	184	Yes	No	No	No
Buffalo Gap West	South Dakota	238	Yes	Yes	Yes	Yes
Little Missouri National Grasslands (South)	North Dakota	276	Yes	Yes	Yes	Yes
Thunder Basin National Grasslands	Wyoming	368	Yes	Yes	Yes	Yes
Valley South	Montana	650	Yes	Yes	Yes	Yes

Area Name	State	Public Land Acreage (1,000)	Comparability of Relevant Values			
			Wildlife	Scenic	Vegetation	Overall
Phillips Southwest (1)	Montana	188	Yes	Yes	Yes	Yes
Phillips Southwest (2)	Montana	180	Yes	Yes	Yes	Yes
Musselshell (Big Dry)	Montana	300	Yes	No	No	No
Musselshell (Judith)	Montana	400	Yes	no	Yes	no
McCone	Montana	468	Yes	no	no	no

Attachment 3

Wildlife Species in The Nomination Area

**Mammals**

- longtail weasel
- striped skunk
- bobcat
- Richardson ground squirrel
- beaver
- northern grasshopper mouse
- prairie vole
- porcupine
- mountain cottontail
- pronghorn antelope
- mink
- coyote
- blacktail prairie dog
- thirteen-lined ground squirrel
- deer mouse
- meadow vole
- sagebrush vole
- whitetail jackrabbit
- mule deer
- elk
- badger
- red fox
- white-footed mouse
- muskrat
- white-tail deer

**Birds**

- common loon
- Canada goose
- pintail
- shoveler
- ruddy duck
- red-tailed hawk<sup>21</sup>
- ferruginous hawk<sup>20, 22</sup>
- northern harrier<sup>21</sup>
- merlin<sup>20, 21</sup>
- sharp-tailed grouse
- gray partridge
- killdeer<sup>21</sup>
- long-billed curlew<sup>20, 22</sup>
- upland sandpiper<sup>20, 21</sup>
- Wilson's phalarope
- common tern
- snowy owl
- common nighthawk<sup>21</sup>
- eastern kingbird<sup>21</sup>
- northern rough-winged swallow<sup>21</sup>
- eared grebe
- mallard
- blue-winged teal
- canvasback
- northern goshawk<sup>5, 6</sup>
- Swainson's hawk<sup>21</sup>
- golden eagle<sup>20, 21</sup>
- gyrfalcon
- American kestrel<sup>21</sup>
- sage grouse
- sandhill crane
- black-bellied plover
- willet
- marbled godwit
- Franklin's gull
- mourning dove<sup>21</sup>
- burrowing owl<sup>20, 22</sup>
- northern flicker<sup>21</sup>
- horned lark<sup>21</sup>
- barn swallow<sup>21</sup>
- tundra swan
- gadwall
- American widgeon
- lesser scaup
- Cooper's hawk<sup>20, 7</sup>
- rough-legged hawk
- bald eagle
- prairie falcon<sup>20, 21</sup>
- pheasant
- coot
- common snipe
- Baird's sandpiper
- American avocet
- California gull
- great horned owl
- short-eared owl<sup>21</sup>
- western kingbird<sup>21</sup>

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<sup>20</sup>Montana Species of Special Concern

<sup>21</sup> Neotropical migratory bird

<sup>22</sup> Neotropical migratory grassland bird which may have declining populations

- cliff swallow<sup>21</sup>
- sage thrasher<sup>21</sup>
- loggerhead shrike<sup>22</sup>
- western meadowlark<sup>21</sup>
- cowbird
- grasshopper sparrow<sup>21</sup>
- savannah sparrow<sup>21</sup>
- Brewer's sparrow<sup>20, 22</sup>
- chestnut-collared longspur<sup>22</sup>
- northern oriole<sup>21</sup>
- black-billed magpie
- American robin<sup>21</sup>
- European starling
- red-winged blackbird<sup>21</sup>
- rufous-sided towhee<sup>21</sup>
- Baird's sparrow<sup>20, 22</sup>
- vesper sparrow<sup>20, 21</sup>
- McCowan's longspur<sup>22</sup>
- snow bunting
- house sparrow
- common crow
- Sprague's pipit<sup>22</sup>
- common yellowthroat<sup>21</sup>
- Brewer's blackbird<sup>21</sup>
- lark bunting<sup>22</sup>
- lark sparrow<sup>21</sup>
- chipping sparrow<sup>21</sup>

### **Fish**

- flathead minnow
- longnose sucker
- black bullhead
- rainbow trout<sup>8</sup>
- brassy minnow
- shorthead redhorse
- stonecat
- white sucker
- lake chub
- carp

### **Amphibians and Reptiles**

- tiger salamander
- racer
- prairie rattlesnake
- painted turtle
- garter snake
- leopard frog
- bullsnake

### **Invertebrates**

- caddisflies
- dragonflies
- flies
- bivalve margaritifera
- beetles
- damselflies
- physa snail
- true bugs
- mayflies
- lymnae snails

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<sup>23</sup> Located in Gay and Hose Reservoirs only

Attachment 4

Special Status Species

Species	Current Status	Known to be Present	Potential Habitat	Comments
Bald Eagle	Threatened	Yes		Migrate through and stay in the area during the spring and fall, but no nests have been found. Limited nesting habitat available.
American Peregrine Falcon	Endangered	Yes		Migrate through and could stay for a short time during the spring and fall migrations. Proposed to be delisted.
Black-footed ferret	Endangered		Very limited	None known. The prairie dog towns provide limited habitat due to their small size.
Whooping crane	Endangered		None	Could migrate through the area during spring and fall, none have been observed in the nomination area.
Piping plover	Threatened		Limited	None have been observed in the nomination area during inventories.
Mountain plover	Candidate	Yes		Potential shortgrass prairie habitat, but no sightings have been reported in the nomination area.
Northern Swift fox	Candidate	Yes		Have been released north of the area in Canada. One sighting has been reported in this area due to outmigration. Sightings have occurred east and west of the area.
Ferruginous Hawk	Sensitive	Yes		Present within nomination area and have established nests in rougher terrain.

Species	Current Status	Known to be Present	Potential Habitat	Comments
Loggerhead Shrike	Sensitive	Yes		Plentiful in the shrubby riparian areas.
White-faced Ibis	Sensitive		Limited amount of marsh habitat available	None known in this area, but have been observed in nearby areas.
Northern goshawk	Sensitive	Yes		Does not contain the preferred habitat which is a conifer forest.
Baird's sparrow	Sensitive	Yes		Present within the nomination area, have been located at scattered sites throughout the area.
Black tern	Sensitive		Limited amount of habitat (lakes & marshes) available	None known in this area, but have been observed during migration in a nearby reservoir.
Canvasback	Sensitive	Yes		Migrate through and stay in the area during the spring and fall.
Common loon	Sensitive	Yes		Migrate through and stay in the area during the spring and fall.
Long-billed curlew	Sensitive	Yes		Contains the preferred habitat, and fairly common during breeding season
Swainson's hawk	Sensitive	Yes		Have established nests and occasionally is seen
Burrowing owl	Sensitive	Yes		Breeds and periodically is seen
Blacktail prairie dog	Sensitive	Yes		There are three towns (totaling 300 acres) on BLM lands in this area.

Attachment 5

Upland Vegetation Ecological Condition By Seral Stage

Potential Natural Community (PNC)	Late Seral	Mid Seral	Early Seral	Unclassified	Total
7,454	174,032	142,431	450	13,351	344,700

Upland Vegetative Trend

Upward	Static	Downward
193,944 acres	150,766 acres	0 acres

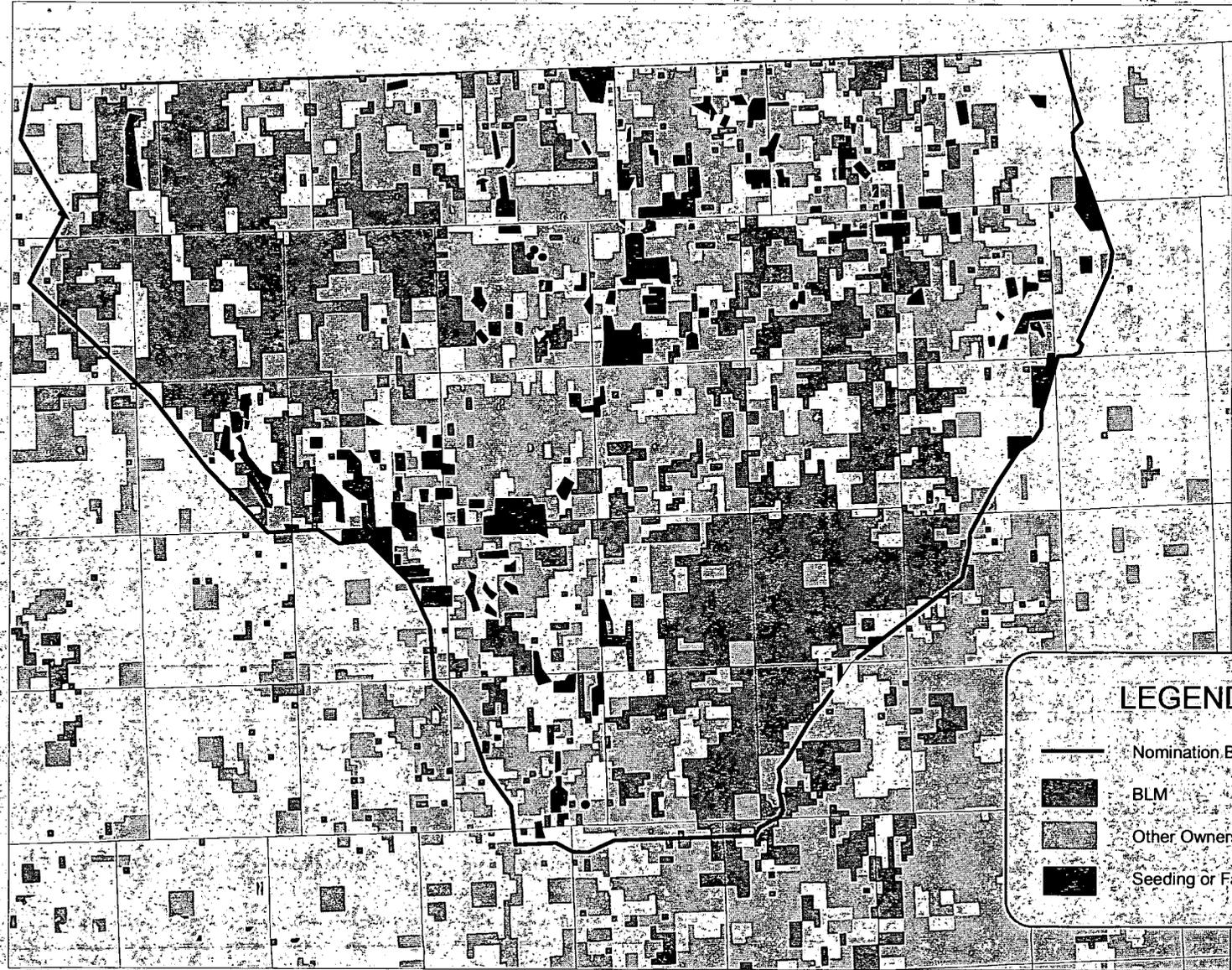
Attachment 6

Stream Functioning Condition and Miles

Stream Name	Proper Functioning Condition (Miles)	Functional-at-Risk (Miles)	Non-Functional (Miles)
Ash Coulee		6.5	
Bitter Creek	2.6	8.3	
Bluff Creek	8.3	1.4	
Burnett Creek	1.5		
Canyon Creek		2.9	
Chisholm Creek	26.6		
Coal Mine Coulee	7.0		
Cow Coulee	6.9		
Crow Creek	13.8	2.3	
Deep Creek	14.8	9.8	
E. Fork Crow	17.4		
Eagle's Nest		7.0	
Frenchman Cr	0.6		
Horse Creek	0.5		
Jack Creek	0.7		
Lime Creek		2.0	
Little Snake	1.0		
Lone Tree Cr.	6.7		
Long Coulee	7.0		
McEachran Cr.	1.9		
Morgan Creek	1.7		
N. F. South Cr.	0.7	6.1	
Rock Creek	27.8		
Shaw Coulee		3.5	
Snake Creek	13.9	1.1	

Stream Name	Proper Functioning Condition (Miles)	Functional-at-Risk (Miles)	Non-Functional (Miles)
South Creek	15.2		
Tomato Can Cr.	5.3		
W. F. Rock Cr.	0.5		
W. F. Porcupine	3.5		
W. F. Willow	2.1		
Willow Creek	1.3	24.0	
Frenchman (PRA)	2.4	1.1	
Sand Ck.. (PRA)		4.6	
Cottonwood PRA	2.3	4.5	
Totals	193.0 (69%)	85.1 (31%)	0

# MIXED GRASS PRAIRIE ACEC NOMINATION

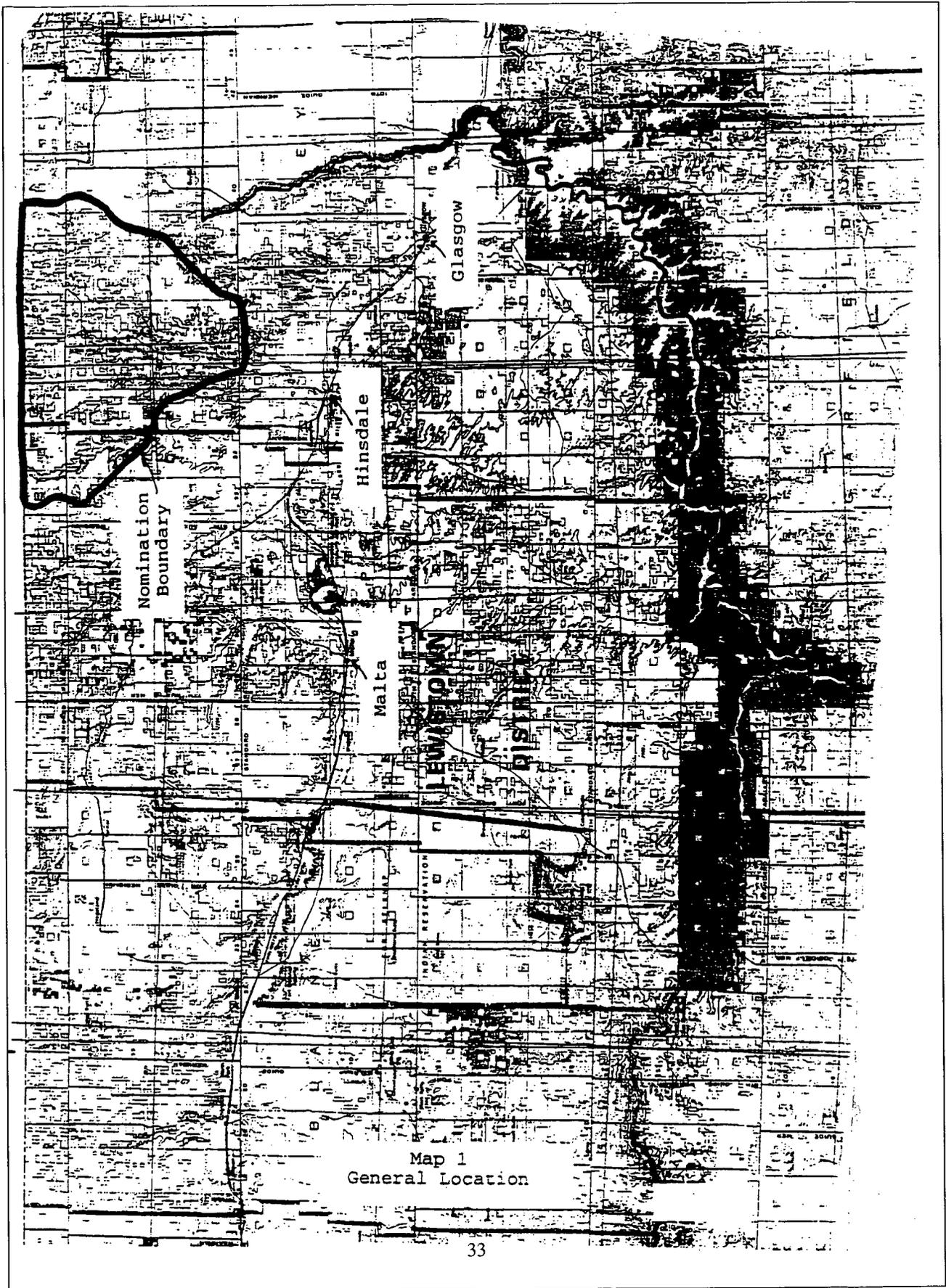


## LEGEND

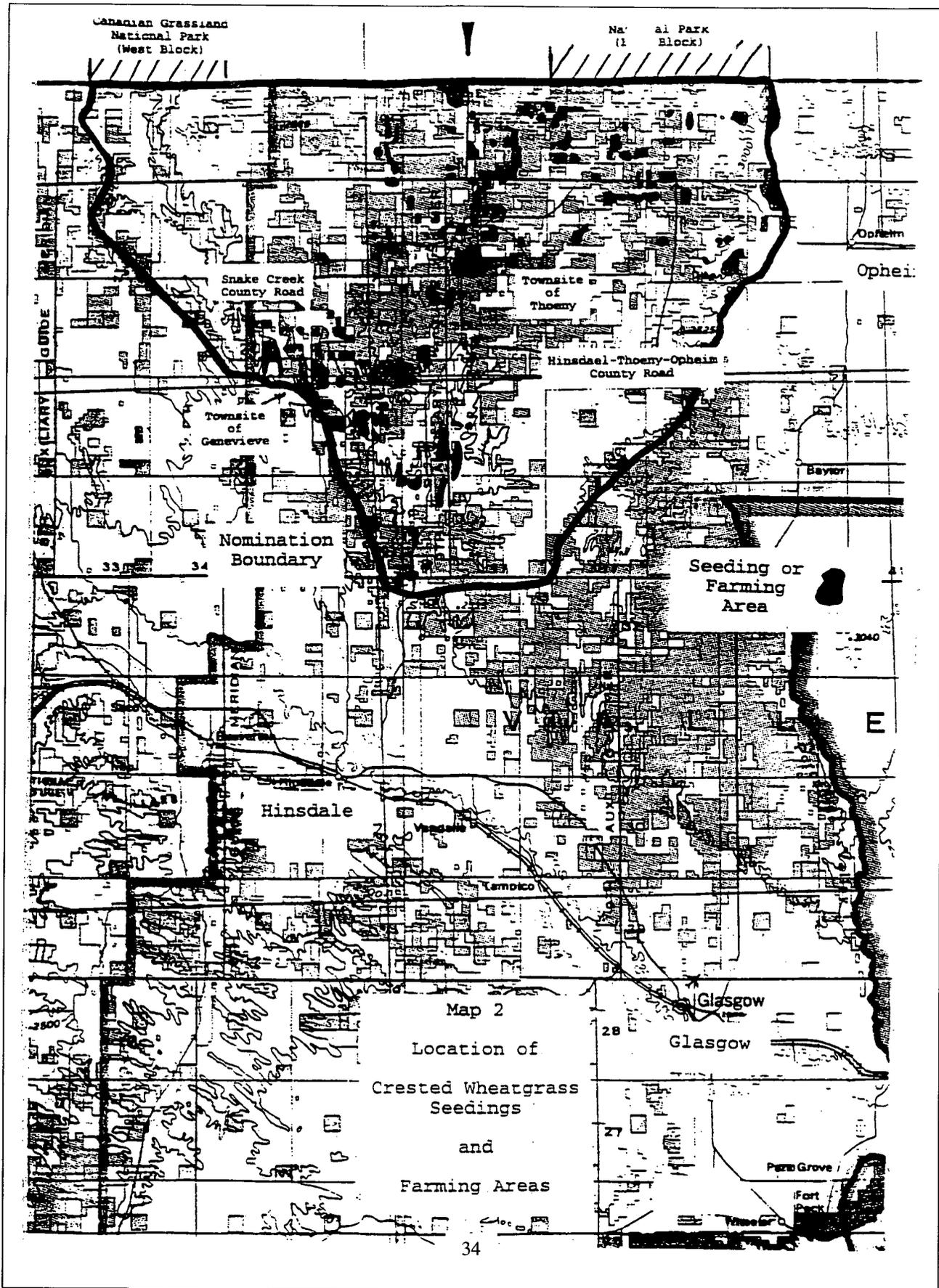
- Nomination Boundary
- BLM
- ▨ Other Ownership
- ▩ Seeding or Farming Area

82

32



Map 1  
General Location



# APPENDIX C

## MOUNTAIN PLOVER OIL AND GAS STIPULATION FOR ALTERNATIVE A

### TIMING

**Resource:** Wildlife - Mountain Plover.

**Stipulation:** Surface use is prohibited from April 1 to July 31 within 1/4 mile of occupied nesting habitat for mountain plovers. This stipulation does not apply to the operation and maintenance of production facilities.

**Objective:** To protect the habitat of the mountain plover, a candidate species identified by the USFWS.

**Exception:** An exception may be granted by the authorized officer if the operator submits a plan which

demonstrates that the proposed action will not affect the mountain plover or its habitat. If the authorized officer determines that the action may or will have an adverse effect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated.

**Modification:** The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area are no longer critical to the mountain plover.

**Waiver:** The stipulation may be waived if the authorized officer determines that the portion of the lease under the restriction is no longer occupied by the species for nesting habitat.



# APPENDIX D

## MOUNTAIN PLOVER OIL AND GAS STIPULATION FOR ALTERNATIVE B

### TIMING

**Resource:** Mountain Plover ACEC

**Stipulation:** A seasonal restriction is placed on oil and gas activities. Surface use is prohibited from April 1 to July 31, except for routine operation and production activities of short duration. Geophysical exploration is not be allowed from April 1 to July 31.

The following measures apply for any oil or gas well completed as a producer.

1. Production facilities would be located off the primary habitat within the ACEC. Facilities include, for example, the treater and the storage tanks. The pump unit would not be included. The primary habitat is the hardpan area (Vaeda silty clay soils) the Nuttall's saltbush habitat on the valley bottoms. The secondary habitats are on the gentle rises on either side of the valleys.
2. Pipeline and road construction is not be allowed from April 1 to July 31 in the primary habitat.
3. Special projects (e.g. work over rigs, pipeline maintenance) during the period April 1 to July 31 require an inventory to determine if occupied nesting habitat occurs. The inventory would have to be completed by a qualified biologist using BLM approved procedures. If

there are occupied nests within 1/4 mile of the proposed activity, mitigation could include the use of a temporary road or with travel in the early morning or late afternoon but no travel from 11:00 a.m. to 4:00 p.m. If there are no occupied nests within 1/4 mile of the proposed activity, special mitigation measures do not apply.

**Objective:** To protect the habitat of the mountain plover within the Mountain Plover ACEC. The mountain plover is a proposed threatened species identified by the USFWS. This stipulation would reduce the disturbance to mountain plovers during breeding season.

**Exception:** Emergency projects are excepted. An exception may also be granted by the authorized officer for special projects during the period April 1 to July 31. For special projects, the operator must submit a plan, including an inventory of occupied mountain plover nesting habitat, which demonstrates that the proposed action will not affect the mountain plover or its habitat.

**Modification:** None.

**Waiver:** The stipulation may be waived if the authorized officer determines that the portion of the lease under the restriction is not located in the primary habitat and if the facilities will not adversely affect the mountain plover or its habitat.

