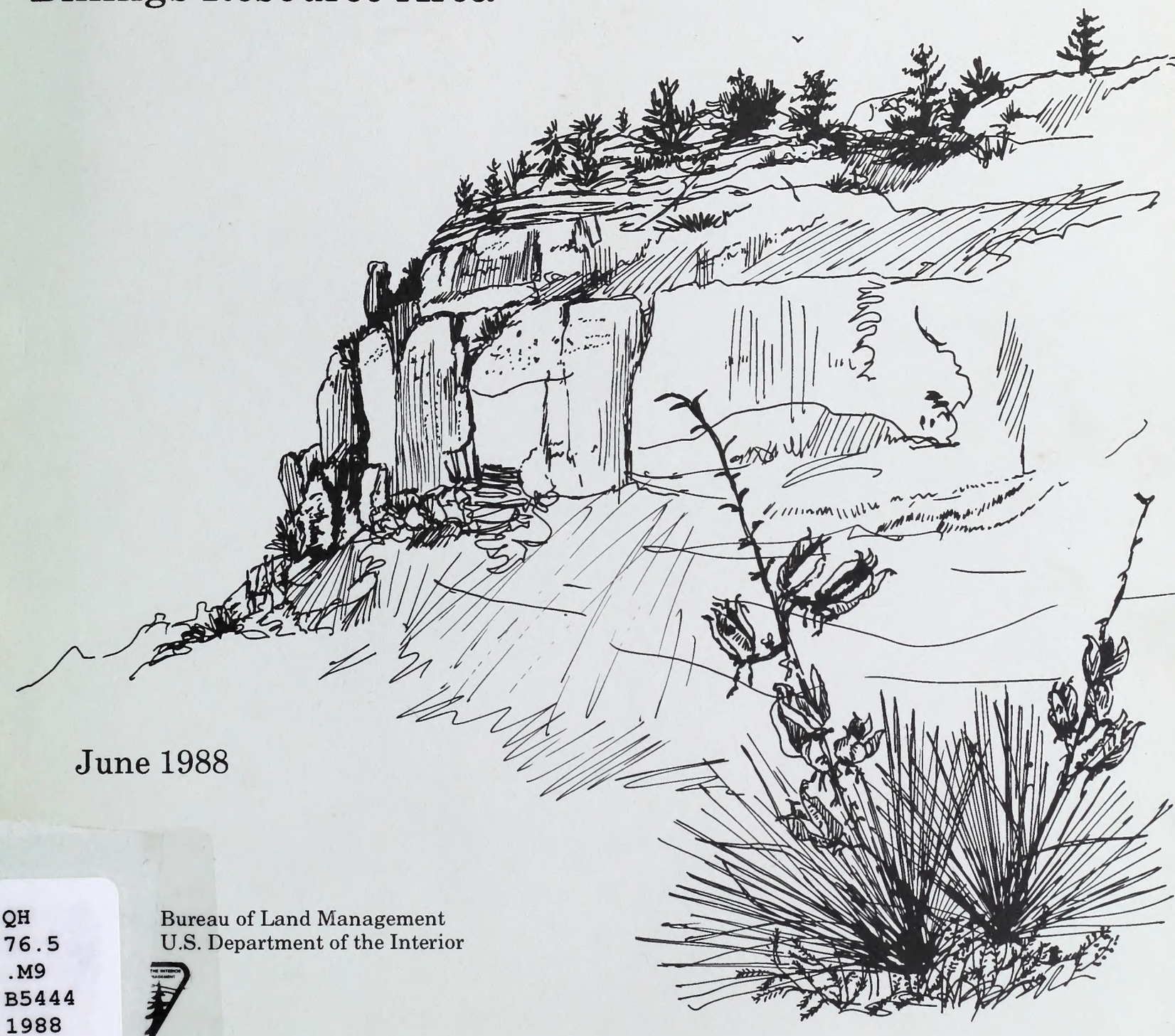
FINAL
Wilderness

ENVIRONMENTAL IMPACT STATEMENT
Billings Resource Area



June 1988

Bureau of Land Management
U.S. Department of the Interior

BLM-MT-ES-88-003-4332

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

FINAL

WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

for the

BILLINGS RESOURCE AREA BILLINGS, MONTANA

Bureau of Land Management
Miles City District Office
Billings Resource Area Office
Billings, Montana

June 1988

Marvin LeNoue

State Director

WILDERNESS
ENVIRONMENTAL IMPACT STATEMENT
for the
BILLINGS RESOURCE AREA
BILLINGS, MONTANA

RESPONSIBLE AGENCY: U.S. Department of the Interior, Bureau of Land Management

Draft ( ) Final (X)

Administrative Action ( ) Legislative Action (X)

ABSTRACT: This final environmental impact statement describes and analyzes the environmental effects of Wilderness and No Wilderness alternatives for four Wilderness Study Areas (WSAs) in the Billings Resource Area. The study areas are Twin Coulee (6,870 acres), Pryor Mountain (16,927 acres), Burnt Timber Canyon (3,430 acres), and Big Horn Tack-On (2,550 acres). The proposed action is No Wilderness for Twin Coulee WSA and Wilderness for Pryor Mountain, Burnt Timber Canyon, and Big Horn Tack-On WSAs.

The Draft Environmental Impact Statement was completed as part of the Billings Resource Management Plan. This draft plan received a 90-day public review that included public hearings. The comment period began on May 10, 1983, and closed on August 9, 1983. The public comments on wilderness matters received from this review period have been incorporated into this document.

For further information contact: Billy McIlvain, Area Manager
Bureau of Land Management
Billings Resource Area
810 East Main Street
Billings, Montana 59105
Telephone: 406-657-6262

SUMMARY

The purpose of the proposed action is to manage and preserve the wilderness characteristics of 22,907 acres in three WSAs and to manage 6,870 acres in one WSA without consideration for wilderness characteristics.

This environmental impact statement examines the environmental impacts that would result from the designation or nondesignation of each of the four WSAs.

For the Billings Resource Area in southcentral Montana, the Secretary of the Interior proposes to recommend 22,907 acres in three wilderness study areas (WSAs) as preliminarily suitable for wilderness designation by Congress and 6,870 acres in one WSA as nonsuitable for wilderness designation.

The following table portrays the suitability recommendation for each WSA.

Study Area	Acreage Recommended Suitable	Acreage Recommended Nonsuitable
Twin Coulee WSA (MT-067-212)		6,870
Pryor Mountain WSA (MT-067-206)	16,927	
Burnt Timber Canyon WSA (MT-067-205)	3,430	
Big Horn Tack-On WSA (MT-067-207)	2,550	
TOTALS	22,907 acres	6,870 acres

The significant environmental issues developed during the scoping process which are common to all four WSAs are impacts on wilderness values, impacts on the watershed resource, impacts on minerals exploration and production, and impacts on recreation use. For Twin Coulee WSA, the impacts on timber production and economics and the impacts on elk, mule deer, bear, and turkey habitats and populations are analyzed. Impacts on wild horse populations and management, impacts on mule deer, black bear, and bighorn sheep habitat and populations, impacts on peregrine falcon habitat, and population and impacts on cultural resources are analyzed for the other three WSAs.

ALTERNATIVES ADDRESSED

Two alternatives are examined for each of the four WSAs: Wilderness and No Wilderness (No Action). The Wilderness Alternative examines the impacts of designating each of the four WSAs as wilderness. The No Wilderness Alternative (No Action) analyzes the impacts of not designating any of the four areas as wilderness. Under the No Wilderness Alternative, management of the areas would be consistent with the existing Resource Management Plan (RMP) for the Billings Resource Area.

ALTERNATIVES AND CONCLUSIONS BY WSA

TWIN COULEE WSA

No Wilderness (Proposed Action)

The entire 6,870 acres would be recommended as nonsuitable for wilderness designation. The area would be managed without consideration for wilderness with emphasis on timber harvesting. Other uses, such as mineral development, could be allowed subject to protective stipulations.

The wilderness characteristics of the WSA, primarily naturalness, would be lost on 2/3 of the WSA and degraded on the remainder due to the harvest of 120 thousand board feet of timber annually. Erosion would increase on 151 acres due to timber harvest activities. Wild turkey populations would increase from 100 to 125 and motorized recreational use would increase from 20 visitor days annually to 170. There would be no impact on mineral exploration or production, other wildlife populations, or nonmotorized recreational use.

Wilderness

The entire 6,870 acres would be recommended as suitable for wilderness designation.

Wilderness values would be preserved. The opportunity to harvest 120 thousand board feet of timber annually would be foregone. There would be no impact on watershed values or wildlife populations. There would be no impact on minerals exploration or development due to low probability for discovery. Motorized recreation use would decline from 20 visitor days annually to none, and other recreation use would increase.

PRYOR MOUNTAIN WSA

Wilderness (Proposed Action)

The entire 16,927 acres would be recommended as suitable for wilderness designation.

Wilderness designation would statutorily preserve the area's wilderness values. Watershed conditions would improve on 11,000 acres due to improved ecological range conditions, and on 2 acres due to the cessation of mining claim maintenance. Although exploration would be prohibited, there would be no impact on mineral production due to low potential for such development. There would be a decrease in harassment of horses due to the cessation of claim maintenance and snowmobile use. There would be no impacts on wildlife populations or peregrine falcon habitat. Fifty user days of snowmobile use would be eliminated. Nonmotorized visitor use would increase. The opportunity to interpret one cultural site by signing would be foregone. There will be no impact to two archeological sites.

No Wilderness

No acreage would be recommended as suitable for wilderness designation. The area would be managed without consideration for wilderness with emphasis on wild horse management and primitive recreation. Restrictions on ORV use, oil and gas leasing, and timber harvesting would continue.

Wilderness characteristics would be slightly degraded on 6,000 acres. Watershed conditions would improve on 11,000 acres due to improved ecological range conditions. There would be no impact on wild horse populations and management, mineral exploration or development, wildlife populations, peregrine falcon habitat, recreational visitor use, and two archeological sites.

BURNT TIMBER CANYON WSA

Wilderness (Proposed Action)

The entire 3,430 acres would be recommended as suitable for wilderness designation.

Wilderness designation would statutorily preserve the area's wilderness values. Watershed conditions would improve on 700 acres. Although exploration would be prohibited, there would be no impact on mineral production due to low potential for such development. There would be no impacts on wild horse populations and management, wildlife populations, and peregrine falcon habitat. There

would be no impact on motorized vehicular recreation and nonmotorized recreation use would increase. There would be no impact to seven archeological sites.

No Wilderness

No acreage would be recommended as suitable for wilderness designation. The area would be managed without consideration for wilderness with emphasis on wild horse management and primitive recreation. Restrictions on ORV use and oil and gas leasing would continue.

Wilderness characteristics would be slightly degraded on 100 acres. Watershed conditions would improve on 700 acres due to improved ecological range conditions. Wild horse populations and management would not be impacted. There would be no impact on mineral exploration or development, wildlife populations, or peregrine falcon habitat, recreational visitor use, and seven archeological sites.

BIG HORN TACK-ON WSA

Wilderness (Proposed Action)

The entire 2,550 acres would be recommended as suitable for wilderness designation.

Wilderness designation would statutorily preserve the area's wilderness values. Watershed conditions would improve on 1,600 acres. Although exploration would be prohibited, there would be no impact on mineral production due to low potential for such development. There would be no impacts on wild horse populations and management, wildlife populations, or peregrine falcon habitat. There would be no impact on motorized vehicular recreation and nonmotorized recreation use would increase. There would be no impact on archeological sites.

No Wilderness

No acreage would be recommended as suitable for wilderness designation. The area would be managed without consideration for wilderness with emphasis on wild horse management and primitive recreation. Restrictions on ORV use and oil and gas leasing would continue.

Wilderness characteristics would be slightly degraded on 20 acres. Watershed conditions would improve on 1,600 acres due to improved ecological range conditions. Wild horse populations and management would not be impacted. There would be no impact on minerals exploration or development, wildlife populations, or peregrine falcon habitat, recreational visitor use, or archeological sites.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

Purpose and Need for Action 1
Location 1
Wilderness Review Process 1
  Inventory 3
  Study 3
  Reporting 5
Relationship of This Wilderness FEIS to the Billings RMP/DEIS and RMP/FEIS 6
Scoping for the WSAs Included in this FEIS 7
  Twin Coulee WSA 7
  Pryor Mountain WSA 9
  Burnt Timber Canyon WSA 11
  Big Horn Tack-On WSA 12

CHAPTER 2: DESCRIPTION OF THE ALTERNATIVES INCLUDING THE PROPOSED ACTION

Twin Coulee WSA (MT-067-212) 15
  No Wilderness Alternative 15
  Wilderness Alternative 17
Pryor Mountain WSA (MT-067-206) 17
  Wilderness Alternative 17
  No Wilderness Alternative 20
Burnt Timber Canyon WSA (MT-067-205) 22
  Wilderness Alternative 22
  No Wilderness Alternative 25
Big Horn Tack-On WSA (MT-067-207) 27
  Wilderness Alternative 27
  No Wilderness Alternative 29
Summary of Impacts 31

CHAPTER 3: AFFECTED ENVIRONMENT

Twin Coulee WSA (MT-067-212) 37
  Setting 37
  Geology/Topography 37
  Wilderness Values 37
  Timber 39
  Watershed 39
  Soils 39
  Vegetation 39
  Minerals 39
  Terrestrial Wildlife 41
  Recreation 41
  Cultural Resources 41
  Economic Conditions 41

Pryor Mountain WSA (MT-067-206) 42
  Setting 42
  Geology/Topography 42
  Wilderness Values 44
  Watershed 45
  Soils 45
  Vegetation 45
  Minerals 45

Wild Horses 46
Terrestrial Wildlife 47
Recreation 47
Cultural Resources 47
Classifications & Rights-of-Way 48

Burnt Timber Canyon WSA (MT-067-205) 48
Setting 48
Geology/Topography 48
Wilderness Values 50
Watershed 51
Soils 52
Vegetation 52
Minerals 52
Wild Horses 53
Aquatic Wildlife 53
Terrestrial Wildlife 53
Recreation 54
Cultural Resources 54

Big Horn Tack-on WSA (MT-067-205) 54
Setting 54
Geology/Topography 56
Wilderness Values 56
Watershed 57
Soils 57
Vegetation 57
Minerals 58
Wild Horses 58
Terrestrial Wildlife 59
Recreation 60
Cultural Resources 60

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

Twin Coulee WSA (MT-067-212) 61
No Wilderness Alternative 61
Wilderness Alternative 64

Pryor Mountain WSA (MT-067-206) 66
Wilderness Alternative 66
No Wilderness Alternative 69
Burnt Timber Canyon WSA (MT-067-205) 73
Wilderness Alternative 73
No Wilderness Alternative 76

Big Horn Tack-On WSA (MT-067-207) 79
Wilderness Alternative 79
No Wilderness Alternative 81

CHAPTER 5: DOCUMENT PREPARATION, CONSULTATION AND COORDINATION

Document Preparation 85
List of Preparers 85
Consultation and Coordination Prior to RMP/DEIS 86
Consultation, Coordination and Public Involvement Between RMP/DEIS and RMP/FEIS Preparation 86
Distribution List 87
Distribution of RMP/FEIS 89

Distribution of this FEIS 90
Comments and Responses 90
Oral Testimony and Responses 91
Letters and Responses 95
GLOSSARY 139
INDEX 143

FIGURES AND TABLES

Tables

Table 1.1 Wilderness Study Area Acreages 1
Table 1.2 Wilderness Study Area/Resource Management Plan Relationship 7
Table 2.1 Summary of Impacts 32

Figures

Figure 1.2 All Agencies Wilderness Study Status 2
Figure 1.1 General Location of Four Wilderness Study Areas 4
Figure 2.1 Twin Coulee Alternative Map 16
Figure 2.2 Pryor Mountain Alternative Map 18
Figure 2.3 Burnt Timber Canyon Alternative Map 23
Figure 2.4 Big Horn Tack-On Alternative Map 28
Figure 3.1 Twin Coulee Wilderness Study Area 38
Figure 3.2 Pryor Mountain Wilderness Study Area 43
Figure 3.3 Burnt Timber Canyon Wilderness Study Area 49
Figure 3.4 Big Horn Tack-On Wilderness Study Area 55

INTRODUCTION

PURPOSE AND NEED FOR ACTION

Section 603 of the Federal Land Policy and Management Act of 1976 (FLPMA) directed the Secretary of the Interior to review areas of 5,000 acres or more of the public lands determined to have wilderness characteristics and to report to the President his recommendations as to the suitability of each such area for preservation as wilderness. The Twin Coulee and Pryor Mountain Wilderness Study Areas were studied under this section of FLPMA. The Secretary is required to report his recommendations to the President by October 21, 1991, and the President is required to report his recommendations to Congress within two years of receipt (or no later than October 21, 1993). Congress decides whether to designate areas as wilderness.

Section 202 of FLPMA provides authority to study and recommend areas less than 5,000 acres not covered under Section 603 for wilderness designation through the land use planning process. The Burnt Timber Canyon and Big Horn Tack-on WSAs were studied under this section of FLPMA. The study and reporting requirements for these 202-suitable areas are the same as for areas studied under Section 603.

Under FLPMA, wilderness preservation is part of BLM's multiple use mandate. Wilderness values are recognized as part of the spectrum of resource values and uses to be considered in the land use planning process.

The proposed action in this document is to recommend a total of 22,907 acres in three WSAs as preliminarily suitable for wilderness designation. A final recommendation on this acreage will be made following completion of mineral surveys by the U.S. Geological Survey and the U.S. Bureau of Mines. One WSA of 6,870 acres is recommended as nonsuitable for wilderness designation. As a result of the Montana State Director's decision included in the Record of Decision for the Billings RMP, 525 acres in the Burnt Timber Canyon and 2,000 acres in the Big Horn Tack-On Section 202 WSAs have been dropped from wilderness consideration. This Final Environmental Impact Statement (FEIS) analyzes the potential impacts of the proposed action and reasonable alternatives to the proposed action.

LOCATION

The four study areas analyzed in this FEIS are located in the Billings Resource Area, Miles City District, in southcentral Montana (see Figure 1.1). Acreage figures for the WSAs under study are depicted in Table 1.1.

The Twin Coulee WSA is located in Golden Valley County, Montana, the Burnt Timber Canyon WSA is located in Carbon County, Montana, and the Pryor Mountain and Big Horn Tack-On WSAs are located in Carbon County, Montana, and Big Horn County, Wyoming.

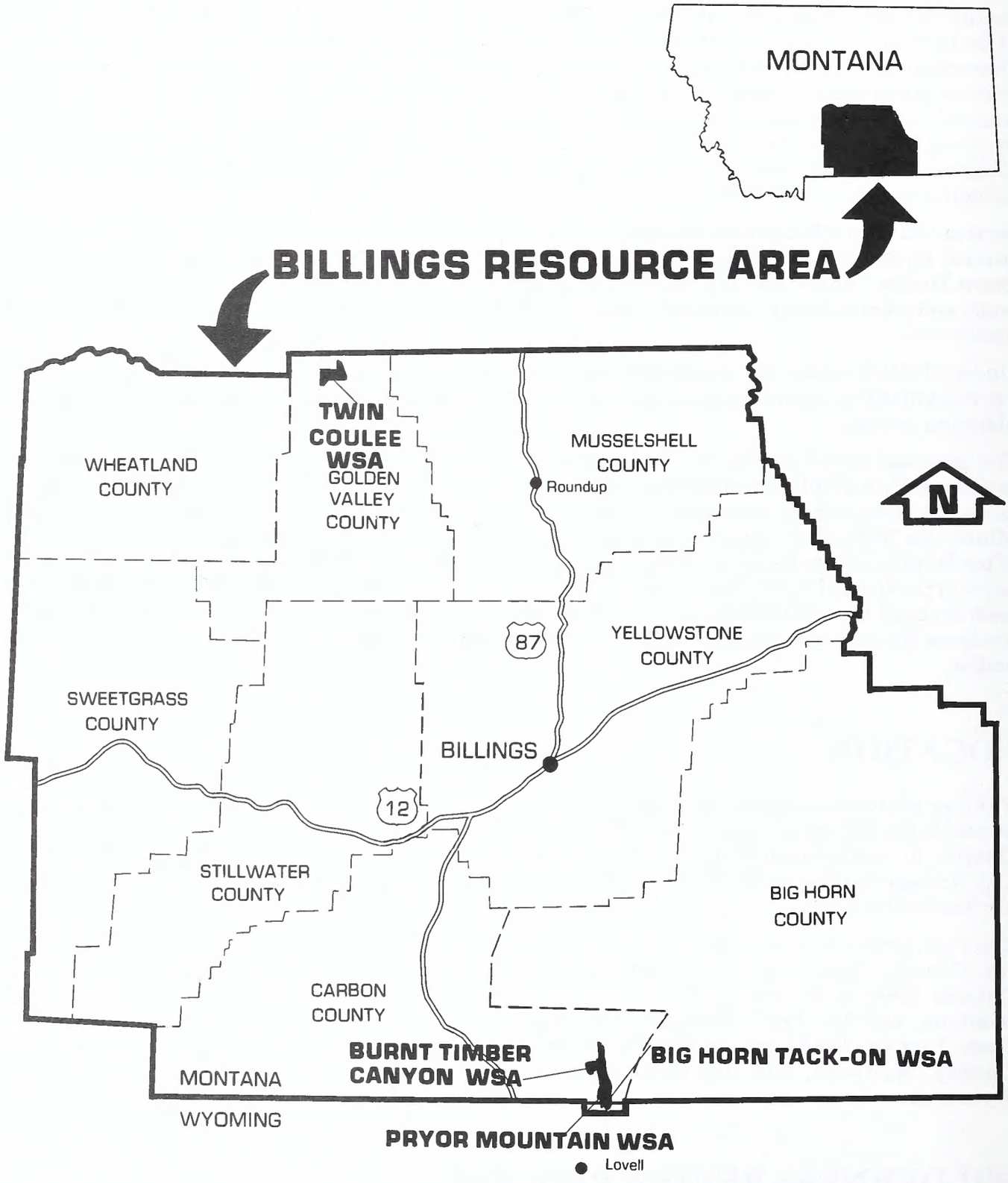
TABLE 1.1
Wilderness Study Areas Acreages

Wilderness Study Area	Acreage Recommended	Acreage Not Recommended
Twin Coulee (MT-067-212)	0	6,870
Pryor Mountain (MT-067-206)	16,927	0
Burnt Timber Canyon (MT-067-205)	3,430	0
Big Horn Tack-On (MT-067-207)	2,550	0
TOTAL	22,907	6,870

WILDERNESS REVIEW PROCESS

To carry out the wilderness mandate of Section 603 of FLPMA, BLM developed a wilderness review process consisting of three phases: inventory, study, and reporting.

FIGURE 1.1
General Location of Four Wilderness Study Areas



Inventory

In November 1978, BLM began the wilderness review by preparing descriptions of those areas of 5,000 or more roadless acres of public lands and areas of less than 5,000 acres contiguous to other wilderness or wilderness study areas. These wilderness inventory areas were reviewed by the public, intensively inventoried by BLM and reviewed by BLM's Montana State Director in 1979-80. The State Director then released his final decision designating those areas having the minimum characteristics of size, naturalness and outstanding opportunity for solitude and/or primitive recreation (Final Decision: Montana Wilderness Inventory, November 1980) as wilderness study areas. There were 32,302 acres found to contain wilderness characteristics identified in the four WSAs within the Billings Resource Area.

In determining wilderness values, FLPMA directs BLM to use the criteria provided by Congress in the Wilderness Act of 1964. Section 2(c) of that Act states: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean, in the Act, an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions, and which: (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunity for solitude or a primitive and unconfined type of recreation; and (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value."

The Burnt Timber Canyon and Big Horn Tack-On WSAs, each containing less than 5,000 acres, were carried forward to the study phase under the authority of Section 202 of the Federal Land Policy and Management Act. Both areas are contiguous to other federal agency wilderness proposals and are separated by roads from the 16,927-acre BLM Pryor Mountain WSA. The State Director's Decision to study the 3,430 acre Burnt Timber Canyon and the 2,550 acre Big Horn Tack-on was published in the *Federal Register* of Tuesday, May 10, 1983; Volume 48, No. 91, pages 21000-21002.

The total acreage for all agencies in the area, National Park Service, Bureau of Land Management and U.S. Forest Service, equals approximately 43,060 acres. (See Figure 1.2.)

Study

This phase involves the process of determining, through careful analysis, which wilderness study areas would be recommended as suitable for wilderness designation and which would be recommended as nonsuitable. These determinations, made through the BLM land use planning system, consider all values, resources, and uses of the public lands. Guidance for the wilderness study process comes from the following sources: The BLM's Wilderness Study Policy, the National Environmental Policy Act (regulations in the *Federal Register* Vol. 43, No. 230, November 29, 1978), the Wilderness Act of 1964, the BLM's Wilderness Management Policy, and the BLM Planning Regulations (published in the *Federal Register*, Vol. 48, No. 88, May 5, 1983).

Analysis and preliminary recommendations concerning wilderness suitability were included in the FEIS on the Billings Resource Management Plan (RMP) completed in November 1983.

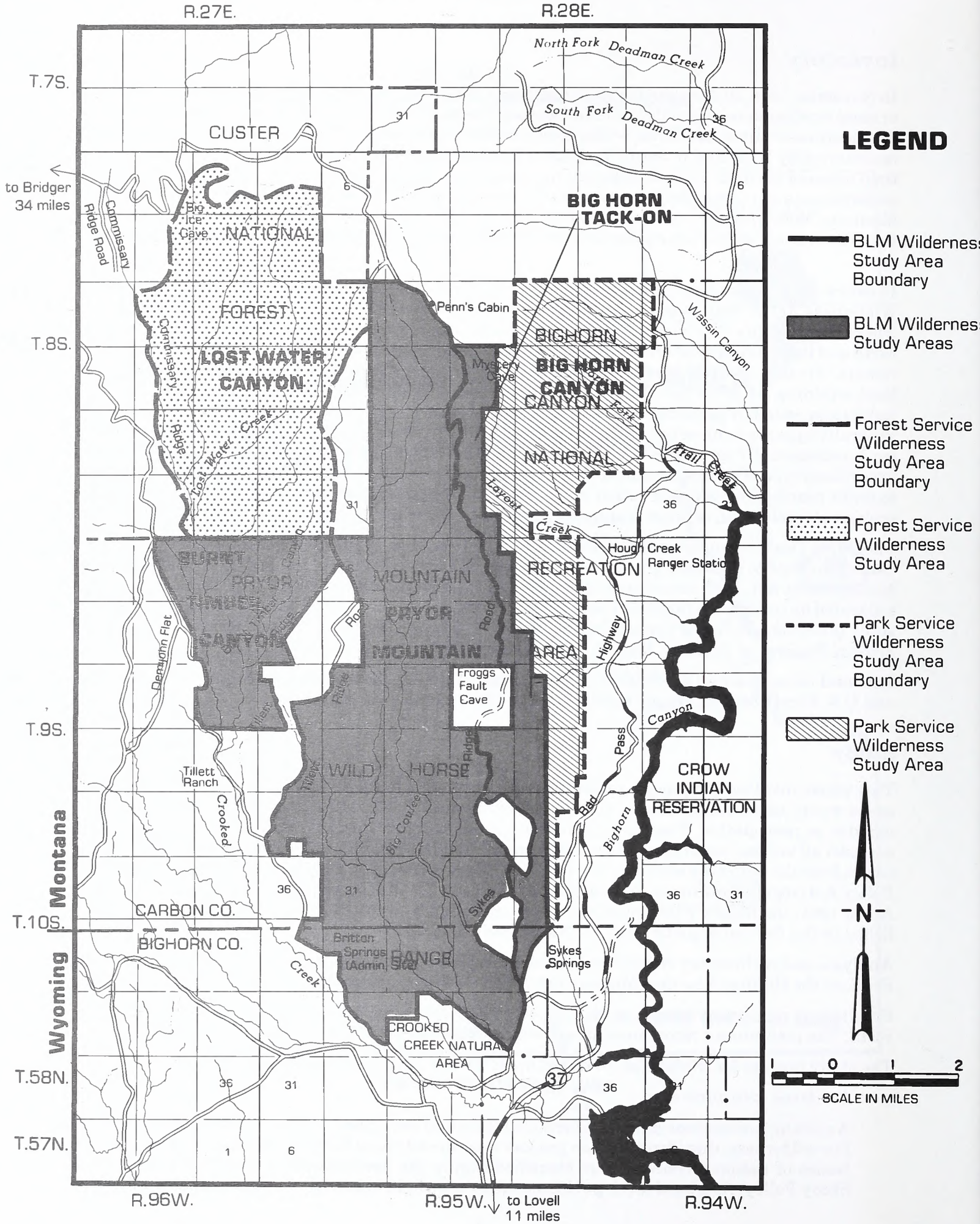
Preliminary recommendations on the suitability or nonsuitability of each WSA were included in the FEIS. The preliminary recommendations were accepted by the BLM Montana State Director.

The study process for wilderness, of which the RMP is a part, includes four major steps:

A. *Issue Identification*

A scoping process took place to determine issues and associated conflicts addressed in the RMP. For wilderness, this identification process was carried out at both the national and local levels. Issues of national concern were identified during the development of the BLM's Wilderness Study Policy. At a local level, public meetings were held in Lovell, Wyoming, and Billings and

FIGURE 1.2
All Agencies Wilderness Study Areas



Lewistown, Montana. From the input at these meetings, three major issues for wilderness were identified:

(1) How much wilderness is needed?

(2) Protection of wilderness values.

(3) The impacts of possible wilderness designation on other existing and future uses of public lands. The primary concern was centered around future management of the Pryor Mountain wild horses.

B. *Development of Planning Criteria and Quality Standards*

Based on the issues identified both nationally and locally, planning criteria and quality standards were developed in the BLM's Wilderness Study Policy to direct the procedures for evaluation of suitability and unsuitability of each WSA.

The planning criteria are:

(1) Evaluation of Wilderness Values

(2) Manageability

In addition to the planning criteria, a set of quality standards were developed to ensure consistency in evaluating the WSAs.

a. Energy and Mineral Resource Values

b. Impacts on Other Resources

c. Impact of Nondesignation on Wilderness Values

d. Public Comment

e. Local Social and Economic Effects

f. Consistency with Other Plans

C. *Formulation of Alternatives*

Each of the four WSAs was evaluated using the planning criteria and quality standards. Wilderness alternatives were identified and a comparison of existing and potential losses/gains for various resources was made in the context of the overall RMP alternatives. From this comparison, preliminary recommendations were made for each area and incorporated into the RMP alternatives.

D. *Evaluation of Environmental Consequences*

The fourth step of the planning process was to analyze the environmental impacts of the alternatives. A detailed analysis for each WSA was included in the Draft Environmental Impact Statement (DEIS) of the RMP. Based upon the analysis, the Preferred Alternative in the DEIS was selected. The DEIS on the RMP was published in April 1983. Formal public hearings were held in Lovell, Wyoming, on May 31, 1983 and Billings, Montana, on June 1, 1983. Required public meetings for wilderness were incorporated into the RMP public meetings. The DEIS documented, for public review and comment, the results of the assessment of impacts for the preferred and other alternatives for the WSAs. Comments received have been used to prepare the FEIS on the RMP and this FEIS. See the Public Comments and Responses to Comments Section in this document for further discussion of these comments.

In addition, all available information, including the draft and final RMP and public comments, was used to prepare the Wilderness Suitability Report (WSR).

Reporting

Upon the completion of this study, recommendations as to whether the areas are suitable or nonsuitable for designation as wilderness will be made through the Secretary of the Interior to the President.

A mineral survey will be conducted by the U.S. Geological Survey (USGS) and Bureau of Mines for areas recommended as suitable. Reports on all wilderness study areas must reach the President no later than October 21, 1991. The president will, within two years, transmit the recommendations to Congress. Congress has the sole authority for designating any federal land as wilderness. Congress will take the recommendations submitted by the President, along with any other information it may have obtained through its own sources and, after debate and counsel, will pass legislation that would formally designate WSAs as wilderness or release them for uses other than wilderness.

RELATIONSHIP OF THIS WILDERNESS FEIS TO THE BILLINGS RMP/DEIS AND RMP/FEIS

The Billings RMP/DEIS serves as the Wilderness DEIS.

Two alternatives were considered for the Twin Coulee and Pryor Mountain WSAs in the Billings RMP/DEIS. These alternatives were Wilderness and No Wilderness. No Partial Wilderness alternative was considered because there was no feasible opportunity to improve manageability of the WSA as wilderness or to reduce resource conflicts. These WSAs are being studied under the mandate of Section 603 of FLPMA.

Three alternatives were considered for the Burnt Timber Canyon WSA in the Billings RMP/DEIS. These alternatives were an All Wilderness alternative for 3,955 acres, a No Wilderness alternative for 3,955 acres, and Partial Wilderness. The Partial Wilderness alternative recommended the northern 3,430 acres of the WSA as wilderness and the southern 525 acres as nonwilderness. This partial alternative was formulated due to marginal suitability based on man-made structures, cross-country vehicle ways and visual intrusions in the southern portion (525 acres) of the WSA. The partial alternative was the preferred alternative in the Billings RMP/DEIS and the proposed action in the Billings RMP/FEIS. The 525-acre portion was dropped from further wilderness study consideration and WSA status in the Billings RMP-Record of Decision (ROD) under authority of Section 202 of FLPMA. The Billings RMP/FEIS ROD (September 1984) selected the remaining 3,430 acres for further study in this document. Therefore, two alternatives (all wilderness and no wilderness) are considered for the 3,430 acre WSA. There is no partial alternative for the 3,430 acre WSA because there is no feasible opportunity to improve manageability of the 3,430 acre WSA as Wilderness or to reduce resource conflicts.

Two alternatives were considered for a 4,550 acre Bighorn Tack-on WSA in the Billings RMP/DEIS. These alternatives were All Wilderness and No Wilderness. The 4,550 acres were composed of two separate roadless areas. The northern roadless area is 2,000 acres in size and the southern roadless area is 2,550 acres in size. The preferred alternative in the Billings RMP/DEIS was no wilderness for the 4,550 acres. In the public hearing process, the National Park Service and others requested that the Big Horn Tack-On be recommended as suitable for wilderness. Thus, a Partial Wilderness alternative was added as the proposed action in the Billings RMP/FEIS. The northern roadless area of this WSA (2,000 acres) was considered nonsuitable due to the existence of man-made structures, visual intrusions and geographic isolation from NPS proposed wilderness. The southern roadless area (2,550 acres) is a logical physiographic extension of the National Park Service Bighorn Canyon National Recreation Area proposed wilderness area. In the Billings RMP/ROD, the northern 2,000-acre portion was dropped from further wilderness study consideration pursuant to Section 202 of FLPMA and the Billings RMP/FEIS and WSA status and the southern roadless area of 2,550 acres was selected for further study in this document. Therefore, two alternatives (all wilderness and nonwilderness) are considered for the 2,550 Big Horn Tack-on WSA in this document. There is no partial alternative for the 2,550 acre WSA because there is no feasible opportunity to improve manageability of the WSA as wilderness or to reduce resource conflicts.

Table 1.2 highlights the relevant Billings RMP management decisions that pertain to the WSAs, independent of wilderness designation.

TABLE 1.2
WILDERNESS STUDY AREA/RESOURCE MANAGEMENT PLAN RELATIONSHIP

WSA	DECISIONS					
	Timber Harvest	ORV Designation	Oil & Gas	Livestock Grazing	Withdrawn From Mineral Entry	Wild Horse Population[1]
Twin Coulee	yes	Open	Surface Occupancy	yes	no	N/A
Pryor Mountain	no	Closed[2]	No Surface Occupancy	no	yes[3]	yes
Burnt Timber	no	Closed[2]	No Surface Occupancy	no	no	yes
Big Horn Tack-On	no	Closed[2]	No Surface Occupancy	no	no	yes

[1]Total population maintained at 121 ±5% for foreseeable future.
[2]Closed to all ORV except snowmobiles and authorized use.
[3]160 acres Crook Creek Natural Area.

SCOPING FOR THE WSAS INCLUDED IN THIS FEIS

Scoping, when viewed in the context of NEPA, is the first step in the EIS process. During scoping, issues are identified, alternative management strategies are tentatively formulated and other concerns pertinent to the environmental analysis are addressed. The results of scoping are continually modified and refined during the EIS process based on public review, interdisciplinary team analysis and management involvement. The following summarizes the results of scoping for each of the WSAs treated in this document.

Twin Coulee WSA

The following issues have been identified for the Twin Coulee WSA:

1. Impacts on Wilderness Values
2. Impacts on Timber Production Levels and Economics
3. Impacts on the Watershed Resource
4. Impacts on Mineral Exploration and Production
5. Impacts on Elk, Mule Deer, Bear and Turkey Habitat and Populations
6. Impacts on Recreation Use

A number of other issues were considered but eventually dropped from detailed analysis. These include:

1. *Impacts on Oil and Gas Exploration and Development:* Concerns were raised related to loss of potential mineral production due to wilderness designation. There are two existing post-FLPMA oil and gas lease applications which encompass the entire WSA. The U.S. Geological Survey examined the petroleum potential of wilderness areas and wilderness study areas in Montana (Perry, et al. 1983). The authors have determined that the Twin Coulee WSA has a zero to low potential for discovery of petroleum. A similar conclusion was reached through the BLM's "Geology, Energy and Mineral (GEM) resource assessment of the Twin Coulee GEM Resource Area (GRA). The assessment states, "The Twin Coulee WSA has been classified as having low favorability for the potential occurrences of all GEM resources except limestones, oil shale and metals." On this basis, no oil and gas development activities are projected or expected to occur. This issue will not be analyzed further.

2. *Impacts on Antelope and Sage Grouse Habitat:* These species are being considered concurrently due to their preference and need for a dominant sagebrush community type of habitat, and both are considered a huntable game species. The effects of selecting either alternative for the WSA as the proposed actions would relate to the sagebrush/grassland habitat type were considered, and no significant impacts were identified. This particular habitat type is comprised of only 763 acres (11 percent) of the 6,870 acres within the WSA. The only significant habitat altering proposal under either alternative deals with harvesting of the timber which would have no effect on this habitat type. No range improvement projects or wildlife enhancement projects were identified in the Billings RMP/EIS and none have been projected. Therefore, this issue will not be analyzed further.

3. *Impacts on Blue Grouse Habitat:* This species is being considered because of its preference and need for a timbered habitat type. Additionally, blue grouse is considered a huntable game species. All available data indicates population levels to be very low. Blue grouse occur and utilize the timbered habitat type within the WSA for roosting and nesting purposes. Sightings have been very infrequent. Disturbance of 250 acres, or 5.4 percent of the timbered habitat type for 6 months every 5 years would not significantly affect the amount of habitat available for roosting and nesting.

Also, a major increase in mans' activity resulting from timber harvest would only occur for a six month period every five years and should not disturb the birds. Recreational motorized use is expected to increase due to the construction of new timber access roads. It is anticipated that this activity will be confined to the roadways. Birds would avoid the sites being actively harvested because of human intrusion and vehicle traffic, but upon completion, would have increased ease of movement while in flight through the area. No other actions proposed for either alternative would have an effect on blue grouse habitat. Therefore, this issue will not be analyzed further.

4. *Impacts on Threatened and Endangered Species:* There are no federally recognized threatened or endangered (T&E) animal or plant species known to occur in the WSA. None of the proposed actions would alter the habitat or ecological conditions such that any T&E species would be attracted to the area or become established. Informal and formal consultation with the U.S. Fish and Wildlife Service, as required by the Section 7 Interagency Cooperative Regulations (50 CFR 402, 43 FR 870), was completed during the development of the Billings RMP/FEIS. It was their biological opinion that there would be "No Effect" on any T&E species by either of the alternatives being considered. (Letter included in Chapter 5.) Therefore, this issue will not be analyzed further.

5. *Impacts on Nongame Species Habitat:* Numerous species of nongame animals have been observed throughout the entire WSA. Designation of the WSA as wilderness would have no effect on the species or numbers utilizing the area. Not designating the area would result in changes in habitat types and quantities present on 4,612 acres due to projected timber harvest over 100 years. Changes would be gradual, occurring at a rate of 5.4 percent of the total WSA every five years. This would cause a change in the species present and population levels utilizing the area due to the numerous vegetative growth stages that would be developing. Realizing no one habitat type would ever be eliminated, and that no accurate projection of changes could be made without actual census data, this issue will not be analyzed further.

6. *Impacts on Levels of Grazing Permitted, New Range Projects and Trailing Permits:* Concerns were raised that wilderness designation would prohibit or restrict grazing, new range projects, trailing, and motorized use associated with trailing and grazing. The allocated 69 AUMs, based on long-term production estimates, will remain the same. No range projects are proposed and none exist now. Trailing that occurs along the edge of the WSA would continue regardless of the selection of alternative. No motorized use has been associated with trailing and grazing *within* the WSA and none is expected in the future. Thus, there are no impacts to grazing levels, project levels, and trailing. This issue will not be analyzed further.

7. *Impacts on Land Tenure:* The Billings RMP directed that the Twin Coulee WSA be retained in public ownership under BLM administration if designated wilderness. If not designated wilderness, the possibility of an exchange with the U.S. Forest Service will be examined. Both

agencies are multiple-use oriented and both manage wilderness and nonwilderness. Therefore, the area will remain in public ownership, and no changes in management practices are projected. Thus, this issue will not be analyzed further.

8. *Impacts on Land Classification and Rights-of-Way:* At this time there are no classifications or rights-of-way within the Twin Coulee WSA. Future rights-of-way applications in the WSA will be considered subject to other resource concerns. Steep, broken topography of the area more or less dictates that any linear rights-of-way activity will be confined to the county road corridor area outside of the WSA. The only proposed actions by any resource, activity or use are directly related to timber harvesting, which would not generate any rights-of-way activity. Therefore, no rights-of-way activity is projected in the area and this issue will not be analyzed further.

9. *Impacts on Cultural Resources:* The entire Twin Coulee WSA was inventoried for cultural resources in 1977. Archeological survey identified three prehistoric rockshelters, two historic rockshelters, a historic cabin, and a prehistoric chert quarry. An additional 18 rockshelters were identified as having potential for past human habitation, but did not reveal indisputable evidence of such habitation.

All of the sites in the Twin Coulee WSA are typical of prehistoric and historic cultural resources in the Billings Resource Area. Their current integrity and potential to provide substantive information about history and prehistory is duplicated or exceeded by other sites under BLM jurisdiction. The level of scientific value inherent in these cultural resources is not exceptional nor of particular importance to the fields of archeology and history. Therefore, actions under the cultural resource management program intended to obtain further information from these sites, such as through authorized scientific research, are not projected.

Of the recorded sites, one, a prehistoric rockshelter, was evaluated by BLM as eligible. Although no eligibility determination or nomination to the National Register of Historic Places has occurred, the site is being managed as eligible.

It is anticipated that the rock shelter will not be affected under either the proposed action or the wilderness alternative. The site lies in a very steep canyon with sheer rock cliffs on each side. Under the proposed action, no surface disturbing activities are projected at or in the vicinity of the site. No timber harvest will occur and no roads or skid trails will be constructed in the canyon. Due to topographic constraints, access roads and skid trails cannot be built closer than one-eighth mile. Although total visitor use is projected to increase 10 percent, due to the inaccessibility and hidden location of the site, no vandalism is anticipated.

Under the wilderness alternative, there will be no surface disturbing activities and only a one to two percent increase in visitor use. Thus, no vandalism is anticipated.

Cultural resources subject to surface disturbance from any proposed resource development action or discovered to be subject to disturbance from wilderness use would be evaluated in consultation with the Montana State Historic Preservation Office. Avoidance or mitigation measures would be implemented prior to authorizing any development action or to mitigate adverse effects to cultural resources, including the site evaluated by BLM as eligible, caused by wilderness use. Thus, this issue will not be analyzed further.

Two alternative management strategies were formulated and analyzed for the Twin Coulee WSA: designating the entire area as wilderness and designating none of the area as wilderness.

Pryor Mountain WSA

The following issues were identified for the Pryor Mountain WSA:

1. Impacts on Wilderness Values
2. Impacts on the Watershed Resource
3. Impacts on Mineral Exploration and Production
4. Impacts on Wild Horse Populations and Management

5. Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations
6. Impacts on Peregrine Falcon Habitat and Population
7. Impacts on Recreation Use
8. Impacts on Cultural Resources

A number of other issues were considered but eventually dropped from detailed analysis. These include:

1. *Impacts on Oil and Gas Exploration and Development:* There are no oil and gas leases in this WSA and leasing would not be permitted under the Wilderness Alternative (the proposed action). Leasing could occur under the No Wilderness Alternative.

The USGS/BM mineral report (USGS Bulletin No. 1723) has assigned a low mineral resource potential for oil and gas.

Most of the WSA lies within the Pryor Mountain Wild Horse Range and all lies within areas used by the horses. It is considered sensitive to oil and gas leasing and surface occupancy would not be approved. This would not preclude directional drilling under the WSA from a no surface occupancy site outside of the WSA. However, the low potential of the entire area suggests that any such directional drilling in unlikely.

In light of the restrictions that a "no surface occupancy" stipulation would have on development under the No Wilderness Alternative and a no leasing policy under the Wilderness Alternative and the low potential in and around the WSA, oil and gas exploration and development will essentially be the same under either alternative. It will not be discussed or analyzed further in this document.

2. *Impacts on Nongame Species Habitat:* Numerous species of nongame wildlife have been observed throughout the entire WSA, but no intensive inventory of the area has been completed. The maintenance of 35 mining claims, construction of two miles of fence and two water catchments, and stabilization of one archeological site would not cause any significant change in species diversity or abundance with the selection of either alternative. Thus, this issue will not be analyzed further.

3. *Impacts on Livestock Grazing:* Concerns were raised that wilderness designation will prohibit or restrict livestock grazing. However, there is no authorized livestock use within the WSA and none is proposed. Thus, this issue will not be analyzed further.

4. *Impacts on Land Tenure:* All public lands within the Pryor Mountain WSA are designated for retention in public ownership under BLM administration regardless of designation or nondesignation. In addition, a decision was made to acquire all nonpublic inholdings, to manage either as part of the wild horse range and or as wilderness, if the area is designated. As no proposals are made to change land tenure, it will not be analyzed further.

5. *Impacts on Rights-of-Way:* The Billings RMP has designated the Pryor Mountain Wild Horse Range, which includes the Pryor Mountain WSA, as an avoidance area for utility and transportation corridors. If designated wilderness, the area will become an "exclusion area", thus no rights-of-way applications will be considered. There are no specific proposals for developments or uses that will generate rights-of-way applications in either the wilderness or nonwilderness alternative. Past history has shown avoidance of these areas. There could possibly be some rights-of-way activity if mineral development were to occur in the WSA. However, as the probability for mineral development is low, it is doubtful if any rights-of-way activity will occur. Due to the foregoing, this issue will not be analyzed further.

6. *Impacts on Commercial Timber Harvest:* Concerns have been expressed that wilderness designation will prohibit harvest of commercial timber. Within the Pryor Mountains WSA there are 598 acres of commercial timber lands. Through the Billings RMP and the Pryor Mountain Wild Horse Herd Management Area Plan, the Bureau has decided not to harvest any commercial timber in the Pryor Mountain WSA, thus further analysis is not necessary.

7. *Impacts on Paleontological Resources:* Well preserved vertebrate and invertebrate fossils have been found in the area, both inside and outside the WSA. One hundred sixty acres of the

Crooked Creek National Natural Landmark is within the WSA. In 1960, Purdue University excavated several dinosaur fossils from the National Natural Landmark.

Fossil remains are found inside and outside of the WSA. Since data does not exist to facilitate predicting the location or significance of buried material, it is impossible to discuss significance levels in either alternative. As no new proposals have been made to excavate or study fossil resources in the area and none are anticipated, further analysis would be pure conjecture. It should be noted that research under a Wilderness Alternative could only be permitted if it were nonimpairing. Due to the foregoing, paleontological resources will not be analyzed further.

3. The only known site which may be of concern to Native American Religious practioners is a vision quest site within the WSA. As a result of the limited ORV designation, access is currently by nonmotorized means. That restriction would continue under the proposed action. The maintenance and enhancement of solitude characteristics under the proposed action may enhance traditional fasting practices.

Two alternative management strategies were formulated and analyzed for the Pryor Mountain WSA: designating the entire area as wilderness and not designative the entire area as wilderness.

Burnt Timber Canyon WSA

The following issues were identified for the Burnt Timber Canyon WSA:

1. Impacts on Wilderness Values
2. Impacts on the Watershed Resource
3. Impacts on Mineral Exploration and Production
4. Impacts on Wild Horse Populations and Management
5. Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations
6. Impacts on Peregrine Falcon Habitat and Population
7. Impacts on Recreation Use
8. Impacts on Cultural Resources

A number of other issues were considered but eventually dropped from detailed analysis. These include:

1. *Impacts on Oil and Gas Exploration and Development:* There are no oil and gas leases in this WSA and leasing would not be permitted under the Wilderness Alternative (the proposed action). Leasing could occur under the No Wilderness Alternative.

The USGS/BM mineral report (USGS Bulletin No. 1723) has assigned a low mineral resource potential for oil and gas.

Most of the WSA lies within the Pryor Mountain Wild Horse Range and within areas used by the horses. It is considered sensitive to oil and gas leasing and surface occupancy would not be approved. This would not preclude directional drilling under the WSA from a no surface occupancy site outside of the WSA. However, the low potential of the entire area suggests that any such directional drilling in unlikely.

In light of the restrictions that a "no surface occupancy" stipulation would have on development under the No Wilderness Alternative and a no leasing policy under the Wilderness Alternative and the low potential in and around the WSA, oil and gas exploration and development will essentially be the same under either alternative. It will not be discussed or analyzed further in this document.

2. *Impacts on Fisheries Habitat:* The only fisheries existing within the WSA is Crooked Creek, which is located on the western edge. Resident species include brook trout and Yellowstone cutthroat trout. The Yellowstone cutthroat trout have been confirmed by the Montana Department of Fish, Wildlife and Parks (1985) to represent a pure strain, being isolated in the upper portions of the drainage by a natural barrier. Since there is no new mineral development projected to occur, increased levels of sedimentation degrading existing spawning grounds will not occur. Thus, there would be no effect on the fisheries habitat. The construction of one water

catchment and four miles of fence, stabilization of two archeological sites, and excavation of one site would disturb and increase potential sedimentation on approximately six acres (.3 percent), but this would be insignificant in relation to the fisheries habitat.

The improvement in range and watershed conditions on 700 acres or 20 percent of the WSA through regulating wild horse numbers and use would have minor beneficial effects to the fisheries habitat by keeping spawning areas clear of sedimentation. Accomplishment of the potential benefits is anticipated to take approximately 100 years. Since the net effect to the fisheries habitat from selection of either alternative has been determined to be the same, no further analysis of this issue will be pursued.

3. *Impacts on Nongame Species Habitat:* Numerous species of nongame wildlife have been observed throughout the entire WSA. The construction of four miles of fence and one water catchment, stabilization of archeological sites, and excavation of one site would have no significant impact on the variety or abundance of habitat types present. Therefore, it is not projected that any significant change in species diversity or abundance would occur with the selection of either alternative. Thus, this issue will not be analyzed further.

4. *Impacts on Livestock Grazing:* Concerns were raised that wilderness designation would prohibit or restrict livestock grazing. Approximately 655 acres (19 percent of the WSA) west of Crooked Creek is authorized for domestic grazing. This is equivalent to approximately 60 AUMs, which will remain unchanged. No range projects exists and none are proposed. No motorized use is associated with livestock management and none is expected in the future. Due to the small acreage involved and no projected changes in grazing levels and projected range projects, the issue will not be analyzed further.

5. *Impacts on Land Tenure:* All public lands within the Burnt Timber Canyon WSA are designated for retention in public ownership under BLM administration regardless of designation or nondesignation. As no proposals are made to change land tenure, it will not be analyzed further.

6. *Impacts on Rights-of-Way:* The Billings RMP has designated the Pryor Mountain Wild Horse Range, which includes the Burnt Timber Canyon WSA, as an avoidance area for utility and transportation corridors. If designated wilderness, the area will become an "exclusion area", thus no rights-of-way applications will be considered. There are no specific proposals for developments or uses that will generate rights-of-way application in either the wilderness or nonwilderness alternative. There could possibly be some rights-of-way activity if mineral development were to occur in the WSA. However, as the probability for mineral development is low, it is doubtful if any rights-of-way activity will occur. Due to the foregoing, this issue will not be analyzed further.

7. *Impacts on Commercial Timber Harvest:* Concerns have been raised that wilderness designation will prohibit harvest of commercial timber. Within the Burnt Timber Canyon WSA, there is some forest land, but none of commercial value. Therefore, no timber harvest is proposed and further analysis of this action is not necessary.

Two alternative management strategies were formulated and analyzed for the Burnt Timber Canyon WSA: designating the entire area as wilderness and non-designation of the entire area as wilderness.

Big Horn Tack-On WSA

The following issues were identified for the Big Horn Tack-On WSA:

1. Impacts on Wilderness Values
2. Impacts on the Watershed Resource
3. Impacts on Mineral Exploration and Production
4. Impacts on Wild Horse Populations and Management
5. Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations
6. Impacts on Peregrine Falcon Habitat and Population
7. Impacts on Recreation Use
8. Impacts on Cultural Resources

A number of other issues were considered but eventually dropped from detailed analysis. These include:

1. *Impacts on Oil and Gas Exploration and Development:* There are no oil and gas leases in this WSA and leasing would not be permitted under the Wilderness Alternative (the proposed action). Leasing could occur under the No Wilderness Alternative.

   The USGS/BM mineral report (USGS Bulletin No. 1723) has assigned a low mineral resource potential for oil and gas.

   All of the WSA lies within the Pryor Mountain Wild Horse Range and all lies within areas used by the horses. It is considered sensitive to oil and gas leasing and surface occupancy would not be approved. This would not preclude directional drilling under the WSA from a no surface occupancy site outside of the WSA. However, the low potential of the entire area suggests that any such directional drilling in unlikely.

   In light of the restrictions that a "no surface occupancy" stipulation would have on development under the No Wilderness Alternative and a no leasing policy under the Wilderness Alternative and the low potential in and around the WSA, oil and gas exploration and development will essentially be the same under either alternative. It will not be discussed or analyzed further in this document.

2. *Impacts on Nongame Species Habitat:* Numerous species of nongame wildlife have been observed throughout the WSA. The construction of one-half miles of fence and one water catchment would have no significant impact on the variety or abundance of habitat types present. Therefore, it is not projected that any significant change in species diversity or abundance would occur with the selection of either alternative. Thus, this issue will not be analyzed further.

3. *Impacts on Livestock Grazing:* Concerns related to livestock grazing were raised that wilderness designation would prohibit or restrict livestock grazing. In this case, there is no authorized livestock grazing within the WSA and none is proposed. Thus, this issue will not be analyzed further.

4. *Impacts on Land Tenure:* All public lands within the Big Horn Tack-On WSA are designated for retention in public ownership under BLM administration, regardless of designation or nondesignation. In addition, a decision was made to acquire all nonpublic inholdings to manage either as part of the wild horse range and or as wilderness if the area is designated. As no proposals are made to change land tenure, it will not be analyzed further.

5. *Impacts on Rights-of-Way:* The Billings RMP has designated the Pryor Mountain Wild Horse Range, which includes the Big Horn Tack-On WSA, as an avoidance area for utility and transportation corridors. If designated wilderness, the area will become an "exclusion area", thus no rights-of-way applications will be considered. There are no specific proposals for developments or uses that will generate rights-of-way application in either the wilderness or nonwilderness alternative. There could possibly be some rights-of-way activity if mineral development were to occur in the WSA. However, as the probability for mineral development is low, it is doubtful if any rights-of-way activity will occur. Due to the foregoing, this issue will not be analyzed further.

6. *Impacts on Commercial Timber Harvest:* Concerns have been raised that wilderness designation will prohibit harvest of commercial timber. Within the Big Horn Tack-On, there is a large amount of forest land, but none of commercial value. Therefore, no timber harvest is proposed and further analysis of this action is not necessary.

Two alternative management strategies were formulated and analyzed for the Big Horn Tack-On WSA: designating the entire area as wilderness and non-designation of the entire area as wilderness.

DESCRIPTION OF THE ALTERNATIVES INCLUDING THE PROPOSED ACTION

TWIN COULEE WSA (MT-067-212)

No Wilderness Alternative (Proposed Action)

The entire 6,870 acres of the Twin Coulee WSA will be recommended as nonsuitable for designation as wilderness. This WSA will be managed primarily for commercial forest without special consideration for wilderness values. (See Figure 2.1.)

Timber Management: Of the 6,870 acres within the Twin Coulee WSA, there are 4,612 acres of commercial forest land. The commercial timber stands are primarily located on north slopes and consist of ponderosa pine, lodgepole pine and Douglas fir. The total estimated volume is 12,240,000 board feet.

A reasonable timber harvest scenario would be to offer one large-sale every five years, interspersed with smaller annual thinning sales until all 4,612 acres of commercial stand were treated. The large sales would cover from 100 acres to 150 acres. The harvesting methods used would consist of overstory removal and shelterwood cutting, resulting in the removal of 30 to 70 percent of the existing overstory. No logging would be permitted on slopes greater than 30 percent. Additionally, some small 5- to 10-acre clearcuts would be considered in moist areas or where there are diseased trees.

Associated with the large sales, it is expected that approximately three-fourths mile of mainline road, one mile of spur road and one mile of skid trails would have to be constructed. Ninety percent of all spur roads will be blocked to vehicle use upon completion of the sale and remain so unless needed for future sales. Any spur roads not needed for future use and all skid trails are reclaimed under normal timber sale stipulations.

In addition, 10 to 20 acre thinning sales would also occur on an annual basis. Spacing between the trees to be left would vary from 8 to 12 feet, depending on the species being thinned. No additional road construction would be allowed and no logging on slopes greater than 30 percent would be permitted.

Slash created from harvesting would be lopped and scattered or piled and burned. Slash created by road construction would be completely disposed of by burying it in the right-of-way or burning it first and then burying it.

At the conclusion of the 100-year cycle, 15 miles of mainline roads, 20 miles of spur roads (some reclaimed), 20 miles of skid trails (all reclaimed), and 4,612 acres of staggered aged timber stands would exist. A maximum of 17 miles of roads will be permanently maintained.

Watershed Management: (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions (with the exception of the timber resource) were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature consisting of periodic monitoring and documentation of condition. (Monitoring will key on the 4,612 acres where disturbance is projected to occur through timber harvest actions.)

Minerals Management: Under the proposed action, the area will be open for mineral entry and leasing. Existing mining claims will continue to be maintained through annual assessment work. This will consist of small areas of surface disturbance (primarily small excavations or surface scrapings estimated at one-tenth acre or less) on each claim or series of claims that join or overlap. The overall disturbance due to annual assessment work will probably range from 10 to 12 acres in the WSA, which includes minimal access road maintenance on existing trails along the edge of the WSA. Due to the low potential for discovery for all minerals, including oil and gas, no additional mineral activity is projected in the area.

Management for Elk, Deer, Bear and Turkey Habitat and Populations: No specific habitat enhancement actions or projects for elk, deer, bear, or turkey were proposed in the Billings RMP/FEIS for this WSA. No population goals have been established by BLM or the Montana Department of

FIGURE 2.1
Twin Coulee Alternative Map

Proposed Action — No Wilderness

Wilderness Study Area Boundary

Forest Service Boundary

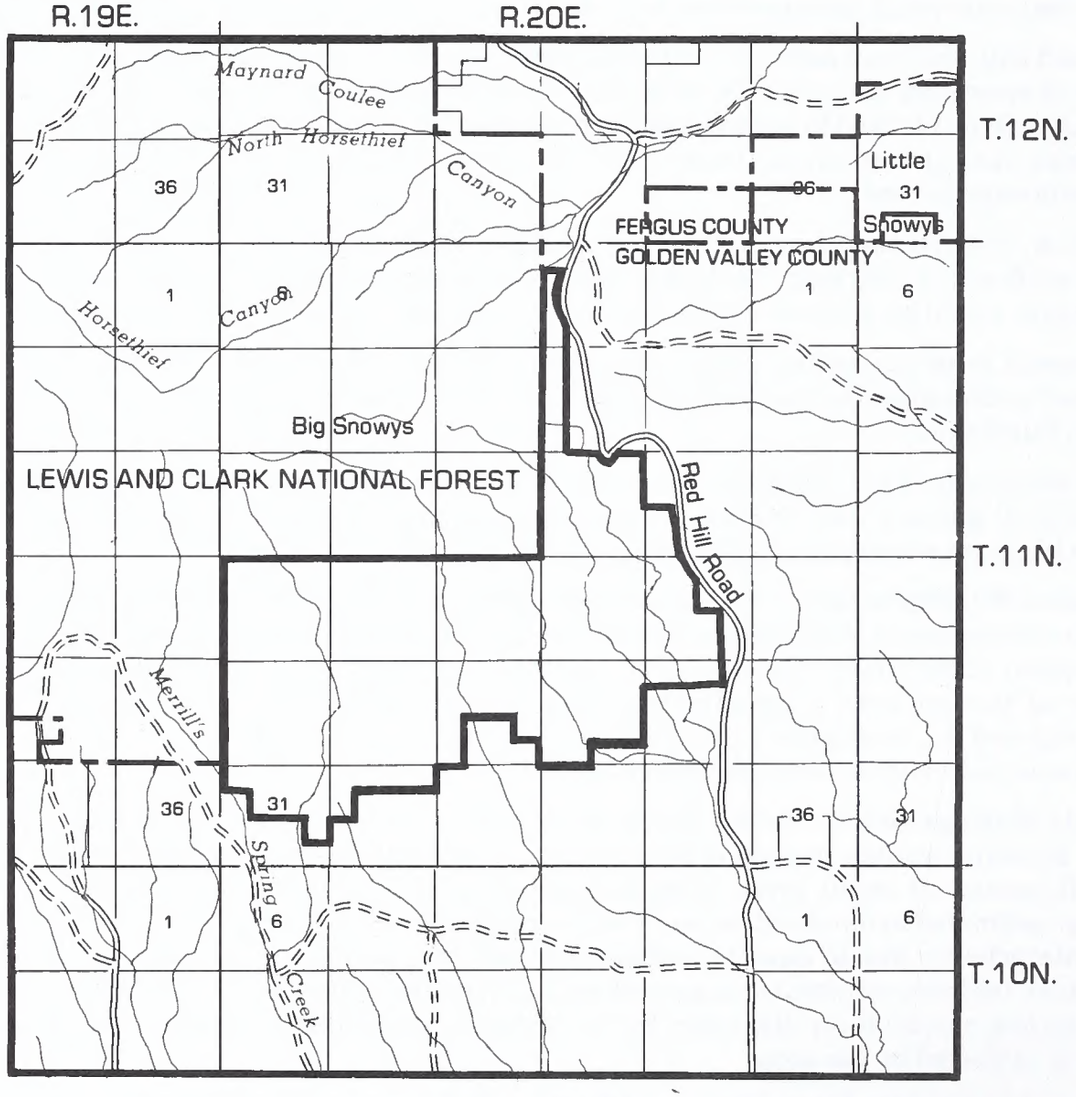
TWIN COULEE

MT-067-212

N

0 1 2 3

SCALE IN MILES



Fish, Wildlife and Parks for this area. Management of the habitat for these four species will be custodial in nature. Additionally, timber harvest design, clearcut size and selection of slash piles to be retained will be closely coordinated between all disciplines. An intensified level of monitoring will be initiated to document population numbers and changes in habitat quality and quantity resulting from the timber management program.

Recreation Management: This area will be used mainly for big game hunting. Associated motorized vehicle use will remain unrestricted, provided acceptable resource damage is not exceeded. It is projected that significant resource damage will not occur. However, if it does, management would consist of restricting vehicles to roads and to authorized use, or closing the area to vehicle use during hunting season. No recreation facilities or other management actions are proposed.

Wilderness Alternative

The entire 6,870 acres of the Twin Coulee WSA will be recommended as suitable for designation as wilderness. The WSA will be managed for the long-term preservation and protection of its wilderness values.

Timber Management: Under this alternative, no timber will be harvested on the entire 6,870 acres within the WSA.

Watershed Management: (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature.

Minerals Management: Under this alternative, 6,870 acres of public land will be withdrawn from mineral entry and leasing, subject to valid existing rights. It is unlikely that any of the 166 lode mining claims would prove to be valid through discovery. Claim maintenance (assessment) work will cease on invalid claims and the estimated 12 acres currently being disturbed annually, will begin to rehabilitate naturally. There will be no new surface disturbing activity due to mineral exploration.

Management for Elk, Deer, Bear and Turkey Habitat and Populations: No specific habitat enhancement actions for elk, deer, bear and turkey were proposed in the Billings RMP/FEIS for this WSA. No population goals have been established by BLM or the Montana Department of Fish, Wildlife and Parks for this area. Management of the habitat for elk, deer, bear and turkey will be custodial in nature.

Recreation Management: The area will be closed to all forms of motorized use and open to all types of nonmotorized use, which is primarily hunting.

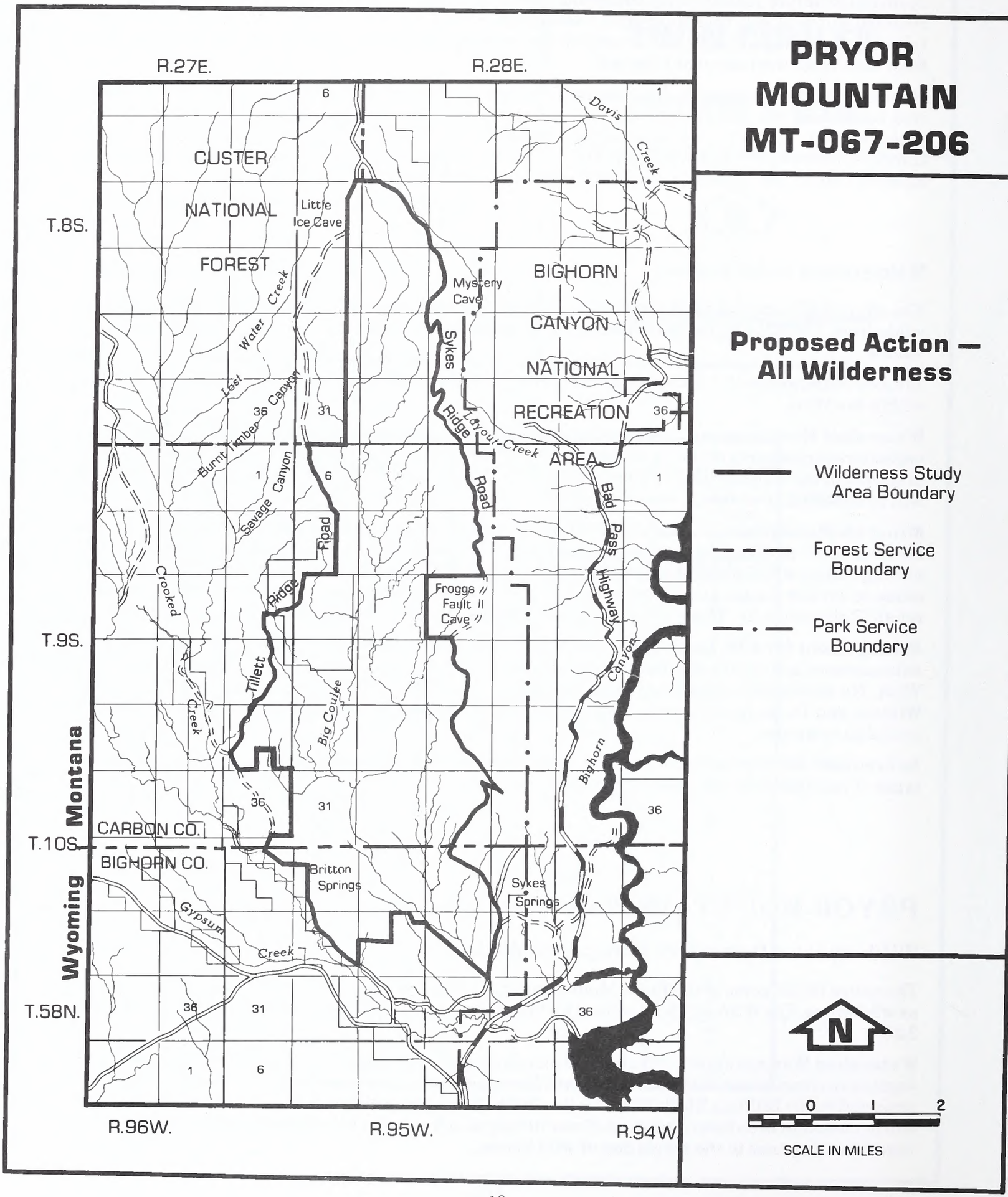
PRYOR MOUNTAIN WSA (MT-067-206)

Wilderness Alternative (Proposed Action)

The entire 16,927 acres of the Pryor Mountain WSA will be recommended as suitable for designation as wilderness. The WSA will be managed for long-term protection of its wilderness values. (See Figure 2.2.)

Watershed Management: (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature consisting of monitoring on a five-year cycle to document soil stability and vegetative response to the regulation of wild horses.

FIGURE 2.2
Pryor Mountain Alternative Map



Minerals Management: Under the proposed action, 16,927 acres of public land will be withdrawn from mineral entry and leasing, subject to valid existing rights. The following scenario is speculative, but reasonable. Based on the USGS mineral report and other information, it is projected that a validity examination of the 35 claims within the WSA would determine that there is no discovery of valuable mineral. Claim maintenance will cease.

Wild Horse Populations and Management: The primary objectives of the wild horse program are to maintain a healthy, viable horse herd while maintaining or improving the range and watershed conditions within the WSA. It is estimated, based on carrying capacity, that the WSA has a population of 35 horses, primarily from the Tillet Ridge herd. Wild horse numbers and forage utilization will be regulated within herd management areas to conform to within five percent of assigned carrying capacity, which will remain at the existing level of 35 head for the forseeable future. Regulation will consist of physical herding of wild horses within or among herd management areas by horseback, control of available water sources, control of season of use and removal of wild horses which cannot be accommodated within assigned carrying capacity levels of the three herds which comprise the population of 121. Periodic gathering operations will occur to round up wild horses to be removed for adoption. The gathering operation will be accomplished by horseback without the use of any motorized equipment. Captured animals will be trailed to existing roads which lie adjacent to the WSA for transportation to holding facilities.

To aid in the management of the wild horse herd, two water catchments will be constructed and approximately one mile of fence will be built with hand tools consistent with wilderness "management standards," and will be timed to avoid peregrine falcon nesting. It is estimated that these construction activities will disturb approximately one acre within the WSA. One water catchment will be located on Sykes Ridge and the other on Tillet Ridge. The fence will be located in the southern one-fifth of the WSA. The projects will have cultural clearances and any sites found will be avoided.

The standard to measure success of the proposed actions will be an upward trend in range and watershed condition at the end of 25 years, and a change in condition class (i.e., poor to fair or fair to good) at the end of 100 years. Condition will be monitored on a regular five-year cycle.

Wildlife Habitat and Population Management: No specific wildlife habitat enhancement actions or projects for either game or nongame species were proposed in the Billings RMP/FEIS for this WSA. An estimated 15 bighorn sheep rams use the area as summer range. The mule deer population is estimated at 75 and the black bear population is estimated at 4. The Montana Department of Fish Wildlife & Parks has a goal of increasing the bighorn sheep population from the current level of 34 to 100. Management of wildlife habitat will consist of an intensified level of monitoring of population levels and documenting changes in habitat/range condition which are achieved through the wild horse management program in order to provide input into any recommended changes in herd size. In the interim, management will be custodial in nature.

Threatened and Endangered Species Management: The only threatened or endangered plant or animal species suspected to occur within or near the WSA is the peregrine falcon. The BLM will continue to monitor the WSA for the occurrence of the peregrine falcon in support of the peregrine falcon recovery plan. Letters No. 103 and No. 109 summarize consultation with the FWS under Section 7 of the Endangered Species Act. To avoid possible effects to peregrine falcons, construction of two water catchments and one mile of fence for wild horse management and one mile of fence for cultural stabilization would be timed so as not to disturb any known peregrine habitat or nests. Should it be determined that any projected activity may affect the peregrine falcon, informal consultation with the U.S. Fish and Wildlife Service will be initiated immediately as required by Section 7 of the Endangered Species Act.

Recreation Management: Recreation use will be managed for primitive type recreation. Motorized vehicle use, including snowmobiles, will be prohibited within the WSA. However, motorized use will be permitted on adjacent roads. Signs will be placed on the edge of the WSA to control ORV use and identify the boundaries of the wilderness area and wild horse range.

Cultural Resource Management: Under the proposed action, cultural resource management will focus on maintenance of cultural resources in their existing context. Scientific research will be allowed, but only nonmotorized, nonimpairing field methods will be authorized. Physical stabilization of one site, including one mile of fence construction encompassing 45 acres, will be implemented under the wilderness "management standard." The fence will be removed when vegetation is reestablished. Interpretive structures, such as signs, will not be introduced into the WSA. Maintenance of existing site integrity will take place through a program of monitoring, coupled with efforts to educate the public not to disturb cultural resources within the WSA. The locations of the one mile of fence and two water catchments for wild horse management will be inventoried to ensure the avoidance of significant cultural resources and full Section 106 compliance will occur.

No Wilderness Alternative

The entire 16,927 acres of the Pryor Mountain WSA will be recommended as nonsuitable for designation as wilderness. The WSA will be managed primarily as a wild horse range without special consideration for wilderness values.

Watershed Management: This action is identical to the proposed action. (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature consisting of monitoring on a five-year cycle to document soil stability and vegetative response to the regulation of wild horses.

Minerals Management: Mineral entry will be allowed on 16,767 acres of the WSA. A Classification and Multiple Use Act classification, which prohibited mineral entry on much of the WSA, was dropped. That decision is currently involved in a lawsuit. Mineral entry on the remaining 160 acres of the WSA will be prohibited as a result of a pending withdrawal for the Crooked Creek National Natural Landmark.

The WSA contains prospective resources for uranium/vanadium, limestone, and bentonite. The uranium/vanadium deposits are small and localized and their development potential is considered low. While bentonite deposits have been identified in the southern portion of the WSA. There are

substantial deposits under claim outside of the area. Limestone occurs throughout the northern portion of the WSA. There are substantial reserves in an existing quarry 15 miles west.

The existing 35 lode mining claims will be maintained. The annual assessment work will consist of a small area (estimated at one-tenth acre or less) or surface disturbance per claim or series of claims that join or overlap. Overall disturbance due to annual assessment on the 35 individual claims will probably range from one to two acres within the WSA, including access maintenance.

Leasing with no surface occupancy stipulation on 16,927 acres would be allowed.

Due to low probability for discovery of marketable deposits, no new mineral exploration or development is projected.

Wild Horse Populations and Management: The primary objectives of the wild horse program are to maintain a healthy, viable wild horse herd while maintaining or improving the range and watershed conditions within the WSA. It is estimated, based on carrying capacity, that the WSA has a population of 35 horses.

Wild horse numbers and forage utilization will be regulated within herd management areas to conform to within five percent of assigned carrying capacity, which will remain at the existing level of approximately 35 horses for the forseeable future. Regulation will consist of physical herding of wild horses within or among herd management areas by horseback, control of available water sources, control of season of use and removal of wild horses which cannot be accommodated within assigned carrying capacity level of the three herds which comprise the population of 121. Periodic gathering operations will occur to round up wild horses to be removed for adoption. The gathering operation will be accomplished by horseback without the use of any motorized equipment. Captured animals will be trailed to existing roads which lie adjacent to the WSA for transportation to holding facilities.

To aid in the management of the wild horse herd, two water catchments will be constructed and approximately one mile of fence will be built. The construction will be timed to avoid peregrine falcon nesting. It will not be consistent with wilderness "management standards," in that mechanized equipment will be used. It is estimated that these construction activities will disturb approximately one acre within the WSA. One water catchment will be located on Sykes Ridge and the other on Tillet Ridge. The fence will be located in the southern one-fifth of the WSA. The projects will have cultural clearances and any sites found will be avoided.

The standard to measure success of the proposed actions will be an upward trend in range and watershed condition at the end of 25 years, and a change in condition class (i.e., poor to fair or fair to good) at the end of 100 years. Condition will be monitored on a regular five-year cycle.

These actions are identical to the proposed action, except that mechanized equipment will be used to construct the two water catchments and fence.

Wildlife Habitat and Population Management: This action is identical to the proposed action. No specific wildlife habitat enhancement actions or projects for either game or nongame species were proposed in the Billings RMP/FEIS for this WSA. An estimated 15 bighorn sheep rams use the area as summer range. The mule deer population is estimated at 75 and the black bear population is estimated at 4. The Montana Department of Fish, Wildlife & Parks has a goal of increasing the bighorn sheep population from the current level of 34 to 100. Management of wildlife habitat will consist of an intensified level of monitoring of population levels and documenting changes in habitat/range condition which are achieved through the wild horse management program in order to provide input into any recommended changes in herd size. In the interim, management will be custodial in nature.

Threatened and Endangered Species Management: These actions are identical to those in the proposed action. The only threatened or endangered plant or animal species suspected to occur within or near the WSA is the peregrine falcon. The BLM will continue to monitor the WSA for the occurrence of the peregrine falcon in support of the peregrine falcon recovery plan. Letters No. 103 and No. 109 summarize consultation with the FWS under Section 7 of the Endangered Species Act. To avoid possible effects to peregrine falcons, construction of two water catchments, one mile of fence for wild

horse management, and one mile of fence for cultural stabilization would be timed so as not to disturb any known peregrine habitat or nests.

Should it be determined that any projected activity may affect the peregrine falcon, informal consultation with the U.S. Fish and Wildlife Service will be initiated immediately as required by Section 7 of the Endangered Species Act.

Recreation Management: Presently, this WSA is closed to all motorized use except for snowmobiles and other authorized use which will continue under nonwilderness designation. There are no recreation facilities proposed. Signs will be placed along the boundary of the WSA to inform the public of the boundaries of the wild horse range and management restriction on ORV use.

Cultural Resource Management: Under this alternative, cultural resource management actions will be taken to enhance the preservation of individual sites, to publicly interpret sites, and to increase knowledge of local and regional prehistory. As with the proposed action, one site will be stabilized and one mile of fence encompassing 45 acres would be built. However, stabilization activities would be conducted with motorized equipment.

Actions to increase knowledge of prehistory will involve authorizing scientific research by qualified university affiliated archeologists. Such studies would vary from nondestructive mapping of surface features to collection of artifacts from the surface and excavation. Public interpretation of archeological sites in the WSA will take place through the placement of interpretive signs at one selected site.

The locations of the one mile of fence and two water catchments for wild horse management will be inventoried to ensure the avoidance of significant cultural resources and full Section 106 compliance will occur.

BURNT TIMBER CANYON WSA (MT-067-205)

Wilderness Alternative (Proposed Action)

The entire 3,430 acres of the Burnt Timber Canyon WSA will be recommended as suitable for designation as wilderness. The WSA will be managed to ensure the long-term protection of its wilderness values. (See Figure 2.3)

Watershed Management: (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature consisting of monitoring on a five-year cycle to document soil stability and vegetative response to the regulation of wild horses.

Minerals Management: Under the proposed action, 3,430 acres of public land will be withdrawn from mineral entry and leasing, subject to valid existing rights. No new surface disturbing mineral activity will be permitted. All areas of past disturbance will be allowed to rehabilitate naturally.

There are no existing mining claims. Due to the low probability for discovery of marketable deposits, no mineral activity is projected.

Wild Horse Populations and Management: The primary objectives of the wild horse program are to maintain a healthy, viable horse herd while maintaining or improving the range and watershed conditions within the WSA. It is estimated, based on carrying capacity, that the WSA has a population of 17 horses. Wild horse numbers and forage utilization will be regulated within herd management areas to conform to within five percent of assigned carrying capacity, which will remain at the existing levels of 17 for the forseeable future. Regulation will consist of physical herding of wild horses within or among herd management areas by horseback, control of available water sources, control of season of use and removal of wild horses which cannot be accommodated within assigned carrying capacity levels of the three herds which comprise the population of 121. Periodic gathering operations will occur to round up wild horses to be removed for adoption. The gathering operation will

FIGURE 2.3
Burnt Timber Canyon Alternative Map

Proposed Action — All Wilderness

Wilderness Study Area Boundary

Forest Service Boundary

Park Service Boundary

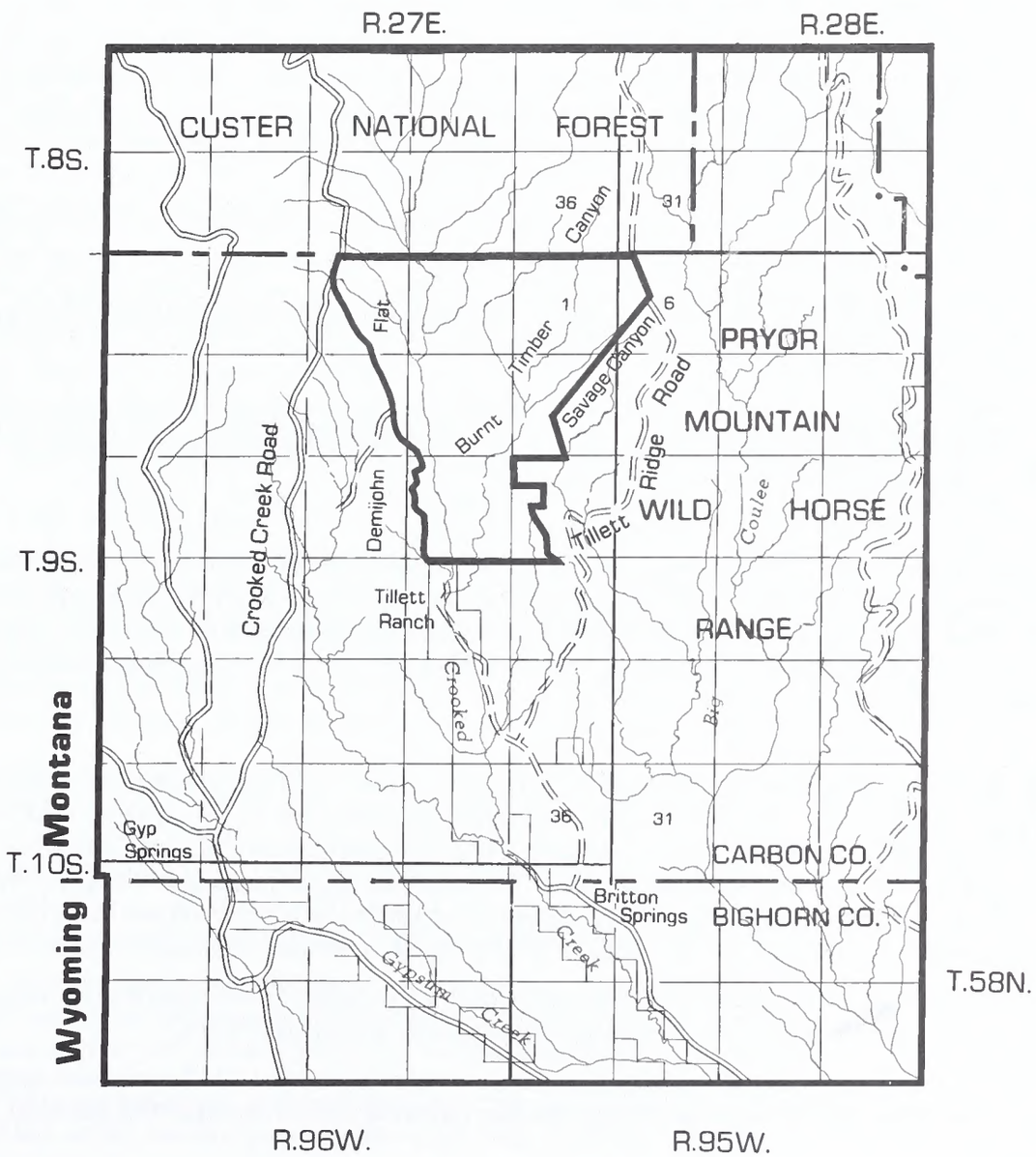
BURNT TIMBER CANYON

MT-067-205

N

1 0 1 2

SCALE IN MILES



be accomplished by horseback without the use of any motorized equipment. Captured animals will be trailed to existing roads which lie adjacent to the WSA for transportation to holding facilities.

To aid in the management of the wild horse herd, one water catchment will be constructed and approximately one-half mile of fence will be built with hand tools consistent with wilderness "management standards" and will be timed to avoid peregrine falcon nesting. It is estimated that these construction activities will disturb approximately one-half acre within the WSA and will be located in the northwest portion of the WSA. The projects will have cultural clearances and any sites found will be avoided.

The standard to measure success of the proposed actions will be an upward trend in range and watershed condition at the end of 25 years, and a change in condition class (i.e., poor to fair or fair to good) at the end of 100 years. Condition will be monitored on a regular five-year cycle.

Wildlife Habitat and Population Management: No specific wildlife habitat enhancement actions or projects for either game or nongame species were proposed in the Billings RMP/FEIS for this WSA. The mule deer population is estimated at 50 and the black bear population at 3. Management of wildlife habitat will consist of an intensified level of monitoring of population levels and documenting changes in habitat/range condition which are achieved through the wild horse management program in order to provide input into any recommended changes in herd size. In the interim, management will be custodial in nature.

Threatened and Endangered Species Management: The only threatened or endangered plant or animal species suspected to occur within or near the WSA is the peregrine falcon. The BLM will continue to monitor the WSA for the occurrence of the peregrine falcon in support of the peregrine falcon recovery plan.

Letters No. 103 and No. 109 summarize consultation with the FWS under Section 7 of the Endangered Species Act. To avoid possible effects to peregrine falcons, construction of one water catchment, one-half mile of fence for wild horse management, three and one-half miles of fence, and stablization of two archeological sites and excavation of one site would be timed so as not to disturb any known peregrine habitat or nests.

Should it be determined that any projected activity may affect the peregrine falcon, informal consultation with the U.S. Fish and Wildlife Service will be initiated immediately as required by Section 7 of the Endangered Species Act.

Recreation Management: Recreation use will be managed for primitive type recreation. Motorized vehicle use, including snowmobiles, will be prohibited within the WSA. However, motorized use will be permitted on adjacent roads. Signs will be placed on the boundary of the WSA to inform the public of the boundaries of the wilderness area, the wild horse range, and the management restriction on ORV use.

Cultural Resource Management: Under the proposed action, management of cultural resources will focus on maintenance of existing site integrity. Scientific research by excavation will be allowed on one site using only nonmotorized field methods. This will temporarily disturb less than one acre annually. Interpretive structures, such as signs, will not be introduced into the WSA. However, four sites will be interpreted from outside the WSA. Physical stabilization of two sites, excavation of one site, and fencing of six sites will be implemented under the wilderness "management standard."

Maintenance of existing site integrity will take place through a program of monitoring, coupled with efforts to educate the public not to disturb cultural resources within the WSA.

The locations of the one-half mile of fence and one water catchment for wild horse management will be inventoried to ensure the avoidance of significant cultural resources and full Section 106 compliance will occur.

No Wilderness Alternative

The entire 3,430 acres of the Burnt Timber Canyon WSA will be recommended as nonsuitable for designation as wilderness. The WSA will be managed primarily as a wild horse range without special consideration for wilderness values.

Watershed Management: This action is identical to the proposed action. (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature consisting of monitoring on a five-year cycle to document soil stability and vegetative response to the regulation of wild horses.

Minerals Management: Mineral entry will be allowed on all 3,430 acres of the WSA. A Classification and Multiple Use Act classification, which prohibited mineral entry on all of the WSA, was dropped. That decision is currently involved in a lawsuit.

The WSA contains prospective resources for uranium/vanadium, and limestone. The uranium/vanadium deposits are small and localized and their development potential is considered low. Limestone occurs throughout the northern portion of the WSA. There are substantial reserves in an existing quarry 15 miles west.

Leasing with no surface occupancy stipulation on 3,430 acres would be allowed.

There are no existing mining claims. Due to the low probability for discovery of marketable deposits, no mineral activity is proposed.

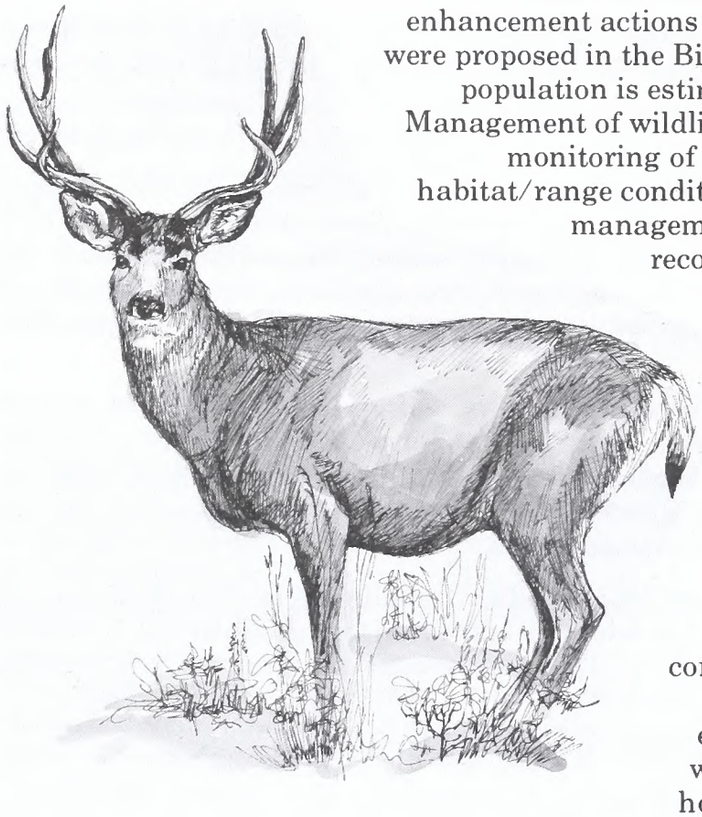
Wild Horse Populations and Management: The primary objectives of the wild horse program are to maintain a healthy, viable horse herd while maintaining or improving the range and watershed conditions within the WSA.

It is estimated, based on carrying capacity, that the WSA has a population of 17 horses. Wild horse numbers and forage utilization will be regulated within herd management areas to conform to within five percent of assigned carrying capacity, which will remain at the existing levels of 17 for the forseeable future. Regulation will consist of physical herding of wild horses within or among herd management areas by horseback, control of available water sources, control of season of use and removal of wild horses which cannot be accommodated within assigned carrying capacity levels of the three herds which comprise the population of 121. Periodic gathering operations will occur to round up wild horses to be removed for adoption. The gathering operation will be accomplished by horseback without the use of any motorized equipment. Captured animals will be trailed to existing roads which lie adjacent to the WSA for transportation to holding facilities.

To aid in the management of the wild horse herd, one water catchment will be constructed and approximately one-half mile of fence will be built. The construction will be timed to avoid peregrine falcon nesting. It will not be consistent with the wilderness management standards; in that mechanical equipment will be used. It is estimated that these construction activities will disturb approximately one-half acre within the WSA and will be located in the northwest portion of the WSA. The projects will have cultural clearances and any sites found will be avoided.

The standard to measure success of the proposed actions will be an upward trend in range and watershed condition at the end of 25 years, and a change in condition class (i.e., poor to fair or fair to good) at the end of 100 years. Condition will be monitored on a regular five-year cycle.

These actions are identical to the proposed action, except that mechanized equipment will be used to construct the water catchment and one-half mile of fence.



Wildlife Habitat and Population Management: This action is identical to the proposed action. No specific wildlife habitat enhancement actions or projects for either game or nongame species were proposed in the Billings RMP/FEIS for this WSA. The mule deer population is estimated at 50 and the black bear population at 3. Management of wildlife habitat will consist of an intensified level of monitoring of population levels and documenting changes in habitat/range condition which are achieved through the wild horse management program in order to provide input into any recommended changes in herd size. In the interim, management will be custodial in nature.

Threatened and Endangered Species Management: The only threatened or endangered plant or animal species suspected to occur within or near the WSA is the peregrine falcon. The BLM will continue to monitor the WSA for the occurrence of the peregrine falcon in support of the peregrine falcon recovery plan.

Letters No. 103 and No. 109 summarize consultation with the FWS under Section 7 of the Endangered Species Act. To avoid possible effects to peregrine falcons, construction of one water catchment, one-half mile of fence for wild horse management and three and one-half miles of fence for cultural site stabilization, stabilization of two sites and excavation of one site would be timed so as not to disturb any known peregrine habitat or nests.

Should it be determined that any projected activity may affect the peregrine falcon, informal consultation with the U.S. Fish and Wildlife Service will be initiated immediately as required by Section 7 of the Endangered Species Act.

Recreation Management: Presently, this WSA is closed to motorized use except for snowmobiles and authorized use which will continue under nonwilderness designation. No snowmobile use occurs due to lack of suitable snow conditions and rough terrain. There are no recreation facilities proposed. Signs will be placed on the boundary of the WSA to inform the public of the boundaries of the wild horse range and management restriction on ORV use.

Cultural Resource Management: Under this alternative, cultural resource management actions will be taken to physically preserve site integrity, to interpret cultural resources for the public, and to increase knowledge of local and regional prehistory. The integrity of six sites will be preserved by three and one-half miles of fence around 350 acres. Two of these sites will be stabilized using motorized equipment and involve a total of two acres. A third site will be excavated using motorized equipment. The seventh site is in no danger of vandalism or erosion, and does not require active management. Interpretation of cultural resources will be accomplished by placement of interpretive signs at six sites.

Opportunities to increase knowledge of prehistory will be implemented through the authorization of scientific research efforts by qualified university affiliated archeologists. Such studies would involve varying levels of disturbance from none, as in the photographic documentation of rock art, to collection of artifacts from the surface, and substantial excavation (from less than one to three acres) at one site.

Maintenance of existing site integrity will take place through a program of monitoring, coupled with efforts to educate the public not to disturb cultural resources within the WSA.

The locations of the one-half mile of fence and one water catchment for wild horse management will be inventoried to ensure the avoidance of significant cultural resources and full Section 106 compliance will occur.

BIG HORN TACK-ON WSA (MT-067-207)

Wilderness Alternative (Proposed Action)

The entire 2,550 acres of the Big Horn Tack-On WSA will be recommended as suitable for designation as wilderness. The WSA will be managed to ensure the long-term protection of its wilderness values. (See Figure 2.4.)

Watershed Management: (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature consisting of monitoring on a five-year cycle to document soil stability and vegetative response to the regulation of wild horses.

Minerals Management: Under this alternative, 2,550 acres of public land will be withdrawn from mineral entry or leasing, subject to valid existing rights. No new surface disturbing mineral activity will be permitted. All areas of past disturbance will be allowed to rehabilitate naturally.

There are no existing claims. Due to low probability of discovery of marketable deposits, no mineral activity is projected.

Wild Horse Populations and Management: The primary objectives of the wild horse program are to maintain a healthy, viable horse herd while maintaining or improving the range and watershed conditions within the WSA.

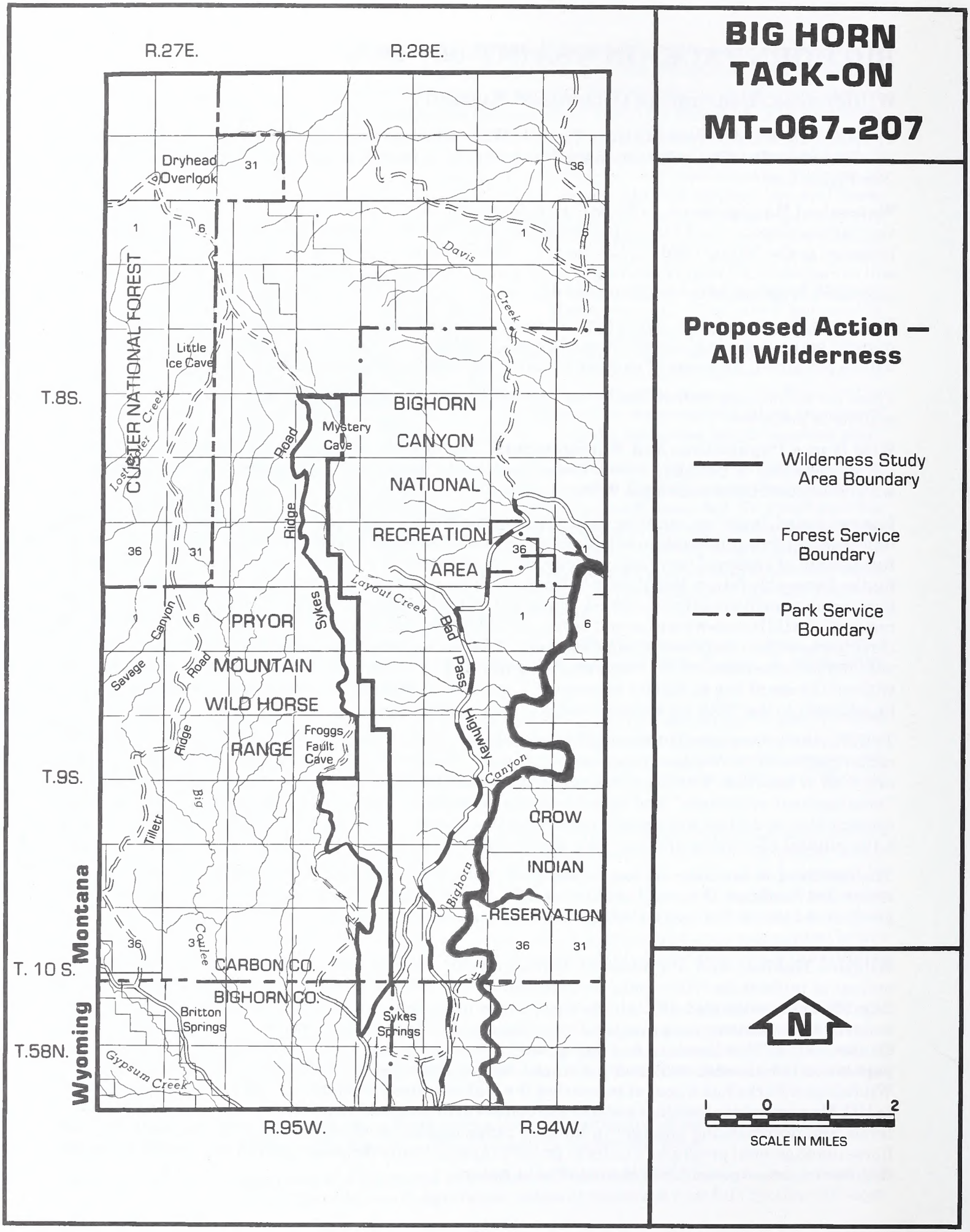
It is estimated, based on carrying capacity, that the WSA has a population of one horse. Wild horse numbers and forage utilization will be regulated within herd management areas to conform to within five percent of assigned carrying capacity, which will remain at the existing level of one horse head for the forseeable future. Regulation will consist of physical herding of wild horses within or among herd management areas by horseback, control of available water sources, control of season of use and removal of wild horses which cannot be accommodated within assigned carrying capacity level of the three herds which comprise the population of 121. Periodic gathering operations will occur to round up wild horses to be removed for adoption. The gathering operation will be accomplished by horseback without the use of any motorized equipment. Captured animals will be trailed to existing roads which lie adjacent to the WSA for transportation to holding facilities.

To aid in the management of the wild horse herd, one water catchment will be constructed in the west center portion of the WSA and approximately one-half mile of fence will be built within the southern one-fifth of the WSA. The construction will be built with hand tools consistent with the wilderness "management standards" and timed to avoid peregrine falcon nesting. It is estimated that these construction activities will disturb approximately one-half acre within the WSA. The projects will have cultural clearances and any sites found will be avoided.

The standard to measure success of the proposed actions will be an upward trend in range and watershed condition at the end of 25 years, and a change in condition class (i.e., poor to fair or fair to good) at the end of 100 years. Condition will be monitored on a regular five-year cycle.

Wildlife Habitat and Population Management: No specific wildlife habitat enhancement actions or projects for either game or nongame species were proposed in the Billings RMP/FEIS for this WSA. An estimated 15 bighorn sheep rams migrate through a portion of the WSA to travel between their summer range on the Pryor Mountain WSA and their winter range on the Big Horn Canyon NRA. This involves one day of use in the spring and one day in the fall. The mule deer population is estimated at 50 and the black bear population at 2. The Montana Department of Fish, Wildlife and Parks has a goal of increasing the bighorn sheep population from the current level of 34 to 100. Management of wildlife habitat will consist of an intensified level of monitoring of population levels and documenting changes in habitat/range condition which are achieved through the wild horse management program in order to provide input into any recommended changes in herd size. In the interim, management will be custodial in nature.

FIGURE 2.4
Big Horn Tack-On Alternative Map



Threatened and Endangered Species Management: The only federally recognized threatened or endangered plant or animal species which is suspected to occur within the WSA is the peregrine falcon. The BLM will continue to monitor the WSA for the occurrence of the peregrine falcon in support of the peregrine falcon recovery plan, and in close coordination with the National Park Service which conducts annual surveys in the Big Horn Canyon. Letters No. 103 and No. 109 summarize consultation with the FWS under Section 7 of the Endangered Species Act. To avoid possible effects to peregrine falcons, construction of one water catchment and one-half mile of fence would be timed so as not to disturb any known peregrine habitat or nests.

Should it be determined that any projected activity may affect the peregrine falcon, informal consultation with the U.S. Fish and Wildlife Service will be initiated immediately as required by Section 7 of the Endangered Species Act.

Recreation Management: Recreation use will be managed for primitive type recreation. Motorized vehicle use, including snowmobiles, will be prohibited within the WSA. However, motorized use will be permitted on adjacent roads. Signs will be placed on the boundary of the WSA to inform the public of the boundaries of the wilderness area and wild horse range and management restriction on ORV use.

Cultural Resource Management: Under the proposed action, management of cultural resources will focus on maintenance of existing site integrity. Scientific research will be allowed, but only nonimpairing field methods will be authorized. No fences, signs, stabilization or scientific excavation is projected. Cultural resource management actions will include monitoring site integrity and educating the public not to disturb cultural resources in the WSA.

The locations of the one-half mile of fence and one water catchment for wild horse management will be inventoried to ensure the avoidance of significant cultural resources and full Section 106 compliance will occur.

No Wilderness Alternative

The entire 2,550 acres of the Big Horn Tack-On WSA will be recommended as nonsuitable for designation as wilderness. The WSA will be managed primarily as a wild horse range without special consideration for wilderness values.

Watershed Management: This action is identical to the proposed action. (Watershed management is discussed as actions related to the soil and vegetative components of the environment.) No specific soil or vegetative enhancement actions were projected in the Billings RMP/FEIS for this WSA. Management of the soil and vegetative resources will be custodial in nature consisting of monitoring on a five-year cycle to document soil stability and vegetative response to the regulation of wild horses.

Minerals Management: Mineral entry will be allowed on all 2,550 acres of the WSA. A Classification and Multiple Use Act classification, which prohibited mineral entry on much of the WSA, was dropped. That decision is currently involved in a lawsuit.

The WSA contains prospective resources for uranium/vanadium deposits are small and localized and their development potential is considered low. Limestone occurs throughout the northern portion of the WSA. There are substantial reserves in the existing quarry 20 miles west.

Leasing with no surface occupancy stipulation on 2,550 acres would be allowed.

Due to the low probability for discovery of marketable deposits, no mineral activity is projected.

Wild Horse Populations and Management: The primary objectives of the wild horse program are to maintain a healthy, viable horse herd while maintaining or improving the range and watershed conditions within the WSA.

It is estimated, based on carrying capacity, that the WSA has a population of one horse. Wild horse numbers and forage utilization will be regulated within herd management areas to conform to within five percent of assigned carrying capacity, which will remain at the existing level of one horse for the

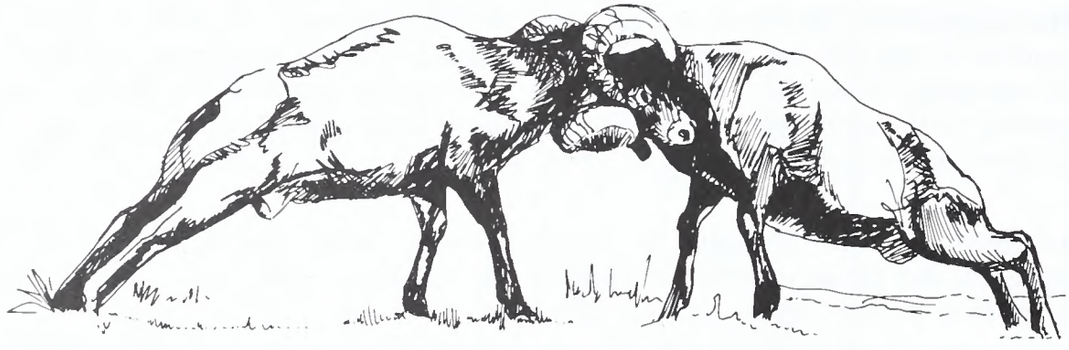
forseeable future. Regulation will consist of physical herding of wild horses within or among herd management areas by horseback, control of available water sources, control of season of use and removal of wild horses which cannot be accommodated within assigned carrying capacity level of the three herds which comprise the population of 121. Periodic gathering operations will occur to round up wild horses to be removed for adoption. The gathering operation will be accomplished by horseback without the use of any motorized equipment. Captured animals will be trailed to existing roads which lie adjacent to the WSA for transportation to holding facilities.

To aid in the management of the wild horse herd, one water catchment will be constructed in the west center of the area and approximately one-half mile of fence will be built in the southern one-fifth of the area. The construction will be timed to avoid peregrine falcon nesting. It will not be consistent with wilderness "management standards" in that mechanized equipment will be used. It is estimated that these construction activities will disturb approximately one-half acre within the WSA. The projects will have cultural clearances and any sites found will be avoided.

The standard to measure success of the proposed actions will be an upward trend in range and watershed condition at the end of 25 years, and a change in condition class (i.e., poor to fair or fair to good) at the end of 100 years. Condition will be monitored on a regular five-year cycle.

These actions are identical to the proposed action except that mechanized equipment will be used to construct the one catchment and the one half mile of fence.

Wildlife Habitat and Population Management: This action is identical to the proposed action. No specific wildlife habitat enhancement actions or projects for either game or nongame species were proposed in the Billings RMP/FEIS for this WSA. An estimated 15 bighorn sheep rams migrate through a portion of the WSA to travel between their summer range on the Pryor Mountain WSA and their winter range on the Big Horn Canyon NRA. This involves one day of use in the spring and one day in the fall. The mule deer population is estimated at 50 and the black bear population at 2. The Montana Department of Fish, Wildlife and Parks has a goal of increasing the bighorn sheep population from the current level of 34 to 100. Management of wildlife habitat will consist of an intensified level of monitoring of population levels and documenting changes in habitat/range condition which are achieved through the wild horse management program in order to provide input into any recommended changes in herd size. In the interim, management will be custodial in nature.



Threatened and Endangered Species Management: The actions are identical to those in the proposed action. The only threatened or endangered plant or animal species suspected to occur within or near the WSA is the peregrine falcon. The BLM will continue to monitor the WSA for the occurrence of the peregrine falcon in support of the peregrine falcon recovery plan. Letters No. 103 and No. 109 summarize consultation with the FWS under Section 7 of the Endangered Species Act. To avoid possible effects to peregrine falcons, construction of one water catchment and one-half mile of fence would be timed so as not to disturb any known peregrine habitat or nests.

Should it be determined that any projected activity may affect the peregrine falcon, informal consultation with the U.S. Fish and Wildlife Service will be initiated immediately as required by Section 7 of the Endangered Species Act.

Recreation Management: Presently, this WSA is closed to ORV use except for snowmobiles and authorized use which will continue under nonwilderness designation. No snowmobile use occurs due to lack of suitable snow conditions and rough terrain. There are no recreation facilities proposed. Signs will be placed on the boundary of the WSA to inform the public of the boundaries of the wild horse range and management restrictions for ORV use.

Cultural Resource Management: As with the proposed action, management of cultural resources will focus on maintenance of existing site integrity. Scientific research will be allowed. No fences, signs, stabilization or scientific excavation is projected. Cultural resource management actions will include monitoring site integrity and educating the public not to disturb cultural resources in the WSA.

The locations of the one-half mile of fence and one water catchment for wild horse management will be inventoried to ensure the avoidance of significant cultural resources and full Section 106 compliance will occur.

SUMMARY OF IMPACTS

Table 2.1 is a summary of impacts for Twin Coulee WSA, Pryor Mountain WSA, Burnt Timber Canyon WSA, and Big Horn Tack-On WSA.

TABLE 2.1
SUMMARY OF IMPACTS

Twin Coulee WSA (MT-067-212)

	No Wilderness — Proposed Action	All Wilderness
Impacts on Wilderness Values	All wilderness values within the harvested area, 4,612 acres, would be irreversibly lost and those on the adjacent 2,258 acres would be somewhat degraded.	The pristine naturalness, the outstanding opportunities for solitude provided by densely timbered rough terrain, and the scenic limestone outcrops and panoramic views would be protected and preserved on 6,870 acres.
Impacts on Timber Production Levels and Economics	The annual sustained yield would be .12 MMBF associated with harvest on 250 acres every 5 years. These forested lands are available for winter logging. This would result in annual revenues to the federal government general fund of $3,670 (total of $367,000), and $15,000 (total of $1,500,000) annually to the local economy.	Wilderness designation would remove 4,612 acres of productive forested land from the allowable harvest base. A volume of 12.3 MMBF, with an annual sustained yield of 0.12 MMBF, would be foregone. The significant value of this volume would be its role in the availability of the winter logging volume of 16 percent within the region. Also, $367,000 revenue to the federal government general fund ($3,670 annually) and $1,500,000 revenue to the local economy ($15,000 annually) will be foregone.
Impacts on the Watershed Resource	The projected timber harvest program will cause an increase in direct run-off and erosion on 114 acres in the short term (two to three years) and 51 acres in the long term. Claim maintenance on 10 to 12 acres will have no net impacts on the watershed resource.	Elimination of any ground disturbing activities would protect watershed values on the WSA.
Impacts on Mineral Exploration and Production	There will be no effect on mineral exploration or development on 6,870 acres. No exploration or production is anticipated due to low development potential.	Wilderness designation would preclude further exploration but would not significantly affect mineral production due to the low probability for discovery.
Impacts on Elk, Mule Deer, Bear and Turkey Habitat and Populations	Projected timber harvest would reduce thermal cover, increase forage, create 50 miles of vegetative edge, and provide a more diverse vegetative community for mule deer, elk, black bear and turkey. Projected minerals actions would have a minimal effect on all species. However, populations of 150 for mule deer, 35 for elk, and 21 for black bear would not increase due to lack of available water. The turkey population would increase from 100 to 125.	Elk, mule deer, bear and turkey habitat, population levels and season of use of 150 mule deer, 35 elk, 21 black bear and 100 turkey would be protected. The opportunity to increase turkey populations by 25 would be foregone.
Impacts on Recreation Use	Hunting use, associated with motorized vehicle use, is expected to increase from 20 to 170 visitor days annually. Nonmotorized hunting use will remain at 980 visitor days annually. Other motorized use will remain at 500 visitor days annually.	Motorized recreation use will be decreased from 20 visitor days to none. Nonmotorized use of 1480 visitor days annually will increase at 1 to 2 percent annually for a decade.

TABLE 2.1 (Continued)
SUMMARY OF IMPACTS

Pryor Mountain WSA (MT-067-206)

	Wilderness Alternative (Proposed Action)	No Wilderness
Impacts on Wilderness Values	The high levels of naturalness and outstanding opportunities for solitude would be statutorily protected and preserved on 16,927 acres. These values would be enhanced slightly due to the rehabitation of two acres of mining claim disturbance and solitude would be slightly enhanced due to the elimination of claim maintenance and snowmobile use.	Mining claim maintenance, snowmobile use, fence construction, and archeological site stablization utilizing motorized equipment would slightly degrade naturalness and solitude on approximately 6,000 acres.
Impacts on the Watershed Resource	Over the long term (100 years), the projected improvement in ecological range conditions on 11,000 acres will be a benefit to watershed conditions. Improvement in watershed conditions due to prevention of mineral assessment work would be positive.	Over the long term, 100 years, the projected improvement in ecological range conditions on 11,000 acres will be a benefit to watershed conditions.
Impacts on Mineral Exploration and Production	Although exploration would be prohibited, there will be no effect on mineral production due to low potential for such development.	There would be no effect on mineral exploration or development on 16,767 acres. No exploration or production is anticipated due to low development potential.
Impacts on Wild Horse Populations and Management	There would be an increase of forage availability on 11,000 acres for 35 horses and a minute decrease in harassment of the horses due to the cessation of activities on 35 claims and 50 visitor days of snowmobile use.	There would be an increase of forage available on 11,000 acres for 35 horses (identical to the proposed action) and minute harassment of the horses due to the maintenance of 35 claims and 50 visitor days of snowmobile use.
Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations	The proposed action will protect and preserve the existing habitat for a population of 75 mule deer, 4 black bear, and 15 bighorn rams.	The existing habitat for a population of 75 mule deer, 4 black bear, and 15 bighorn rams will be maintained.
Impacts on Peregrine Falcon Habitat and Population	The proposed action will protect and preserve peregrine falcon habitat and population.	Peregrine falcon habitat would remain substantially unchanged. It is expected that the affects under this alternative would be essentially the *same* as those under the proposed action. However, this is not assured.
Impacts on Recreation Use	Fifty user days of snowmobile use will decrease to 0 and annual nonmotorized use of 3000 visitors is projected to increase by two to three percent for decade and then return a one to two percent annual increase. The opportunity to interpret one cultural site by on-site signing will be foregone.	Annual recreational use of 3,000 visitor days will increase by 1 to 2 percent annually, snowmobile use will continue at 50 visitor days annually, and on-site intrepretive signing of one cultural site will provide benefits to users.
Impacts on Cultural Resources	Two significant archeological sites will be preserved and protected.	Two significant archeological sites will be preserved and protected. One significant site will be interpreted for public education.

TABLE 2.1 (Continued)
SUMMARY OF IMPACTS

Burnt Timber Canyon WSA (MT-067-205)

	All Wilderness (Proposed Action)	No Wilderness
Impacts on Wilderness Values	Wilderness values on 3,430 would be protected and preserved.	Fence and water catchment construction, as well as archeological site stabilization and excavation utilizing motorized equipment, would degrade naturalness and solitude on approximately 100 acres.
Impacts on the Watershed Resource	Watershed conditions would improve on 700 acres in the long term (100 years).	Watershed conditions would improve on 700 acres in the long term (100 years). These impacts are identical to those under the proposed action.
Impacts on Mineral Exploration and Production	Although exploration would be prohibited, there would be no effect on mineral production due to low potential for such development.	There would be no effect on mineral exploration or production. No exploration or production is anticipated due to low development potential.
Impacts on Wild Horse Populations and Management	There would be an increase of forage availability on an estimated 700 acres and 17 horses would be protected.	There would be an increase of forage availability on an estimated 700 acres and 17 horses would be protected. This is identical to the impacts under the proposed action.
Impacts on Mule Deer, Black Bear, and Bighorn Sheep Habitats and Population	The proposed action will protect and preserve the existing habitat for a population of 50 mule deer and 3 black bear. The habitat for the big horn sheep will be enhanced and they might use the WSA as summer range.	The existing habitat for a population of 50 mule deer and 3 black bear will be maintained. The habitat for big horn sheep will be enhanced and they might use the WSA for summer range.
Impacts on Peregrine Falcon Habitat and Population	The proposed action will protect and preserve peregrine falcon habitat and population.	Peregrine falcon habitat would remain substantially unchanged. It is expected that the affects under this alternative would be the same as those under the proposed action. However, this is not assured.
Impacts on Recreation Use	Annual nonmotorized use will increase from two to three percent for a decade and then return to one to two percent. The opportunity to interpret two of six cultural sites will be foregone.	Annual recreational use of 1500 visitor days will increase by one to two percent annually and on-site interpretive signing of six cultural sites will provide benefits to users.
Impacts on Cultural Resources	Seven significant archeological sites will be protected, and additional information recovered from one site. Four significant sites will be interpreted for public education.	Seven significant archeological sites will be protected, and additional information recovered from one site. Six significant sites will be interpreted for public education.

TABLE 2.1 (Continued)
SUMMARY OF IMPACTS

Big Horn Tack-On WSA (MT-067-207)

	All Wilderness (Proposed Action)	No Wilderness
Impacts on Wilderness Values	All wilderness values on 2,550 acres would be protected and preserved.	Naturalness and solitude would be slightly degraded on 20 acres by construction of a water catchment and one-half mile of fencing.
Impacts on the Watershed Resource	Watershed conditions would improve on 1,600 acres in the long term (100 years).	Watershed conditions would improve on 1,600 acres in the long term (100 years). These impacts are identical to those under the proposed action.
Impacts on Mineral Exploration and Production	Although exploration would be prohibited, there would be no effect on mineral production due to low potential for such development.	There would be no effect on mineral exploration or production. No exploration or production is anticipated due to low development potential.
Impacts on Wild Horse Population and Management	There would be an increase of forage available on an estimated 1,600 acres and one wild horse would be protected.	There would be an increase of forage available on an estimated 1,600 acres and one wild horse would be protected. This is identical to the impacts under the proposed action.
Impacts on Mule Deer, Black Bear, and Bighorn Sheep Habitat and Population	The proposed action will protect and preserve the existing habitat for 50 deer, 2 black bear and 15 bighorn rams.	The existing habitat for a population of 50 mule deer, 2 black bear and 15 bighorn rams will be maintained.
Impacts on Peregrine Falcon Habitat and Population	The proposed action will protect and preserve peregrine falcon habitat and population.	Peregrine falcon habitat would remain substantially unchanged. It is expected that the impacts under this alternative would be essentially the same as those under the proposed action. However, this is not assured.
Impacts on Recreation Use	An increase will occur in nonmotorized use of two or three percent for a decade.	An increase will occur in nonmotorized use of 850 visitor days of one to two percent annually.
Impacts on Cultural Resources	Archeological sites will be protected and preserved.	Archeological sites will be protected.

AFFECTED ENVIRONMENT

This chapter describes for each WSA the environment affected by the proposed action and alternative. To describe the general area, a discussion of the setting and geology/topography is provided. Neither of these factors will be affected under any alternative considered in this document and, therefore, are not considered in the impact discussions in Chapter 4.

TWIN COULEE WSA (MT-067-212)

Setting

The Twin Coulee WSA is located in Golden Valley County along the southeast flank of the Big Snowy Mountains, approximately 35 miles south of Lewistown, Montana. Twin Coulee WSA consists of steep, mountainous topography with several deeply incised drainages. Most of the WSA is made up of a mixed coniferous forest with bunch grasses for an understory. Elevations range from approximately 5,500 to 7,600 feet. (See Figure 3.1.)

Geology/Topography

The Big Snowy Mountains occur as a broad pine-covered range rising above the surrounding plains. The maximum elevation is 8,730 feet at Greathouse Peak. The Twin Coulee WSA are located in the southeast corner of the Big Snowy Mountains. Elevations in the WSA range from approximately 7,600 feet in the northwest corner, to 5,500 feet along Red Hill Road on its eastern edge. The area is very rugged, with several deeply incised drainages and extensive outcrops of bare limestone and sandstone.

Sedimentary strata exposed in the Twin Coulee area are assigned to the Madison and Big Snowy Groups of Mississippian Age. The rock types are predominantly limestone, with lesser amounts of shale and sandstone. The strata have been folded during the Big Snowy Uplift (Laramide) into a large northwest-southeast trending, southeast plunging anticline. The Twin Coulee area lies near the nose of the anticline. Strata thus dip away from the core of the structure, to the east, southeast or south. Madison Group limestones are exposed at higher elevations, while Big Snowy Group strata outcrop along the flanks of the range.

Wilderness Values

Size

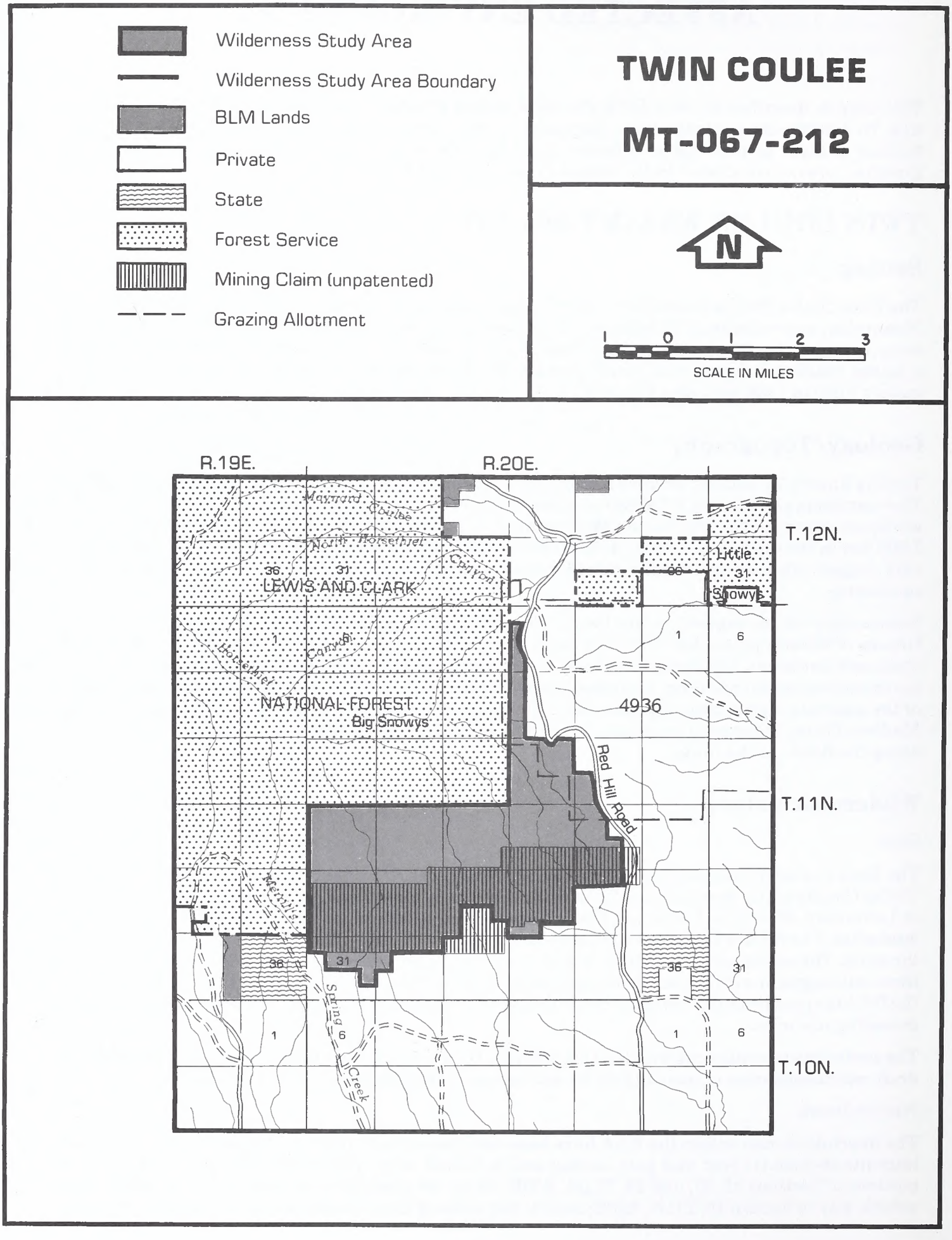
The Twin Coulee Wilderness Study Area (WSA) consists of 6,870 acres. The WSA is located in Golden Valley County along the southeast flank of the Big Snowy Mountains, approximately 35 miles south of Lewistown, Montana. Lewis and Clark National Forest lands border this area on the north and west sides. The WSA is bordered on the east by a county road (Red Hill Road) and by private lands on the south. The northeast portion of the WSA is a narrow finger of land adjacent to the Red Hill Road. A three-mile segment with a core to perimeter distance of less than 250 yards exists. However, the bulk of the WSA is approximately two miles in width and 4.5 miles in length, with a core to perimeter distance exceeding one mile.

The study area is contiguous with the USFS RARE II Area 1-739, Big Snowies. The USFS released its draft recommendation of nonsuitable for wilderness for the Big Snowies in July 1982.

Naturalness

The imprints of man within the WSA have been determined to be substantially unnoticeable. These imprints include (1) post and pole cutting and a vehicle way, apparently used as a haul road in portions of Sections 21, 27, and 28, T11N, R20E; (2) an old road cut in Section 15, T11N, R20E; (3) a vehicle way in Section 10, T11N, R20E; and (4) two miles of fence located along the eastern/southern

FIGURE 3.1
Twin Coulee Wilderness Study Area



boundaries of the area. None of these "imprints" have been used for a number of years, except for the fence, and appear to be a part of the natural scene. They contribute an interesting history to the area.

The natural scene ranges from very deep canyons located in the core of the WSA, to gently undulating hills located in the southeastern portion. About 90 percent of the WSA is blanketed by forest, with the remaining 10 percent consisting of meadows and rock outcrops. The forested areas range from stagnate, dense lodgepole stands which are not pleasing to the eye, to the ponderosa pine/meadow type, which is quite appealing to the senses. Other forest stands of interest are the mixed stands of Douglas fir/lodgepole and ponderosa pines. The meadows and rock outcroppings are not unique but do add diversity to the rolling sea of forest.

Solitude

The WSA's size, vegetative and topographic screening, and blocked configuration (3 miles wide by 5 miles long) combine to provide outstanding opportunities for solitude. This large area, being blocked up as it is, increases the chances that an individual will feel isolated and undisturbed by the sights and sounds of man within and outside of the WSA. The dense lodgepole stands, ponderosa pine/Douglas fir and meadows create vegetative barriers to the sights and sounds of other individuals and enables a visitor to find seclusion. The rolling topography and steep, deep canyons provide additional screening and a feeling of spaciousness. The effective screening allows for a relatively high recreation carrying capacity, while maintaining excellent opportunities for seclusion.

The effective screening also reduces the impacts of man's activities which occur outside the WSA. The largest activity comes from regular traffic on the Red Hill Road, which forms the WSA's eastern boundary for approximately five miles. It is a county-maintained road connecting Lewistown with a number of dispersed ranches, and carries a relatively large volume of traffic (50 vehicles per day, according to the Montana State Highway Department) through portions of Section 14, 15, and 23. Also, some ranching activity can be seen to the south, but this is in the distance and has little impact on solitude. Overall, there are ample opportunities existing to find places which are vegetatively or topographically screened from these outside sights and sounds.

Primitive and Unconfined Recreation

This WSA offers opportunities for hunting, hiking, camping, rock climbing and nature study. Any outstanding opportunity for primitive and unconfined recreation is limited due to the dense forest cover, steep slopes, limited numbers of wildlife, limited water sources, and limited access. Winter access to this area is possible by cross-country skis or snowshoes, but the steepness and heavy timber in the interior make the area impractical for most winter sports.

Supplemental Values

Limestone outcroppings in some of the higher areas and well-defined drainages enhance the scenic quality of the area. Scenic vistas of the adjacent prairie lands to the south and the southern slopes of the Big Snowy Mountains can be obtained from some of the higher portions of the WSA, but from most areas, visibility is extremely limited by dense stands of timber.

Timber

In 1975, an extensive inventory of the forest values was completed in the Twin Coulee WSA. The major species are ponderosa pine, Douglas fir and lodgepole pine. Scattered Engelmann spruce patches and individual trees are also found along the moist drainages, and limber pine is also found on the higher ridges. The stands are in good condition, with a minimal loss attributed to spruce budworm. Within the 6,870 acre area, 4,612 acres are classified as commercial forest, 1,495 as noncommercial and 763 as nonforested. The total volume is estimated to be 9.4 million board feet (MMBF) ponderosa pine, 2.6 MMBF of Douglas fir and 0.3 MMBF of lodgepole pine which is less than 5 percent of the total available volume on private land and USFS lands within the region. No harvesting has been done in this WSA, except for some horse logging in the 1930s.

This is the only area of this size within the Billings Resource Area that has commercial timber on it. Approximately 75 percent of the commercial timber within the Snowy Mountain region is located on

private and state lands, and, approximately 20 percent on USFS lands. Average volumes per acre on commercial forest land are approximately equal for all ownerships. Therefore, the distribution of commercial forest volumes correspond to commercial forest acreages. BLM's five percent is a small amount, but it is located in an area of little snow accumulation therefore, it can be logged during winter months. Approximately 80 percent of the USFS timber and 70 percent of the private/state timber cannot be logged during winter months due to the large snow accumulations. Therefore, BLM timber is not a large volume but is an important part of the timber supply during winter months (16 percent).

Watershed

All drainages in this study area are ephemeral. No known watershed problems exist other than channel erosion from intensive local storm activity.

Soils

The soils of this WSA are developed from sedimentary bedrock, primarily limestone. Soil depths range from very shallow to deep. Surface runoff is usually rapid. Parent materials in the WSA are the limestones of the Madison Group.

Vegetation

Much of this WSA is forested with Douglas fir, limber pine, ponderosa pine and lodgepole pine. Depending on the density of the forest canopy, understory consists primarily of forbs, shrubs, and bunchgrasses. Sparse amounts of pinegrass and elk sedge are also present.

On the open ridgetops and under the less dense forest canopies, shrubby cinquefoil is the dominant shrub with numerous forbs and some grass species also present. Grasses include Idaho fescue, Kentucky bluegrass and timber oat grass.

Minerals

The Heath Formation includes black petroliferous limestones and shales. It serves as a source rock for much of the oil produced in central Montana. The black shales may also contain anomalous concentrations of heavy metals, including zinc, selenium, nickel, and molybdenum. The formation underlies an extensive area of central and eastern Montana (Desborough 1981).

The Heath Formation lies just south of the WSA. In April 1981, two companies located lode mining claims in the area, probably for the metal-bearing shales described above. One group of 100 claims lies in the southern portion of the WSA. A second group of 66 claims blankets its southwestern corner. Both groups lie somewhat north of the Heath outcrop (the Heath has been eroded from the claimed areas). The companies are maintaining their claims, though little exploration has ensued to date, and no plan of operations under 43 CFR 3802 has yet been filed with the BLM. (See Figure 3.1.)

The development potential of these metal-bearing petroliferous shales is considered to be low.

Limestone outcrops are present throughout the WSA. Its development potential is considered to be low.

The U.S. Geological Survey has examined the petroleum potential of wilderness areas and wilderness study areas in Montana (Perry, et al. 1983). The authors have determined that this WSA has a zero to low potential for discovery of petroleum, since possible source and reservoir rocks are exposed upon the Big Snowy anticline, and any generated hydrocarbons could have escaped to the surface as seeps.

Although the WSA is not leased for oil and gas there are two post-FLPMA oil and gas lease applications which encompass the entire WSA (M72008 and M50216).

Terrestrial Wildlife

The Twin Coulee WSA does not contain any perennial streams or other sources of permanent water supply. Because of the absence of water, wildlife populations and species distribution are limited.

The primary big game species that occur in the area include mule deer, elk, antelope and black bear. Utilization of the area by approximately 150 mule deer and 35 elk is highest during winter months, primarily for thermocover. Approximately 50 antelope utilize the rolling foothills on a year-around basis.

Approximately 21 black bear probably utilize the study area throughout the year as part of their natural range in the Snowy Mountains.

The only game birds known to occur in the study area are approximately 75 mountain (blue) grouse and 100 Merriam's turkeys in the forested areas, and 35 sage grouse on the lower elevation grass and sagebrush-covered prairie. The turkeys use the area primarily during spring and fall.

Predators or carnivorous animals in this WSA include black bear, skunk, coyote, red fox, bobcat and mountain lion (BLM 1982).

There are no known or potential threatened or endangered species in the Twin Coulee WSA.

Recreation

Total use is approximately 1,500 recreation visitor days annually. Hunting is the major recreational use in Twin Coulee. The number of hunter days spent is approximately 1,000 per year, and the State Comprehensive Outdoor Recreation Plan (Montana Department of Fish, Wildlife and Parks, 1978) indicates that the general area near Twin Coulee is used for hunting mule deer and, occasionally, whitetail deer, black bear and elk. The only motorized use is approximately 20 vehicle days 5 to 10 times a year in association with hunting on the edge of the WSA. Due to rough terrain, ninety-five percent of the WSA is not conducive to motorized use.

Other types of recreation use include picnicking, hiking and cross country skiing. It is all nonmotorized and is approximately 500 visitor days annually.

Cultural Resources

The entire Twin Coulee WSA was inventoried for cultural resources in 1977. Archaeological survey identified three prehistoric rockshelters, two historic rockshelters, a historic cabin, and a prehistoric chert quarry. An additional 18 rockshelters were identified as having potential for past human habitation, but did not reveal indisputable evidence of such habitation. Of the recorded sites, one, a prehistoric rockshelter, was evaluated by BLM as potentially eligible for nomination to the National Register of Historic Places. No subsequent test excavations to determine eligibility have been conducted.

Economic Conditions

There is minimal economic activity associated with the Twin Coulee WSA. There is an existing grazing permit for 69 AUMs on 600 acres along the eastern boundary of the study area. It is estimated

that an average value for BLM grazing permits is approximately $100 per AUM or $1,200 per animal unit. Therefore, the estimated value of the existing permit is $6,900.

Within the 6,870 acre area, 4,612 acres are classified as commercial forest, 1,495 as noncommercial and 763 acres as nonforested. The total volume is estimated to be 9.4 million board feet (MMBF) of ponderosa pine, 2.6 MMBF of Douglas fir and 0.3 MMBF of lodgepole pine. No harvesting has been done in this WSA, except for some horse logging in the 1930s. This is the only area within the resource area (swing radii from the mills) of this size that has commercial timber on it. Approximately 75 percent of the commercial timber within the region is located on private and state lands, and approximately 20 percent of USFS land. The BLM land's commercial timber consists of five percent, which is a small amount but is located in an area of little snow accumulation, thus it can be logged during winter months. Approximately 80 percent of the USFS timber and 70 percent of the private/state timber cannot be logged during winter months. Therefore, BLM timber is not a large amount, comparatively, but is an important part (16 percent) of the winter timber supply.

Overall, stumpage value is estimated at $367,000. Total harvest will generate $1.5 million, or $15,000 a year to the local economy during a 100 year rotation cycle.

Mineral potential is estimated to be low in the area, therefore little or no economic activity is expected.

PRYOR MOUNTAIN WSA (MT-067-206)

Setting

The Pryor Mountain WSA is located approximately 15 miles north of Lovell, Wyoming, along the southern slopes of the Pryor Mountain Range. These mountains are a series of northwest-southeast ridges with steep northeasterly-facing scarps, and gentle slopes to the southwest. Elevations range from 3,800 feet to 8,700 feet.

There are 12,575 acres located in Carbon County, Montana, while the remaining 4,352 acres are located in Big Horn County, Wyoming. (See Figure 3.2.)

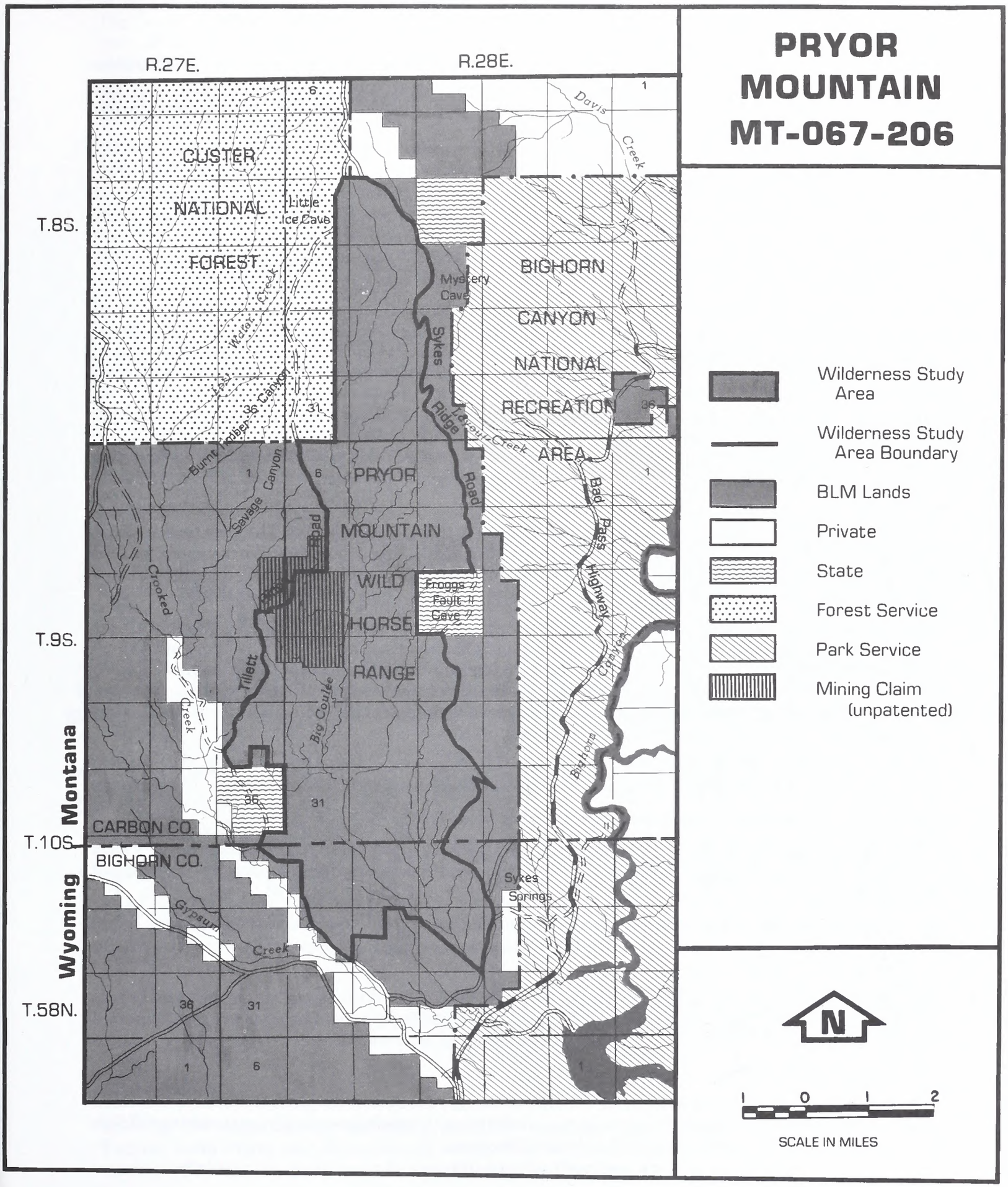
Geology/Topography

This WSA is located in southcentral Montana. The area extends from the foothills to the upper slopes of East Pryor Mountain. The mountain has steep north and east scarp faces, with smooth southwestern slopes broken by moderately incised drainages. Elevations on the northeast flank of the mountain exceed 8,700 feet decreasing to 3,800 feet in Big Coulee at the southern boundary.

Sedimentary strata exposed in the area represent a generally complete sequence of deposition from the Middle Cambrian through the lower Cretaceous Periods (an interval of nearly 400 million years), with a total thickness of rock exceeding 4,500 feet (Blackstone 1975).

The East Pryor Mountain is one of several of the major structural units which comprise the Pryor Mountain Range. The geologic structure developed from vertical uplift with its origin deep within the Precambrian "basement" rocks (Blackstone), producing anticlines (upfoldings of the rock), which often rupture into faults on their northeastern edges. The Dryhead Fault is the major north-south structure along which the movement occurred. This uplift and subsequent erosion produced the landforms present today. East Pryor Mountain is a north-south trending ridge with steep north and east-facing fault scarps and gentle dip slopes to the south and southwest. The upper slopes are dominated by the limestones of the Mississippian Madison Formation, while younger strata outcrops to the south and southwest. Older rocks outcrop on the east-facing scarp (toward Dryhead Basin). The only exposure of Precambrian (crystalline) rocks is found at the base of this scarp.

FIGURE 3.2
Pryor Mountain Wilderness Study Area



Wilderness Values

Size

This area consists of 16,927 acres. The Sykes Ridge Road forms the eastern boundary, the Burnt Timber Canyon-Tillett Ridge Road, and Custer National Forest lands border the western side. The southern boundary is formed by regularly used county roads as well as private ownership boundaries. The WSA averages 12 miles in length and two miles in width.

Naturalness

The limited evidence of man's presence within the study area is not concentrated in any particular area and is usually well screened by topography and vegetation. The WSA contains one range management enclosure, one water catchment, one reservoir, three wild horse traps, four and one-half miles of fence and six miles of vehicle-ways. There are at least 23 prospecting pits for uranium within the WSA. Most are located along or near boundary roads.

All these man-made features have a minute effect on the naturalness because of location. Some are located in canyons which are out of sight. These features are aged so they appear somewhat natural and they are not all concentrated in one location. Since adjacent lands are of a natural appearance, off-site intrusions are minute and any large man-made features are in the background or almost invisible from the WSA.

Solitude

Opportunities for solitude throughout the majority of the Pryor Mountain WSA are outstanding. The intricate drainage patterns and topographic relief offer ample opportunities for isolation to individuals or groups.

The WSA is extensive, being 12 miles in length and one to three miles in width. The area rises from an elevation of 3,800 feet in the south to 8,700 feet in the north. The topography varies from an arid sonoran landform in the south, to mountain foothills in the central region, to densely forested mountains in the north. Each portion of the WSA has excellent opportunities for solitude.

The expanse of the southern portion compensates for the lack of vegetative screening. There are some patches of juniper and eroded hillocks which provide some screening. The central portion is more broken with many patches of timber. The mountain topography in the north is characterized by steep cliffs, dense timber which provides excellent opportunities for solitude. Solitude is slightly degraded in the northern third of the WSA approximately two months each year by 50 visitor days of snowmobile use.

Big Coulee is the major north-south drainage near the center of this WSA. This deep channel with an array of rugged side drainages would tend to disperse users, and increase opportunities for solitude.

Primitive and Unconfined Recreation

There are outstanding opportunities for hiking, backpacking, nature and wildlife photography, rock climbing, nature study and viewing geologic features within the mountain foothills and canyons of this WSA.

Hunting opportunities would not be outstanding in relation to the higher forested areas to the north. Horseback riding opportunities would be excellent, but on a short-term basis. The lack of water and grass would limit this activity.

This WSA is located in the central portion of the Pryor Mountain Wild Horse Range and wild horses can be observed throughout the area, especially around watering places. The presence of wild horses is one of the major reasons for the current recreational use in the area.

Supplemental Values

The designation of the Pryor Mountain Wild Horse Range, the first in the United States, is a definite supplemental value to the area. The presence of wild horse herds in association with native wildlife species enhances the wild and scenic qualities of the area.

Wind and water erosion has created an interesting drainage pattern through the center of the area. Big Coulee is the most significant canyon bisecting the central portion of the area on a north-south axis. Many colorful rock formations, ranging from grays to deep reds, are visible from the higher ridges.

Several archaeological sites have been found in the WSA. Dominant site types are lithic scatters, some of which also contain hearths, and discarded or lost stone tools.

Well-preserved vertebrate and invertebrate fossils have been found in the area. The Crooked Creek National Natural Landmark, of which 160 acres are within the WSA, is a site for vertebrate fossils.

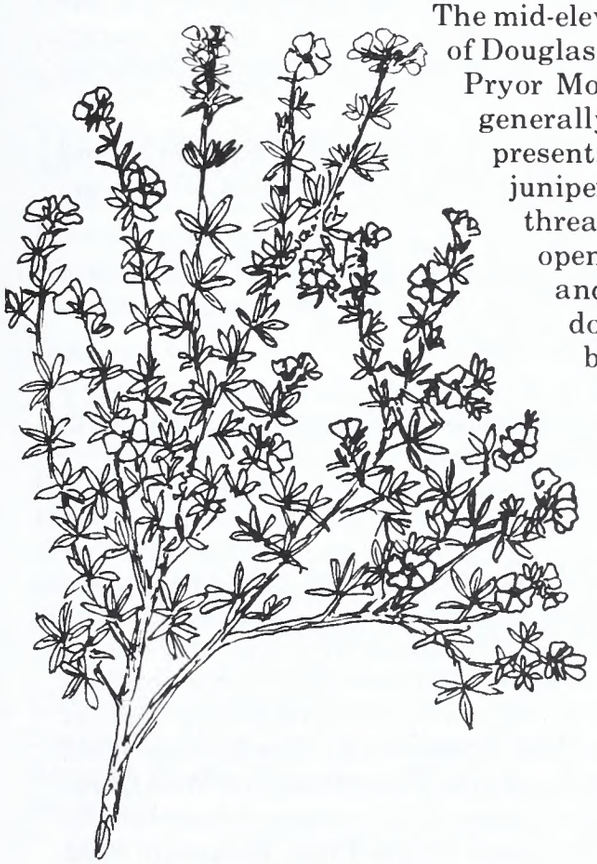
Watershed

Drainages in the Pryor Mountain WSA are ephemeral. A number of side drainages exist which experience flows from snowmelt and intense summer storms. These all flow into Big Coulee.

Soils

The soils of this area are developed from limestone, sandstone, gypsiferous siltstone and shale. Soil depths range from deep to very shallow with some bare bedrock outcrops on ridges, knolls and along slopes of high terraces and drainages. Soil textures range from very gravelly loam to sandy loam. The soils are well-drained to excessively drained with slow to rapid surface runoff. The slope of land ranges from gently rolling to steep with deeply entrenched streams and drainages.

Vegetation



The mid-elevations of the Pryor Mountains are characterized by patches of Douglas fir, particularly on the north slopes (northern portion of the Pryor Mountain WSA), with occasional open parks. Understory is generally sparse in the dense Douglas fir stands. Limber pine is also present. Shrub species include snowberry, ninebark, spirea and juniper. Major grasses are bluebunch wheat-grass, needle-and-thread grass, bluegrasses, with forbs and sedges present. In the open unforested area, vegetation is composed primarily of shrubs and grasses. Big sagebrush and shrubby cinquefoil are the dominant shrubs. Grasses include mountain brome, Kentucky bluegrass and bluebunch wheatgrass. Common forbs are balsamroot, geranium and eriogonum.

The next lower belt consists mostly of mountain shrubs. Utah juniper occupies the upper elevations, gradually blending into mountain mahogany, and eventually, big sagebrush. Black sage, rabbit brush and skunkbush sumac may also be present along with bluebunch wheatgrass, needle-and-thread grass, red threeawn and Sandberg bluegrass.

The Red desert/saltshrub occurs on the lower portions of the WSA. Vegetation is generally sparse and scattered. Saltbushes of the Atriplex genus comprise the majority of the vegetation.

Minerals

The U.S. Geological Survey Bulletin 1723 (1988) constitutes the mineral report required under the Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976). Results must be made available to the public and be submitted to the President and the Congress.

The following is excerpted from that mineral report:

> The U.S. Bureau of Mines (USBM) and the U.S. Geological Survey (USGS) assessed the identified mineral resources (known) and the mineral resource potential (undiscovered) of the Pryor Mountain (MT-067-206) Wilderness Study Area. There are no identified resources in the study area. The mineral resource potential for uranium and vanadium is high or moderate in parts of the WSA. The mineral resource potential for uranium and vanadium is low in the remainder of the study area. The southern part of the Pryor Mountain WSA has moderate mineral resource potential for bentonite. The WSA has low potential for all metals (other than uranium and vanadium), oil and gas, geothermal sources, and high-purity limestone. There is no potential for sand and gravel.
>
> All three wilderness study areas have been heavily prospected for uranium and associated vanadium. Workings on 500 claims (in 29 claim groups and 2 prospects) were examined for uranium and vanadium and other commodities, but no mineral or energy resources were identified.

Two hundred and eighty of the 315 claims staked in the Pryor Mountain WSA have been "conclusively deemed abandoned and void," because claimants did not record the claims under 43 CFR 3833.1.

The mineral report concludes that "Abundant local uranium and vanadium reserves outside the study areas, a depressed uranium market, lack of uranium milling facilities, and difficulty of prospecting for new deposits make exploration for new deposits unlikely in the near future" and goes on to state that "market conditions are not favorable for development of uranium-vanadium resources from this area for the foreseeable future."

The report also states that "the bentonitic material within the [Pryor Mountain] study area is not of commercial quality. It could, however, be mixed with nearby sources of bentonite if a specific market were created with a need for the physical properties of this blended material. At present, bentonite does not constitute an identified resource."

All or part of the 35 active lode mining claims are located in Sections 18 and 19 of T. 9 S., R. 28 E., and Sections 13 and 24 of T. 9 S., R. 27 E. They cover approximately 700 acres of the WSA. They were located prior to the passage of FLPMA.

Much of the WSA was segregated from the operation of the mining laws in 1968 and 1970. This was to be lifted, based on the record of decision for the Billings RMP/FEIS. However, this is subject to an ongoing court case. The 35 claims were located prior to these segregations.

Since 1982, leasing has been statutorily prohibited in the WSA. However, the no surface occupancy lease stipulations have discouraged and, since 1982, WSA status has precluded any actual lease activity. There are no geothermal, coal, or oil and gas leases in the WSA.

Wild Horses

The Pryor Mountain Wild Horse Range was designated September 9, 1968, by order of Secretary of the Interior, Stewart L. Udall. The horse range is located in the southeastern portion of Carbon County, Montana, and overlaps into Big Horn County, Wyoming. The Pryor Mountain WSA is located almost entirely within the Pryor Mountain Wild Horse Range. Approximately 160 acres (E½E½ Section 30 of T. 9 S., R. 28 E.) along the west boundary and 120 acres (within Sections 17 and 18 of T. 9 S., R. 28 E.) at the north end of the WSA are outside of the Pryor Mountain Wild Horse Range. The Billings Herd Management Area Plan (HMAP) for the Pryor Mountain herd divides the Pryor Mountain Wild Horse Range into herd management areas with a calculated carrying capacity assigned to each based on the 1981 Ecological Site Inventory. There are approximately 121 horses on the Pryor Mountain Wild Horse Range and lands outside of the Pryor Mountain Wild Horse Range. Updated inventory data and grazing capacity information suggests that the wild horse range (Pryor Mountain Wild Horse Range and other lands) will properly support 121 wild horses in three separate herd areas, although there is some interchange of animals between the three herd areas. It is estimated, based on carrying capacity, that the WSA supports approximately 35 horses.

Terrestrial Wildlife

The Pryor Mountain WSA offers many diverse habitat types and associated species of wildlife. The wildlife in this area are somewhat unique in that they coexist with a herd of wild and free-roaming horses.

The primary big game species found in the study area include mule deer, Rocky Mountain bighorn sheep and black bear. Mule deer are the most abundant of these species. The population is estimated at 75 head. Little information is available on actual numbers or migration patterns. However, observations indicate that there is seasonal movement from the subalpine forest and meadow zones located in the northern portions of the study area in the fall and winter months to the sagebrush, juniper and mountain mahogany zones along the southern foothills.

Rocky Mountain bighorn sheep were introduced in the Pryor Mountains in two transplant efforts conducted by the Montana Department of Fish, Wildlife and Parks. The transplanted sheep established migration patterns at the time of the plants and subsequently a majority of them migrated from the area. The herd (estimated population of 34) uses National Park lands to the east during winter months. However, an estimated 15 rams use the WSA during the spring and summer months, then migrate to the east and winter on National Park Service lands. The State of Montana Department of Fish, Wildlife, and Parks has established a population goal of 100.

The black bear population is estimated at 4. They utilize the northern portion of the Pryor Mountain WSA. This area provides the necessary hibernating, forage and cover requirements.

The only upland game birds known to occur within the units are mountain (blue) and sage grouse. Mountain grouse primarily occur in the northern, forested areas of the WSA. Sage grouse are found in the southern portions of the area where sagebrush/grassland is the dominant vegetation. Neither of these species are considered to have large populations within the WSA.

Coyotes are the most common predator in the Pryor Mountain study area, although skunk, weasel, bobcat and mountain lion are known to occur.

The only potential threatened or endangered species suspected to occur in the area is the peregrine falcon. However, surveys in 1979 and 1980 conducted by the BLM revealed no current use. A confirmed sighting was made in 1972, with two unconfirmed sightings occurring in 1975 (South 1980). Two other confirmed sightings of peregrine falcons occurred during the spring of 1984 in the general vicinity of the Pryor Mountain WSA.

Recreation

Total recreational use is 3,050 visitor days annually. Hunting is one of the major recreational uses in the area. Hunters generally drive along the boundary roads and walk into the WSA to hunt. Based on traffic counters along boundary roads, annual use is estimated at 2,500 hunter/visitor days. Other recreational activities occurring within the study area are rock hounding, caving, sightseeing and viewing the wild horses. Rock hounding use is about 500 user days, based on one year's traffic counter sample, and occurs primarily in the southern portion of the Pryor Mountain WSA. Cave use is also limited. Snowmobile use of 50 visitor days occurs two months each winter in the northern third of the WSA.

Closures for other off-road vehicles are currently in effect on BLM lands in the Pryor Mountains. The Turkey Flat Road, which is located in the southeastern portion of this WSA, was closed as a result of a decision in the Billings RMP/FEIS. This affects approximately one and three-quarters miles of roadway.

Cultural Resources

Beginning in the summer of 1968, investigators from the University of Montana conducted a five-year program of archaeological survey, testing and excavation work in the Pryor Mountains and Bighorn

Canyon National Recreation Area (BCNRA). As a result of field reconnaissance, numerous prehistoric lithic scatters, chert quarries, rock art, rockshelters, vision quests, and a ford/migration area have been recorded. Lithic scatters dominate the site types known. Due to the reconnaissance nature of the surveys conducted, it is not possible to state the percentage of the Pryor Mountain WSA surveyed to date.

A total of ten prehistoric sites were recorded within the WSA, two of which extend beyond its boundaries. One rockshelter, one vision quest site, three tipi ring sites, and four lithic scatters are represented with one site having an undetermined function. Two of the sites (the rock shelter and one of the lithic scatters) have been evaluated by the BLM as having potential eligibility. The remainder are not considered eligible. Additional cultural properties are likely to be present. None of these sites have received formal evaluation under the nomination criteria for placement on the National Register of Historic Places.

Classifications and Rights-of-Way

The Pryor Mountain WSA is included within the exterior boundaries of the Pryor Mountain Wild Horse Range which was created in 1968. The designation is compatible with wilderness management.

One area, Crooked Creek National Natural Landmark Area, was classified for retention under the Classification and Multiple Use Act of 1964. The classification further segregates these lands from appropriation under the agricultural land laws, and from operation of the general mining laws (not from mineral leasing laws). Only 160 acres of this WSA lie within this segregated area.

Two rights-of-way for powerlines of one-quarter mile and one-eighth mile are present in the Pryor Mountain WSA.

BURNT TIMBER CANYON WSA (MT-067-205)

Setting

The Burnt Timber Canyon WSA is located approximately 14 miles north of Lovell, Wyoming, along the southern slopes of the Pryor Mountain Range. These mountains are a series of northwest-southeast trending ridges with steep northeasterly-facing scarps, and gentle slopes to the southwest. Elevations range from 3,800 feet to 8,700 feet. (See Figure 3.3.)

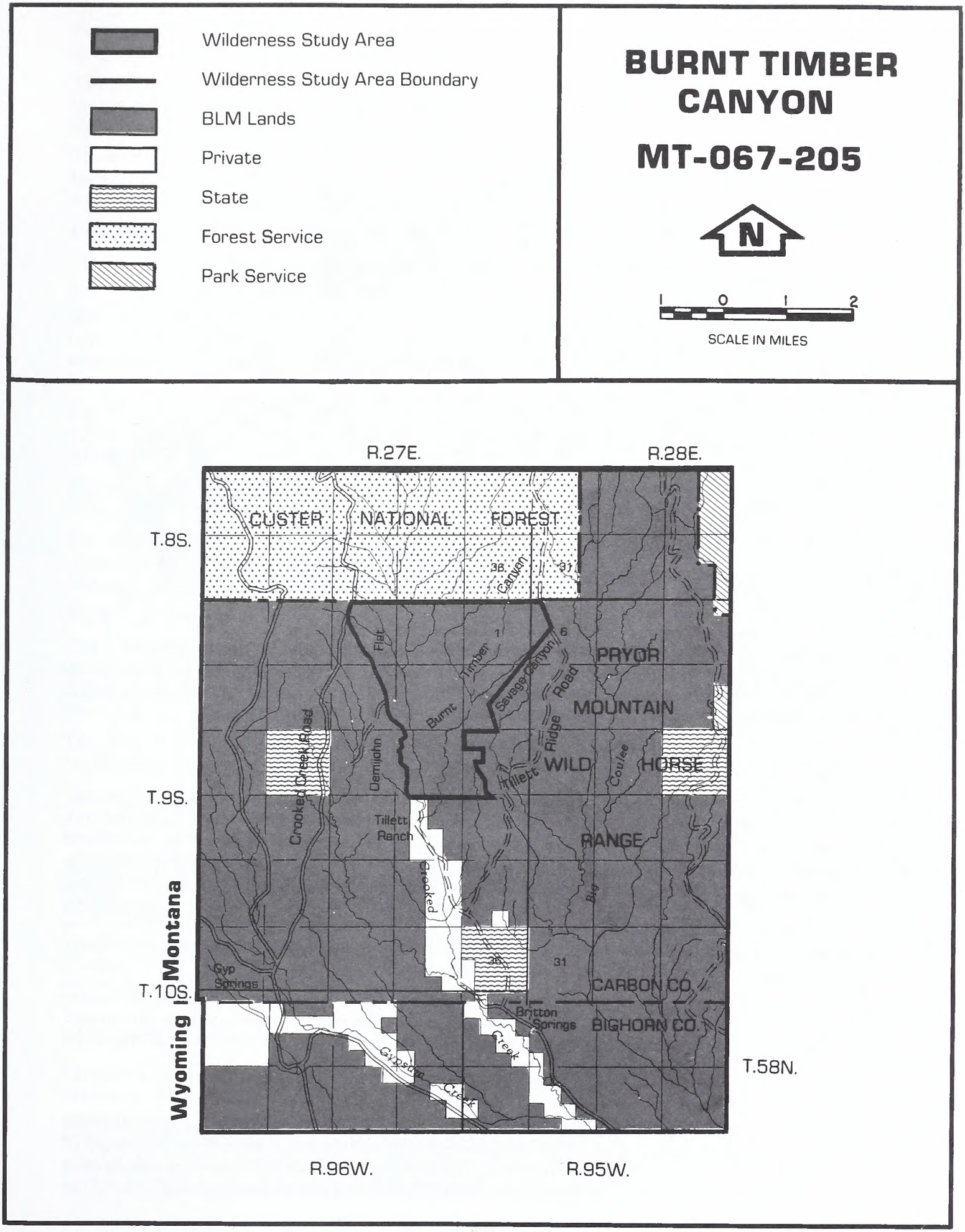
Geology/Topography

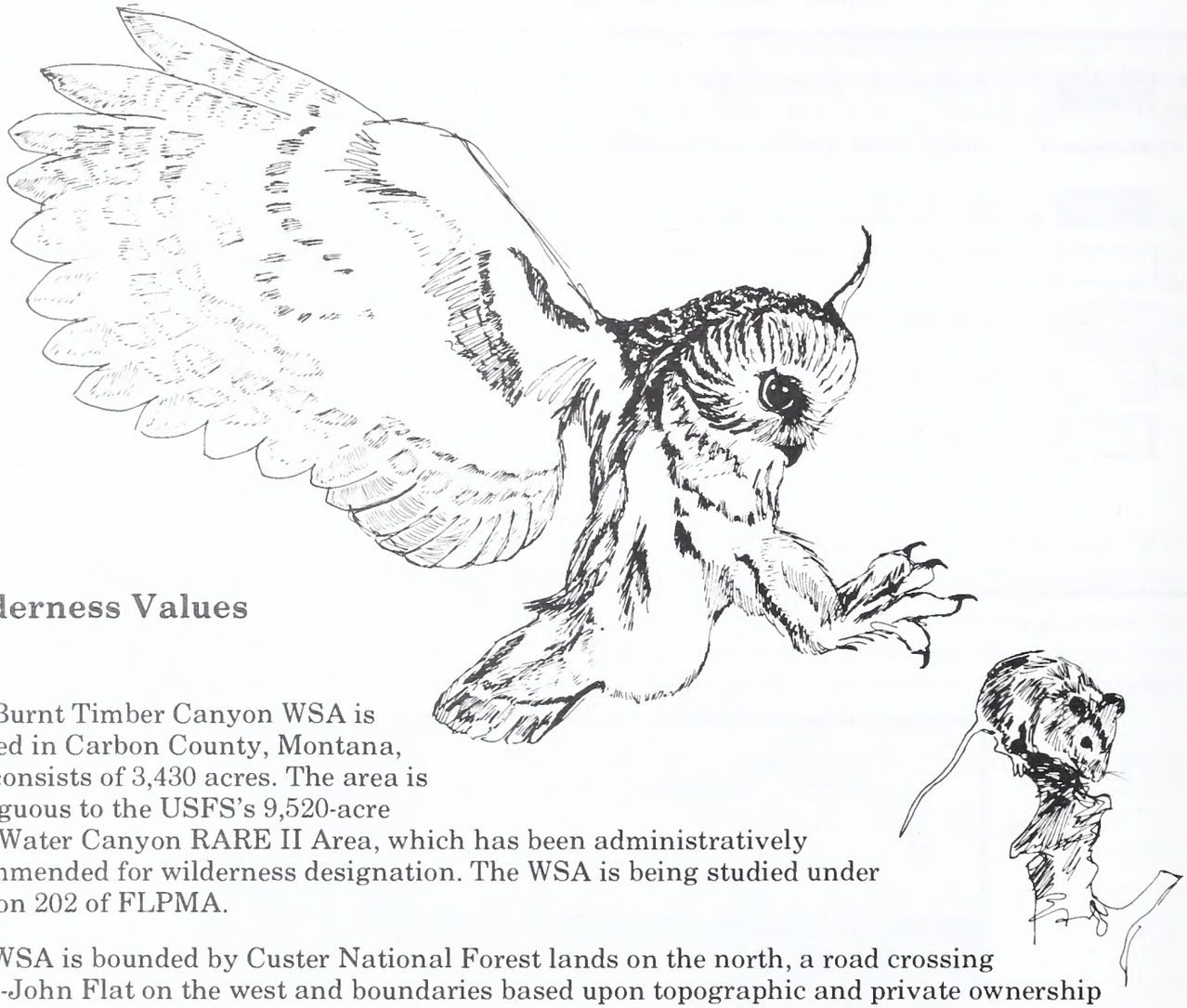
This area is located in southcentral Montana. It lies upon the East Pryor Mountain dipslope, but also includes a portion of Demi-John Flat. Crooked Creek has carved a deep canyon into the rock at the base of Demi-John Flat. Elevations within the area range from 4,500 feet in the bottom of Crooked Creek Canyon, to 6,440 feet along the eastern boundary.

Sedimentary rock exposed in the area represent a generally complete sequence of deposition, from the Middle Cambrian through Lower Cretaceous Periods (an interval of nearly 400 million years), with a total thickness of strata exceeding 4,500 feet (Blackstone 1940). Within the unit, only Upper Paleozoic and Lower Mesozoic rock outcrop, including the Madison, Amsden, Tensleep, Embar and Chugwater Formations. The strata represent a general regressive sequence, where limestones are overlain by marine sandstones, which are in turn overlain by lagoonal and beach type sediments. These strata have a nearly uniform, 10-15 degree southwesterly dip.

A portion of Demi-John Flat is within the WSA on the west boundary. Demi-John Flat is a large, slightly dissected alluvial fan which developed during the Quarternary Period. It is composed predominantly of limestones and chert cobbles, which eroded from the higher elevations in the Pryor Mountains.

FIGURE 3.3
Burnt Timber Canyon Wilderness Study Area





Wilderness Values

Size

The Burnt Timber Canyon WSA is located in Carbon County, Montana, and consists of 3,430 acres. The area is contiguous to the USFS's 9,520-acre Lost Water Canyon RARE II Area, which has been administratively recommended for wilderness designation. The WSA is being studied under Section 202 of FLPMA.

The WSA is bounded by Custer National Forest lands on the north, a road crossing Demi-John Flat on the west and boundaries based upon topographic and private ownership lines on the south and east. Approximately one-half mile of the Tillett Ridge Road serves as the boundary along the northeastern portion of the area. The area is approximately three miles in length and two miles in width.

Naturalness

This study area is in a nearly natural condition. A major portion of the WSA is comprised of the steep, rugged Crooked Creek Canyon which, because of its nearly inaccessible nature, has remained in a nearly pristine state. (See Figure 3.3.) There is a one-acre range management exclosure on Demi-John Flat in the northwest corner of the area. Approximately 2.5 miles of fences separate BLM lands from Custer National Forest lands on the north and one and three-quarter miles of fence also exist along the southern boundary. A dozer blade cut approximately 200 feet in length is visible on the eastern edge of Crooked Creek Canyon from some points along the western edge of the canyon. This cut was made during uranium prospecting activities in the 1950s. Five uranium prospecting pits exist along the boundary road on Demi-John Flat.

All these man-made features have a minute effect on the naturalness because of location. Some are located in canyons which are out of sight. These features are aged so they appear somewhat natural and they are not all concentrated in one location. Off-site intrusions are minute and any large man-made features are in the background or almost invisible from the WSA.

Solitude

The Crooked Creek and Burnt Timber Canyon drainages in the WSA offer outstanding opportunities for solitude. These drainages have cut into the limestone strata of the Pryor Mountains to a depth of several hundred feet and more. Only the canyon wall and intermittent side drainages are visible from the floor of the canyon. Ponderosa and limber pine and Douglas fir grow profusely along some of the

canyon walls and side drainages. The combination of deeply incised topography and dense vegetation would tend to isolate recreationists.

The channeling effect created by the deep canyons is lessened by both their length (approximately four miles) and the heavy vegetative screening. A number of smaller drainages which radiate from the primary drainages would disperse users.

There is very little opportunity for solitude on the more open canyon rims and adjacent ridges, because of the lack of vegetative or topographic screening. Approximately 10 percent of the area lacks outstanding opportunities for solitude.

Primitive and Unconfined Recreation

There are outstanding opportunities for hiking, backpacking, rock climbing, photography, spelunking and nature study within the Burnt Timber Canyon WSA.

The deeply incised limestone canyons contain many caves, rock overhangs and alcoves that provide opportunities for exploration. Foot travel along the canyon bottom is difficult because of the dense underbrush and steep rocky talus slopes. However, the uniqueness of the WSA offsets the difficulty of travel.

Crooked Creek, which bisects the center of the area, offers fishing for brook trout and Yellowstone cutthroat trout. The trout are small and, because of the dense brushy conditions along the banks, fishing is difficult.

Black bear and mule deer are the most common big game species in the area, but again, because of the dense undergrowth, hunting opportunities are not exceptional.

The geologic and scenic values of the canyon are the most unique characteristics of the WSA and are outstanding. All but 430 acres of this WSA are within the Pryor Mountain Wild Horse Range. There are opportunities to view and/or photograph the wild horses in the eastern portion of the WSA.

Supplemental Values

The eastern one-third of Demi-John Flat is within the wilderness study area. The Demi-John Flat Archaeological District is listed on the National Register of Historic Places (November 20, 1974). Included within the District is the Demi-John Flat site, which contains an abundance of stone rings (over 230) and rock cairn alignments. The site is significant for its large size and distinctive features.

The Yellowstone cutthroat trout in the upper portions of Crooked Creek were confirmed in 1985 by MDFWP to represent a pure strain, and as such, have a very high intrinsic value.

The rubber boa, *Charina bottae*, occurs in Crooked Creek and Burnt Timber Canyons. This snake is quite common in western Montana, but the Crooked Creek drainage is one of the most easterly extensions of its range.

Stands of mountain mahogany, *Cercocarpus ledifolius*, are common in portions of the WSA and elsewhere within the PMWHR. The Pryor Mountain Range is one of the more northerly extensions of this species range.

The scenic values of this study area are outstanding. The deeply incised canyons formed by the Crooked Creek drainage are especially picturesque. The unique geologic formations and one cave would be of interest to most recreationists.

Watershed

Crooked Creek is a perennial stream averaging 45 cubic feet per second (cfs). Water quality is excellent, although some bank deterioration occurs from wild horse trampling and grazing in the lower reaches of the channel, prior to leaving public land. Burnt Timber Canyon is an ephemeral tributary to Crooked Creek. This drainage experiences rapid flows of short duration from snowmelt and locally intense summer storms, which may cause channel scouring. The use of the channel bottom by wild horses may contribute to localized erosion problems.

Soils

The soils of this area developed from limestone, sandstone, gypsiferous siltstone and shale. Soil depths range from deep to very shallow with some bare bedrock outcrops on ridges, knolls and along slopes of high terraces and drainages. Soil textures range from very gravelly loam to sandy loam. The soils are well-drained to excessively drained with slow to rapid surface runoff. The slope of land ranges from gently rolling to steep, with deeply entrenched streams and drainages.

Vegetation

Vegetation in the Burnt Timber Canyon study area is dominated by Utah juniper and sagebrush. The understory on the thin, skeletal soils is usually low-growing species that have adapted to droughty sites. The major tree species are Douglas fir, with minor amounts of limber pine, Engelmann spruce and alpine fir. Major shrubs are Utah juniper, black sagebrush, mountain mahogany and snakeweed. Common forbs include buckwheats, phlox and prickly pear cactus. Several grass species (blue-bunch wheatgrass, needle-and-thread grass, red threeawn, Sandberg bluegrass and western wheatgrass) are present, but are generally sparse due to the low productive capabilities of the soils and low precipitation.

There is a distinct difference in vegetation along Crooked Creek due to the permanent water supply. Broadleaf shrubs dominate with an understory of sedges, forbs and grasses associated with the mesic conditions.

Minerals

The U.S. Geological Survey Bulletin 1723 (1988) constitutes the mineral report required under the Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976). Results must be made available to the public and be submitted to the President and the Congress.

The following is excerpted from that mineral report:

> The U.S. Bureau of Mines (USBM) and the U.S. Geological Survey (USGS) assessed the identified mineral resources (known) and the mineral resource potential (undiscovered) of the Burnt Timber Canyon (MT-067-205) Wilderness Study Area. There are no identified resources in the study area. The mineral resource potential for uranium and vanadium is high in part of the WSA. The mineral resource potential for uranium and vanadium is low in the remainder of the study area. The WSA has low potential for all metals (other than uranium and vanadium), oil and gas, geothermal sources, and high-purity limestone. There is no potential for sand and gravel.
>
> All three wilderness study areas have been heavily prospected for uranium and associated vanadium. Workings on 500 claims (in 29 claim groups and 2 prospects) were examined for uranium and vanadium and other commodities, but no mineral or energy resources were identified.

All of the 141 claims staked in the Burnt Timber Canyon WSA have been "conclusively deemed abandoned and void," because claimants did not record the claims under 43 CFR 3833.1.

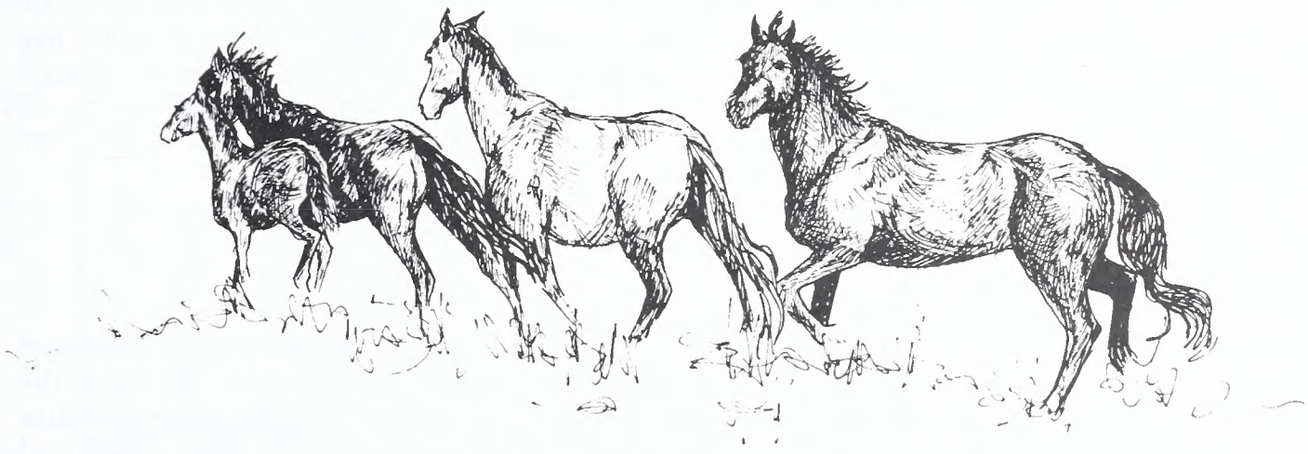
The mineral report concludes that "Abundant local uranium and vanadium reserves outside the study areas, a depressed uranium market, lack of uranium milling facilities, and difficulty of prospecting for new deposits make exploration for new deposits unlikely in the near future" and goes on to state that "market conditions are not favorable for development of uranium-vanadium resources from this area for the foreseeable future."

Much of the WSA was segregated from the operation of the mining laws in 1968 and 1970. This was to be lifted, based on the record of decision for the Billings RMP/FEIS. However, this is subject to an ongoing court case.

Since 1982, leasing has been statutorily prohibited in the WSA. However, the no surface occupancy lease stipulations have discouraged and, since 1982, WSA status has precluded any actual lease activity. There are no geothermal, coal, or oil and gas leases in the WSA.

Wild Horses

The Pryor Mountain Wild Horse Range was designated September 9, 1968, by order of Secretary of the Interior, Stewart L. Udall. The horse range is located in the southeastern portion of Carbon County, Montana, and overlaps into Big Horn County, Wyoming. The Burnt Timber Canyon WSA, with the exception of 430 acres in Sections 3 and 10 of T. 9 S., R. 27 E. on the west, is located entirely within the Pryor Mountain Wild Horse Range. The Billings Herd Management Area Plan (HMAP) for the Pryor Mountain herd divides the Pryor Mountain Wild Horse Range into herd management areas with a calculated carrying capacity assigned to each based on the 1981 Ecological Site Inventory.



There are approximately 121 horses on the Pryor Mountain Wild Horse Range and lands outside of the Pryor Mountain Wild Horse Range. Updated inventory data and grazing capacity information suggest that the wild horse range will properly support 121 wild horses in three separate herd areas, although there is some interchange of animals between the three herd areas. It is estimated, based on carrying capacity, that the WSA supports approximately 17 horses.

Aquatic Wildlife

The only fishery occurring in the WSA is in Crooked Creek. The primary species are brook trout and Yellowstone cutthroat trout. The Yellowstone cutthroat trout are isolated in the upper portions of the stream by a natural barrier and represent a pure strain. Consequently, they have a very high intrinsic value. This was confirmed by the Montana Department of Fish, Wildlife and Parks by a stream survey conducted in 1985.

Terrestrial Wildlife

The Burnt Timber Canyon WSA offers many diverse habitat types and associated species of wildlife. The wildlife in this area are somewhat unique in that they coexist with a herd of wild and free-roaming horses.

The primary big game species which may be found in the WSA include mule deer and black bear. Mule deer are the most abundant of these species. The herd, based on observations, is estimated at approximately 50 head. Additionally, observations indicate that there is seasonal movement from the subalpine forest and meadow zones located in the northern portions of the study area in the fall and winter months, to the sagebrush, juniper and mountain mahogany zones along the southern foothills.

The black bear population is estimated at three. This area provides the necessary hibernating, forage and cover requirements.

The only upland game birds which may occur in the area are mountain (blue) grouse. Grouse may be found on a few of the forested slopes within the Crooked Creek Canyon.

Coyotes are the most common predator in the area, although skunks, weasels, bobcats and mountain lions are known to occur.

The only potential threatened or endangered species suspected to occur in the Pryor Mountain area is the peregrine falcon. However, surveys in 1979 and 1980 conducted by BLM revealed no current use. A confirmed sighting was made in 1972, with two unconfirmed sightings occurring in 1975 (South 1980). Two confirmed sightings were also made during the spring of 1984 in the general vicinity of the WSA. The area is surveyed annually to document any migrating or nesting birds.

Recreation

Total recreational use in the WSA is approximately 1500 visitor days annually. Hunting is the major recreational use of the WSA. Actual number of hunting visitor days spent in the area is not known, but estimates are that use is light, approximately 1200 visitor days, because of the extremely rugged conditions which prevail. There is no snowmobile use, due to rough terrain and adverse snow conditions. The WSA is currently closed to ORV use, based on an October 4, 1979, Federal Register notice closure to protect soil, water and wild horse resources.

Cultural Resources

Portions of the Burnt Timber Canyon WSA were examined as part of the project which developed information on the Pryor Mountain WSA. The reconnaissance nature of this survey precludes the precise identification of the actual percentage of the WSA inventoried. A total of ten prehistoric sites were recorded within the area, three of which extend beyond WSA boundaries. Additional cultural properties are likely to be present. Site types represented include one rock shelter, two rock art panels, four tipi ring sites, and three lithic scatters.

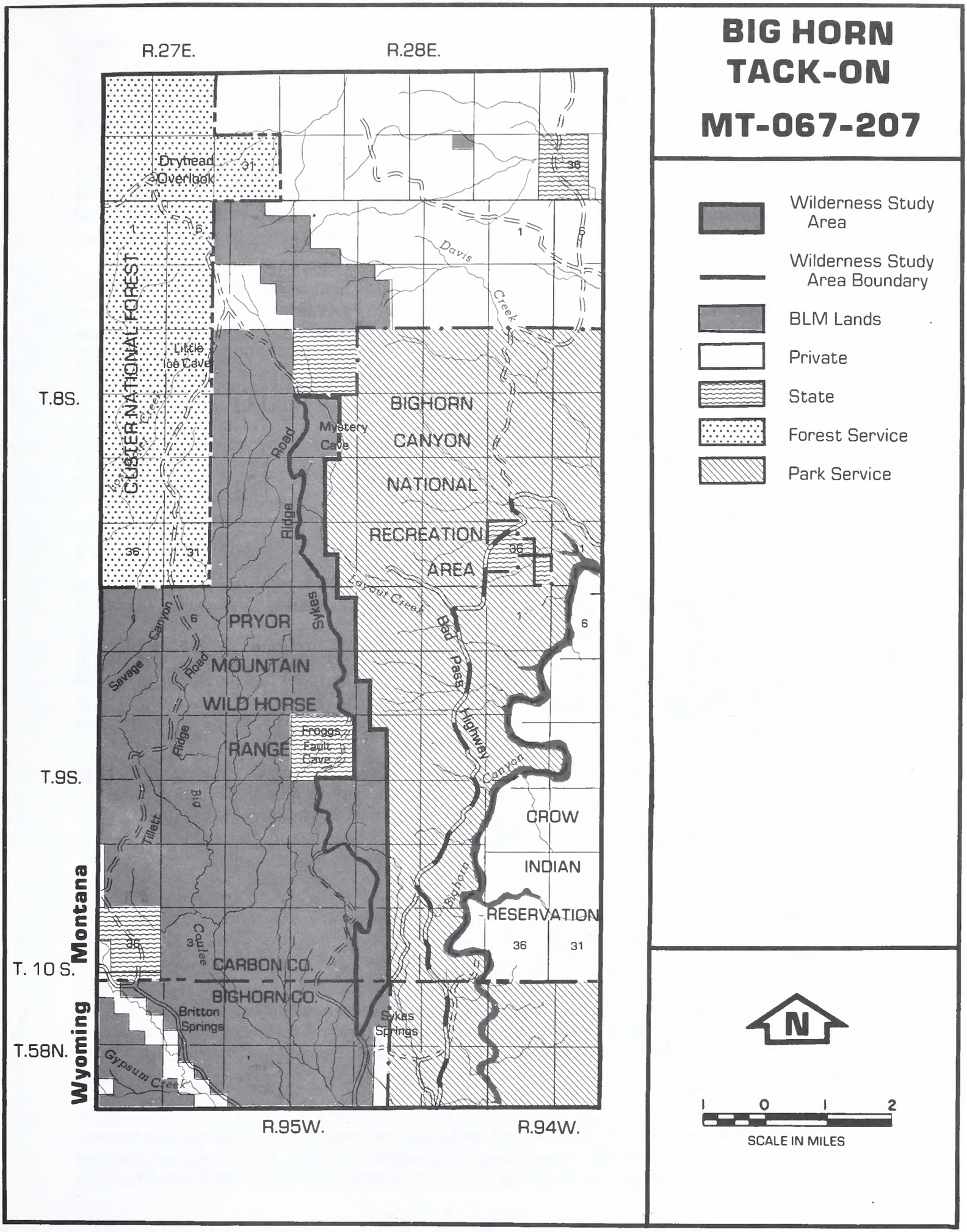
The eastern one-third of the WSA is within the boundaries of the Demi-John Flat Archaeological District, which is listed on the National Register of Historic Places. Included within the District is the Demi-John Flat site, which contains over 230 stone circles and stone alignments. This site is significant for its large size and abundance of features. The District includes the Crooked Creek Petroglyph site within the WSA, also listed on the National Register. This site is significant for its research and interpretive potential, and its currently well-preserved condition. Of the seven identified sites outside the Demi-John Flat Archaeological District, four have been evaluated by BLM as having potential eligibility. The remaining three are not considered eligible.

BIG HORN TACK-ON WSA (MT-067-205)

Setting

The Big Horn Tack-On is located approximately 15 miles north of Lovell, Wyoming, along the southern and northeastern slopes of the Pryor Mountains. These mountains are a series of northwest-southeast trending ridges with steep northeasterly-facing scarps and gentle slopes to the southwest. This study area is located in Carbon County, Montana, and Big Horn County, Wyoming. The area totals 2,550 acres, 80 acres of which are located in Wyoming. It is contiguous to 8,108 acres of National Park Service land within the Bighorn Canyon National Recreation Area, which has been recommended for wilderness designation. (See Figure 3.4.)

FIGURE 3.4
Big Horn Tack-On Wilderness Study Area



Geology/Topography

This study area is located in southcentral Montana. It extends from the foothills to the upper slopes of East Pryor Mountain. The mountain has steep north and east scarp faces, with smooth southwestern slopes, broken by moderately incised drainages. Elevations on the northeast flank of the mountain exceed 8,500 feet and decrease to 4,000 feet on the southern boundary.

Sedimentary rock layers exposed in the area represent a generally complete sequence of deposition from the Middle Cambrian through the Lower Cretaceous Periods (an interval of nearly 400 million years). The total thickness of rock exceeds 4,500 feet (Blackstone 1975). The upper slopes of East Pryor Mountain are dominated by the limestones of the Madison Formation. Younger rocks outcrop to the south and southwest.

Older rocks outcrop on its east-facing scarp (toward Dryhead Basin). The only exposure of the Precambrian (crystalline) rocks is at the base of this scarp. East Pryor Mountain is one of several of the major structural units which comprise the Pryor Range. Others include Red Pryor Mountain (Blackstone 1940). These units developed from vertical uplift with their origins deep within the earth, producing anticlines (upfoldings of the rock) which often rupture into faults on their northeast corners.

This uplift and subsequent erosion produced the landforms present today. The mountains are a series of northwest-southeast ridges with steep northeasterly-facing scarps, and gentle slopes to the southwest.

Wilderness Values

Size

The Big Horn Tack-On is composed of public land located in Carbon County, Montana, and Big Horn County, Wyoming. The area totals 2,550 acres, 80 acres of which are located in Wyoming.

The WSA lies between the Sykes Ridge Road on the west and the Bighorn Canyon National Recreation Area, administered by the National Park Service, on the east. The Sykes Ridge Road is a BLM access road through the Pryor Mountain Wild Horse Range. This segment is a narrow strip of land averaging nine miles in length and less than one-half mile in width. The area consists primarily of steep slopes rising up to a narrow ridgetop. Near the ridge crest is the Sykes Ridge Road, which runs the entire nine-mile length and forms the western boundary of this part of the Big Horn Tack-On.

The WSA is contiguous to a portion of the Bighorn Canyon National Recreation Area, a Park Service wilderness study area consisting of 8,108 acres. The area appears to be a logical physiographic extension of the Park Service unit, sharing nine miles of common boundary. (See Figure 3.4.) It is being studied under the provision of Section 202 of FLPMA.

Naturalness

This area appears to be primarily natural. However, there are some signs of man's presence. The WSA contains a BLM horse trap used for capturing excess wild horses. It is constructed of locally obtained native materials and is well screened by pine trees and topographic features. There is also approximately 1.5 miles of low quality two-track vehicle-ways and several uranium prospect pits.

All these man-made features have a minute effect on the naturalness because of location. Some are located in canyons which are out of sight. These features are aged so they appear somewhat natural and they are not all concentrated in one location. Also, being that adjacent lands are of a natural appearance, off-site intrusions are minute and any large man-made features are in the background or almost invisible from the WSA.

Solitude

The WSA is approximately nine miles in length and less than one-half mile wide in most areas. Toward the southern end, it becomes approximately one mile in width. This portion of the area consists of the crest of Sykes Ridge and the westerly trending slopes just below Sykes Ridge. This high

limestone ridge rises in elevation from approximately 4,000 feet in the extreme southern portion to 8,000 feet in the northern part. The crest of the ridge is comprised of steep, rocky outcroppings.

Wilderness users would be able to detect automobile traffic on the Bad Pass Highway within the Bighorn Canyon National Recreation Area. At most points, this highway is approximately 1.5 miles to the east.

Outstanding opportunities for solitude exist in the area because of the vegetative and topographic screening. Small, heavily timbered areas in the northern segment of the area provide pockets with outstanding opportunities for solitude.

Primitive and Unconfined Recreation

There are two caves in this WSA which provide spelunking opportunities. However, these opportunities could not be considered outstanding because of limited access, and in one situation, a dangerous point of entry. The possibility of rock climbing exists on some of the sheer limestone cliffs and pinnacles for experienced climbers.

Hiking and associated photography and sightseeing activities are outstanding. The topographic relief, unique geologic formations and the wide expanse of rugged country within view from the ridge tops presents a challenge to potential users.

Hunting could not be considered outstanding in relation to opportunities in adjacent areas. Big game, primarily mule deer, are more frequently found on the National Forest lands to the west. There is also some black bear hunting in the Pryor Mountains, but this too most commonly occurs on National Forest lands. Some hunting would occur within the area in association with the more concentrated activity on adjacent lands.

Supplemental Values

The scenic quality of the surrounding area is the most notable supplemental value. The deeply incised Bighorn Canyon and adjacent Dryhead Basin are clearly visible to the east and northeast from Sykes Ridge. To the south and southwest the hillsides and steeply incised canyons within the Pryor Mountain Wild Horse Range are within view. There are colorful marine rock formations exposed within the Bighorn Canyon and the Pryor Mountain Wild Horse Range. Their colors range from blues, greens and grays to the reds of the Chugwater Formation. Conifers in the higher elevation National Forest lands to the west and northwest lend a predominately deep green contrast to the more arid lowlands within the horse range.

Watershed

Drainages in this area are the upper ends of small ephemeral channels that are tributaries to the Big Horn River. Flows result from snowmelt and storm events and may be classified as having a high erosion potential due to the steep topography and shallow soils.

Soils

The soils of this area are developed from limestone, sandstone, gypsiferous siltstone and shale. Soil depths range from deep to very shallow with some bare bedrock outcrops on ridges, knolls and along slopes of high terraces and drainages. Soil textures range from very gravelly loam to sandy loam. The soils are well-drained to excessively drained with slow to rapid surface runoff. The slope of land ranges from gently rolling to steep, with deeply entrenched streams and drainages.

Vegetation

Vegetation is very diverse in both density and composition in the Big Horn Tack-On. The difference in elevation from the top of the Pryor Mountains to the Wyoming border is more than 4,000 feet. This results in a variety of physical, environmental and climatic conditions.

Vegetation occurs in belts as a result of the elevation changes. Beginning with the highest elevations and working down, the vegetative belts include subalpine meadows, conifer-grassland/shrub, mountain shrub and red desert/saltbrush.

The upper elevations support a wide variety of plant species, mostly due to the increased precipitation. Characteristic vegetation includes scattered areas of alpine fir, Douglas fir, limber pine and Engelmann spruce interspersed with subalpine meadows and plateaus. Much of the understory consists of small perennial forbs and sedges that have adapted to the moist, cool sites and shallow soils. Common grasses include sheep fescue, alpine timothy and alpine bluegrass. The middle elevations consist of steep timbered slopes with Douglas fir. The terraces support a variety of sedges, grasses and forbs.

The lower elevations consist of steep, easterly-facing slopes that are sparsely vegetated by juniper, mountain mahogany, bluebunch wheatgrass and needle-and-thread grass.

Minerals

The U.S. Geological Survey Bulletin 1723 (1988) constitutes the mineral report required under the Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976). Results must be made available to the public and be submitted to the President and the Congress.

The following is excerpted from that mineral report:

> The U.S. Bureau of Mines (USBM) and the U.S. Geological Survey (USGS) assessed the identified mineral resources (known) and the mineral resource potential (undiscovered) of the Big Horn Tack-On (MT-067-207) Wilderness Study Area. There are no identified resources in the study area. The mineral resource potential for uranium and vanadium is moderate in the entire WSA. The WSA has low potential for all metals (other than uranium and vanadium), oil and gas, geothermal sources, and high-purity limestone. There is no potential for sand and gravel.
>
> All three wilderness study areas have been heavily prospected for uranium and associated vanadium. Workings on 500 claims (in 29 claim groups and 2 prospects) were examined for uranium and vanadium and other commodities, but no mineral or energy resources were identified.

All of the 44 claims staked in the Big Horn Tack-On WSA have been "conclusively deemed abandoned and void," because claimants did not record the claims under 43 CFR 3833.1.

The mineral report concludes that "Abundant local uranium and vanadium reserves outside the study areas, a depressed uranium market, lack of uranium milling facilities, and difficulty of prospecting for new deposits make exploration for new deposits unlikely in the near future" and goes on to state that "market conditions are not favorable for development of uranium-vanadium resources from this area for the foreseeable future."

Much of the WSA was segregated from the operation of the mining laws in 1968 and 1970. This was to be lifted, based on the record of decision for the Billings RMP/FEIS. However, this is subject to an ongoing court case.

Since 1982, leasing has been statutorily prohibited in the WSA. However, the no surface occupancy lease stipulations have discouraged and, since 1982, WSA status has precluded any actual lease activity. There are no geothermal, coal, or oil and gas leases in the WSA.

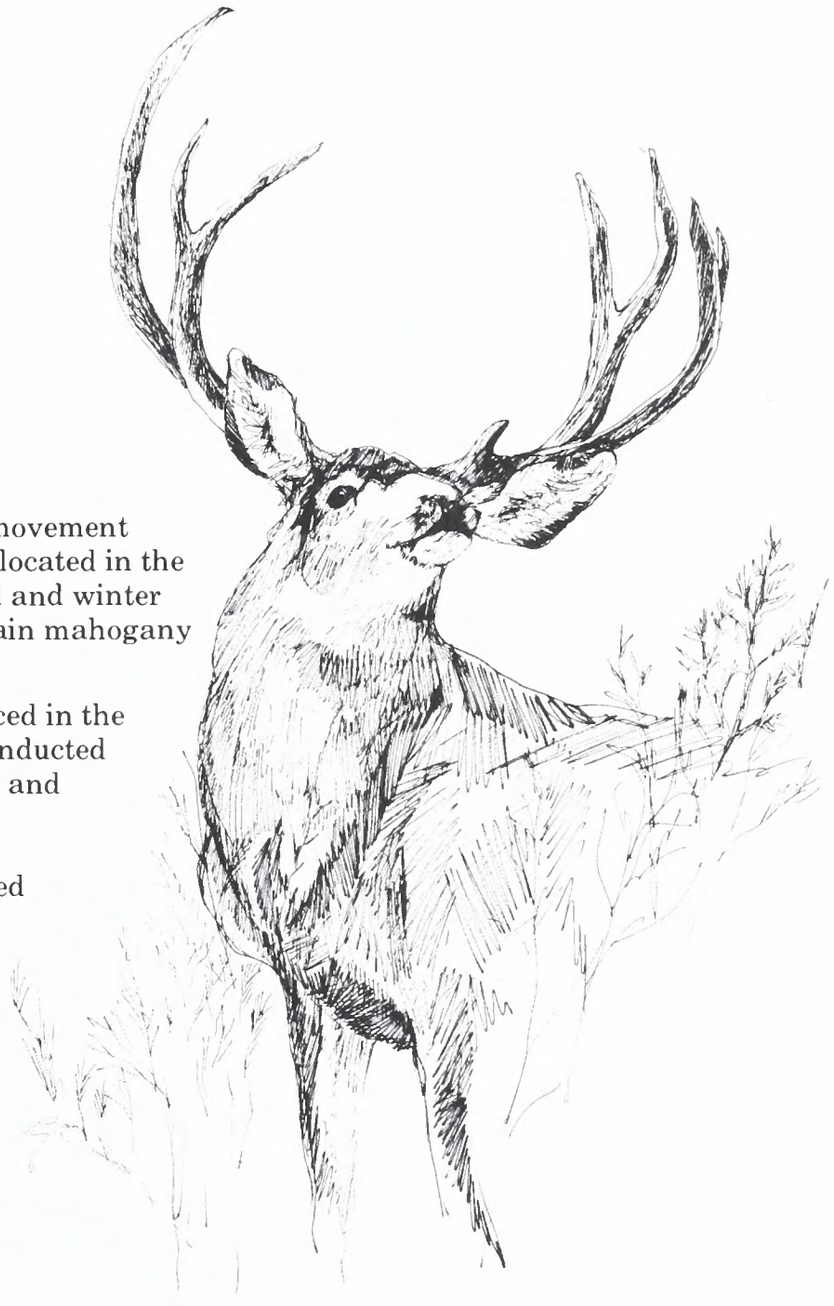
Wild Horses

The Pryor Mountain Wild Horse Range was designated September 9, 1968, by order of Secretary of the Interior, Stewart L. Udall. The horse range is located in the southeastern portion of Carbon County, Montana, and overlaps into Big Horn County, Wyoming. The Big Horn Tack-On WSA is located entirely within the Pryor Mountain Wild Horse Range. The Billings Herd Management Area Plan

(HMAP) for the Pryor Mountain herd divides the Pryor Mountain Wild Horse Range into herd management areas with a calculated carrying capacity assigned to each based on the 1981 Ecological Site Inventory. There are approximately 121 horses within and outside the Pryor Mountain Wild Horse Range. Updated inventory data and grazing capacity information indicates that the wild horse range will properly support 121 horses in three separate herd areas, although there is some interchange of animals between the three herd areas. It is estimated, based on carrying capacity, that the WSA supports approximately one horse.

Terrestrial Wildlife

The Big Horn Tack-On offers many diverse habitat types and associated species of wildlife. The wildlife in this area are somewhat unique in that they coexist with a herd of wild and free-roaming horses.



The primary big game species found in the study area include mule deer, Rocky Mountain bighorn sheep and black bear. A herd of approximately 50 mule deer reside within the WSA. Little information is available on migration patterns. However, observations indicate that there is seasonal movement from the subalpine forest and meadow zones located in the northern portions of the study area in the fall and winter months to the sagebrush, juniper and mountain mahogany zones along the southern foothills.

Rocky Mountain bighorn sheep were introduced in the Pryor Mountains in two transplant efforts conducted by the Montana Department of Fish, Wildlife and Parks. The transplanted sheep established migration patterns at the time of the plants and subsequently, a majority of them migrated from the area. The herd, estimated at 34 head, used National Park lands to the east during winter months. Fifteen rams reside in the Pryor Mountains WSA during the spring and summer months and then migrate east through the Big Horn Tack-On WSA and winter on National Park Service lands. In the spring they migrate, through the Big Horn Tack-On WSA, west to the Pryor Mountain WSA. As such, the WSA contains a crucial portion of the annual migration route used by the bighorn sheep.

Black bear, estimated at two, reside in the northern portion of the area.

The only upland game birds known to exist within the area are mountain (blue) grouse. These birds are confined to the heavily wooded sections in the northern portion of the study area.

Coyotes are the most common predator in the study area, although skunks, weasels, bobcat and mountain lion are known to occur.

The only potential threatened or endangered species suspected to occur in the WSA is the peregrine falcon. However, surveys in 1979 and 1980 conducted by the BLM revealed no current use. A confirmed sighting was made in 1972, with two unconfirmed sightings occurring in 1975 (South 1980). Two confirmed sightings were made during the spring of 1984 in the general vicinity of the WSA. The

area continues to be surveyed annually in cooperation with the National Park Service to document any migrating or nesting birds.

Recreation

Approximately 850 visitor days of recreation use, all nonmotorized occur in the WSA. Hunting is one of the major recreational uses in the area. Actual number of hunter days spent in the study area is not known, but estimates are that use is about 500 user days annually. There is no snowmobile use, due to rough terrain. The WSA is currently closed to other ORV use to protect soil, water and wild horse resources.

Other recreational activities occurring within the study area are rock hounding, exploring caves, sightseeing and viewing the wild horses. Rock hounding use is about 300 user days annually and occurs primarily in the southern portion of the study area. Cave use is estimated at 50 user days annually.

Cultural Resources

This area was also examined during the University of Montana project but was first inventoried in part by the River Basin survey prior to the construction of Yellowtail Reservoir. One prehistoric site of indeterminate function was identified during the earlier archeological survey, which may be within WSA boundaries. The reconnaissance strategies performed during both inventories precludes an assessment of the percentages of the area intensively examined and additional cultural properties are certain to be present. This cultural property has never been relocated; thus, no evaluation has been performed.

ENVIRONMENTAL CONSEQUENCES

This chapter evaluates the environmental impacts of the issue actions presented in Chapter 2 under both the No Wilderness and Wilderness alternatives. The impacts are analyzed under each alternative by WSA with the proposed action presented first.

TWIN COULEE WSA (MT-067-212)

No Wilderness Alternative (Proposed Action)

Impacts on Wilderness Values: Under the proposed action, the WSA will be managed mainly for timber resources and mineral resources. Timber harvesting and other multiple use activities will be permitted. Under this scenario, almost all wilderness values would be irreversibly lost, primarily through timber harvesting on 4,612 acres. Those values are size, naturalness, solitude, primitive and unconfined recreation and the supplemental values of limestone outcrops, well-defined drainages and scenic vistas of the adjacent prairie lands.

The development of permanent and well maintained roads, in association with timber harvesting operations, would reduce the size of the roadless area from 6,870 acres to 2,258 acres.

Road construction, motorized vehicle use, timber harvesting and possibly some mineral assessment work occurring throughout the 4,612 acre area, would increase the evidence of man's presence and change the natural background. This would significantly degrade the natural values of the area.

The increase in sights and sounds caused by activities associated with timber harvesting and other activities, such as vehicle movement, cutting trees, etc., would reduce the opportunities for solitude. Also, heavy dense timber stands would be thinned out on 4,612 acres, thus increasing the opportunities for visitors to see other activities.

Opportunities for hunting, hiking, camping, rock climbing and nature studying in a primitive setting would be irreversibly degraded on 4,612 acres. Logging, skid trails, and other timber-related actions would completely change the primitive background.

Limestone outcroppings and the scenic vistas of the prairie lands would not be affected directly by timber harvesting or mineral assessment work.

In conclusion, all wilderness values within the harvested area, 4,612 acres, would be irreversibly lost and those on the adjacent 2,258 acres would be somewhat degraded.

Impacts on Timber Production Levels and Economics: Timber production and harvesting would be allowed on forested land in the current allowable harvest base. Approximately 4,612 acres of productive forest land would be managed and a total of 12.3 million board feet (MMBF) of timber would be available for commercial harvesting over a 100 year period. This acreage represents five percent of the productive forested land in the Snowy Mountain Region. On a sustained yield basis, an average of 50 acres with a volume of .12 MMBF would be harvested. This harvest level would represent the *only* annual allowable harvest level for productive forested land on BLM administered land in the Billings Resource Area. This annual harvest level of 0.12 MMBF represent five percent of the allowable public and private timber harvest levels. However, this area has little snow accumulation during the winter and would allow winter harvest. As such, it represents 16 percent of all commercial timber land available for winter harvest.

In the long term, the timber in the WSA would be brought into a more productive, regulated condition through the application of timber harvests, thinnings and other intensive forest management prac-

tices. Harvesting of dead, diseased, and overage trees would improve the health and vigor of the forest and reduces its susceptibility to insects and disease. Harvesting timber would also benefit other resources such as wildlife and recreational access.

The projected timber harvest of .12 MMBF annually would generate revenue to the federal government's general fund of approximately $367,000 ($3,670 per annum), and to the local economy of approximately $1,500,000 over the 100-year cutting cycle, ($15,000 per annum).

Mineral activity would have minimal impact on timber resources. It is estimated that 12 acres would be lost from the timber base.

In conclusion, the annual sustained yield would be .12 MMBF associated with harvest on 250 acres every 5 years. These forested lands are available for winter logging. This would result in annual revenues to the federal government general fund of $3,670 (total of $367,000), and $15,000 (total of $1,500,000) annually to the local economy.

Impacts on the Watershed Resource: (Watershed is being discussed as a composite of the soil and vegetative resources.) As a result of the projected timber harvest under the proposed action, 4,612 acres of dense standing timber (68 percent of the WSA) would be altered through overstory removal, small thinnings or clearcuts, and associated disturbance such as road construction. The proposal would take 100 years to complete.

The overstory removal, thinning cuts, and clearcuts will expose the disturbed ground cover and soils in harvested areas to higher levels of direct precipitation at greater intensities, generating increased volumes of runoff. This would increase erosion and degrade the watershed since understory vegetation, currently very sparse, would not act as a sufficient buffer for high intensity storms in the short term. However, the understory vegetation should increase significantly during the first growing season after exposure, and would mitigate the situation naturally. Given that the average annual precipitation level is 15-20 inches, stabilizing is projected to occur within a two- to three-year period after each cutting.

The construction of 15 miles of mainline roads, 20 miles of spur roads and 20 miles of skid trails in support of the timber harvest operation (approximately 165 acres or 55 miles total over 100 years) would totally remove the ground cover. Erosion potential on the disturbed areas would be extremely high,and the watershed condition would be degraded. However, with the exception of the 15 miles of mainline roads and 2 miles of spur roads comprising 51 acres which will remain open, all other disturbed areas would be allowed to revegetate naturally. Therefore, the degraded sites with high erosion potential would start to restabilize within an estimated period of two to three years after disturbance, reversing the watershed condition on them from poor to good. Erosion would continue on the 51 acres associated within the 17 miles of mainline and spur roads. Most vehicle use would be on the roads; thus, no additional erosion would occur. Due to the small acreage involved (less than one percent of the WSA), this is considered a minute impact on the total watershed resources.

It is projected that 166 existing lode mining claims would be maintained annually. Disturbance (generally on sites previously disturbed) would be in the form of digging or some other minor assessment work. The total area affected is estimated at 12 acres (approximately 0.2 percent of the WSA). However, no additional development is projected, based on the historical interest within the area and the low economic feasibility, thus no additional impacts on watershed are projected.

In conclusion, the projected timber harvest program will cause an increase in direct run-off and erosion on 114 acres in the short term (two to three years) and 51 acres in the long term. Claim maintenance on 10 to 12 acres will have no net impacts on the watershed resource.

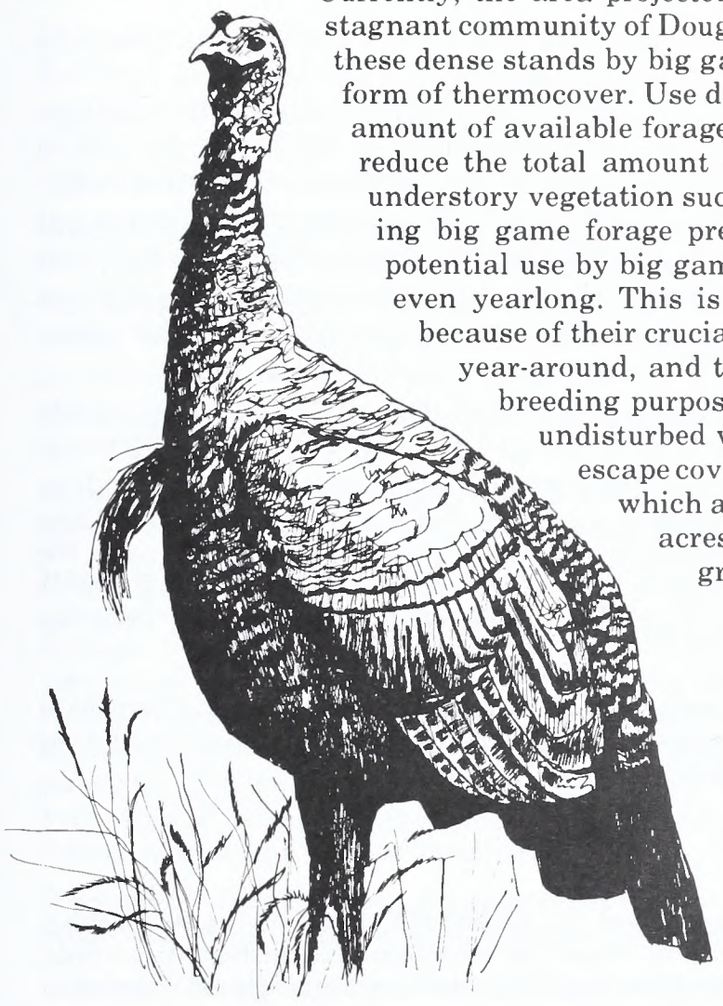
Impacts on Mineral Exploration and Production: Under the proposed action, exploration and development of mineral resources will be permitted on the entire 6,870 acres within the WSA, subject to surface management regulations. No special consideration would be given to protect wilderness values other than incidental benefits from prevention of unnecessary and undue degradation of the environment. Based on the mineral scenario projections, the area would continue to experience annual claim assessment work on the 166 lode mining claims involving an estimate of only 10 to 12 acres.

Since the potential for discovery in economical qualities is low for all minerals, it is projected that no new exploration or development would occur, nor is it projected that any public land would be patented and transferred into private ownership.

There would be some improvement in physical access to claims located near timber sale roads. Timber activities could result in some loss of claim markers, and increased human activity in the area could result in some vandalism.

In conclusion, there will be no effect on mineral exploration or development on 6,870 acres. No exploration or production is anticipated due to low development potential.

Impacts on Elk, Mule Deer, Bear and Turkey Habitats and Populations: As a result of the projected timber harvest program under the proposed action, 4,612 acres of timbered wildlife habitat will be altered by overstory removal, small thinnings or clearcuts and their associated road systems. The total harvest is being evaluated on a 100-year rotation cycle. The most measurable impacts of such a proposal would be realized by big game species such as elk, mule deer, bear and turkey.



Currently, the area projected for harvest consists of a very dense, virtually stagnant community of Douglas fir, ponderosa pine and lodgepole pine. Use of these dense stands by big game primarily occurs in the winter months in the form of thermocover. Use during other seasons is very low due to the limited amount of available forage and water. The timber overstory removal would reduce the total amount of thermocover available, but also would allow understory vegetation such as grass, forbs and shrubs to establish, producing big game forage previously nonexistent. This would encourage the potential use by big game for much greater periods of time, and possibly even yearlong. This is particularly important to elk, deer and turkey because of their crucial need for grass, forbs and shrubs for subsistence year-around, and turkeys' preference for open stands of timber for breeding purposes. Areas of dense standing timber would be left undisturbed within or adjacent to the harvest sites to provide escape cover, roosting sites and thermocover. The major cuts, which are projected to occur every five years on 100 to 150 acres, would create numerous seral stages of vegetative growth of varied plant composition and structure. This diversity and edge effect (approximately an additional 2.5 miles every five years) further expands the amount of forage seasonally available. The 5 to 10 acre clearcuts within the overstory removal areas and 10 to 20 acre thinning cuts associated with the larger harvest areas would further increase the diversity and extent of edges available to all wildlife species. Selected accumulations of slash would be left for turkey escape cover and nesting purposes in an effort to promote year-around use.

Currently, it is estimated that 150 mule deer, 35 elk and 21 bear seasonally use the study area. The additional forage would not cause big game populations to increase, because of the lack of available water. However, their seasonal use would increase from three months to six months. Due the increased forage and breeding opportunities for turkeys, their population would increase from 100 to 125. There would be no impacts on the population levels of grouse (75) or antelope (50).

An estimated 51 acres of habitat would be eliminated over the entire 100-year cycle as a result of the projected construction and maintenance of approximately 17 miles of maintained mainline and spur roads to facilitate the timber harvesting. This only represents one percent of the timbered habitat type. Peak levels of human activity in localized areas would occur during road construction and

harvesting operation for limited periods of time. (This is estimated to total approximately six months over every five-year period.) This would cause the avoidance of these areas by big game and other wildlife during these periods.

It is also anticipated that increased motorized and nonmotorized recreation use would occur which would cause avoidance of these areas indefinitely. An increase in motorized vehicle use from 20 visitor days to 170 visitor days annually is expected. Due to severe terrain, most of this will occur on the roads, thus having a minimal impact on wildlife.

The 166 existing mineral claims would be maintained (assessment work done) on an annual basis. This is estimated to have an effect on an estimated 10 to 12 acres within the WSA in the form of digging or some other minor assessment work. Avoidance of these localized sites by wildlife, particularly big game species, will occur while maintenance is being done. Maintenance work would most likely consist of digging small excavation pits or surface scraping which would temporarily destroy perennial wildlife forage or habitat.

Overall, these activities are determined insignificant since they only alter or disturb approximately 0.2 percent of the available habitat within the WSA.

Bears are on the move the majority of the time when in the WSA. There would be no obstruction of the movement of bears within the WSA except when the timber is actively being harvested. Denning within the WSA is suspected, but no denning sites have been verified. Denning normally occurs on steep canyon side slopes during winter months. Slope restrictions on timber harvesting, as well as severe winter weather, prohibit disturbance of these zones resulting in no impact to denning bears.

In conclusion, projected timber harvest would reduce thermal cover, increase forage, create 50 miles of vegetative edge, and provide a more diverse vegetative community for mule deer, elk, black bear and turkey. Projected minerals actions would have a minimal effect on all species. However, populations of 150 for mule deer, 35 for elk, and 21 for black bear would not increase due to lack of available water. The turkey population would increase from 100 to 125.

Impacts on Recreation Use: This WSA is used mainly for big game hunting. Under the proposed action, physical access will be provided by construction of logging roads. Motorized vehicle use currently 20 visitor days annually associated with hunting, is projected to increase to 170 visitor days annually. However, due to low game populations, steep topography, and dense vegetation cover, the increase in hunting use and associated motorized vehicle use will occur mainly on the new roads. No other recreational opportunity changes are projected. Therefore, nonmotorized hunting use is expected to remain at 980 visitor days annually and other nonmotorized recreational uses are expected to remain at 500 visitor days annually.

In conclusion, hunting use, associated with motorized vehicle use, is expected to increase from 20 to 170 visitor days annually. Nonmotorized hunting use will remain at 980 visitor days annually. Other motorized use will remain at 500 visitor days annually.

Wilderness Alternative

Impacts on Wilderness Values: Under this alternative, all wilderness values on the entire WSA (6,870 acres) will be preserved and protected by statute over the long-term. No surface disturbing activities would be allowed. These values are size, naturalness, primitive and unconfined recreation and the supplemental values of limestone outcrops, well-defined drainages and scenic vistas of the adjacent prairie lands.

In conclusion, the pristine naturalness, the outstanding opportunities for solitude provided by densely timbered rough terrain, and the scenic limestone outcrops and panoramic views would be protected and preserved on 6,870 acres.

Impacts on Timber Production Levels and Economics: Wilderness designation would preclude management and sustained yield harvesting from a total of 4,612 acres of productive forest lands with a total volume of 12.3 MMBF. The acreage not harvested represents five percent of the productive forest land within the Snowy Mountain Region. This would remove the only annual

harvest area on BLM administered land within the resource area and 16 percent of public and private land available for winter logging.

In conclusion, wilderness designation would remove 4,612 acres of productive forested land from the allowable harvest base. A volume of 12.3 MMBF, with an annual sustained yield of 0.12 MMBF, would be foregone. The significant value of this volume would be its role in the availability of the winter logging volume of 16 percent within the region. Also, $367,000 revenue to the federal government general fund ($3,670 annually) and $1,500,000 revenue to the local economy ($15,000 annually) will be foregone.

Impacts on the Watershed Resource: (Watershed is discussed as a composite of the soil and vegetative resources.) Under this alternative, there are no projected activities which would disturb the existing watershed resource. Additionally, it is projected that none of the existing 166 lode mining claims within the WSA would prove to be valid through discovery. Therefore, annual claim maintenance (assessment work) is projected to cease. This would allow the estimated 10 to 12 acres (approximately 0.2 percent of the WSA) currently disturbed to rehabilitate naturally, stabilizing and enhancing the sites, causing a slight improvement in the overall watershed condition.

In conclusion, elimination of any ground disturbing activities would protect watershed values on the WSA.

Impacts on Mineral Exploration and Production: Under this alternative, 6,870 acres will be withdrawn from appropriation and leasing under the mining and mineral leasing laws, subject to valid existing rights as of the date of designation. Unless valid rights are established by discovery for the mining claims prior to the date of designation, exploration and development of the mineral resources would be foregone within the entire WSA.

Due to the low potential for discovery, it is not expected that any of the existing or potential new claims would go to patent nor would valid rights be established. Maintenance of the existing, grandfathered, 166 lode mining claims under wilderness regulations will be discontinued and the claims would be abandoned. The adverse impact would be minimal, since the potential for all minerals is considered low.

In conclusion, wilderness designation would preclude further exploration but would not significantly affect mineral production due to the low probability for discovery.

Impacts on Elk, Mule Deer, Bear and Turkey Habitats and Populations: Under this alternative, there would be no altering of the existing elk, mule deer, bear or turkey habitat within the WSA through timber harvest or any other projected activities. Essentially, the habitat would remain unchanged for the duration of the designation with the exception of the 166 existing lode mining claims. On these, annual claim maintenance (assessment work) is expected to cease. This would allow the estimated 10 to 12 acres (approximately 0.2 percent of the WSA) currently disturbed to rehabilitate naturally. This would cause a slight increase in forage to be produced, and there would be no further avoidance of these sites for short periods annually by these species due to man's physical presence during assessment work on the claims.

Since the habitat would remain essentially unchanged, the population levels and season of use of 150 mule deer, 35 elk, 21 black bear, and 100 turkey would be protected.

In conclusion, elk, mule deer, bear and turkey habitat, population levels and season of use of 150 mule deer, 35 elk, 21 black bear and 100 turkey would be protected. The opportunity to increase turkey populations by 25 would be foregone.

Impacts on Recreation Use: This area is presently being used for dispersed primitive recreation (1500 user days) including a small amount of motorized use associated with hunting (20 user days). Under this alternative, 20 motorized user days will be eliminated. However, a projected increase in nonmotorized use would result from those visitors who would visit the area just because it has been designated wilderness. Typically, this increase has varied between one and two percent annually for the decade after designation.

In conclusion, motorized recreation use will be decreased from 20 visitor days to none. Nonmotorized use of 1480 visitor days annually will increase at 1 to 2 percent annually for a decade.

PRYOR MOUNTAIN WSA (MT-067-206)

Wilderness Alternative (Proposed Action)

Impacts on Wilderness Values: Under the proposed action for the entire WSA (16,927 acres) including its highly natural desert type and subalpine type environment, deep canyons, rolling hills and open meadows, there would be short-term and long-term benefits to all wilderness values by providing statutory protection. Preservation of the natural character, outstanding opportunities for solitude, isolation, size, primitive and unconfined recreational opportunities, and the supplement values would be assured throughout the WSA. The proposed action would preserve the wilderness values including the deep cut Big Coulee canyon located in the middle of the WSA and a portion (160 acres) of the Crooked Creek National Natural Landmark.

Through the elimination of mineral activity and the regulation of wild horse numbers and use, a gradual increase of native vegetation would occur ultimately resulting in an improvement of the WSA's naturalness. When abandoned, the 35 lode mining claims would be allowed to rehabilitate to a native state. There would be no further mineral exploration or development allowed which further protects the naturalness of the WSA. The regulation of wild horse numbers and use to conform to established carrying capacities would result in a gradual improvement in the existing range condition (i.e., a change in class from poor to fair or fair to good over a period of 100 years), additionally enhancing the naturalness of the area.

The projected construction of two water catchments, two miles of fence, and stabilization of one archeological site within wilderness "management standards," would alter approximately two acres. When constructed, short-term surface disturbance and the physical presence of structures would not degrade the naturalness of the WSA.

Opportunities for solitude and isolation throughout the majority of the WSA are outstanding. The intricate drainage patterns and topographic relief offer ample opportunities for isolation to individuals or groups. Under the proposed action, mineral activities would not occur, thus increasing solitude within the WSA. There would be a temporary loss of solitude during the horse gathering operations and while constructing the fences and water catchments. During horse roundups, which usually occur annually for a one-month period, an increase in man's presence would be noted but due to drainage patterns and topographic relief, this intrusion would be slight and probably be unnoticed. Similar impacts are expected from structural project construction and archeological site stabilization. Scientific research on cultural sites in the WSA will temporarily detract from solitude through the presence of human beings during the study period. However, this would be temporary in nature (one month) and insignificant overall. Solitude would be somewhat enhanced by restricting mining activity and snowmobile use.

Of the other wilderness values, the wild horses would be the only ones that are somewhat affected due to regulation of horse numbers and use, and the construction and presence of structures. However, these actions will help preserve a viable horse herd and its natural habitat.

In conclusion, the high levels of naturalness and outstanding opportunities for solitude would be statutorily protected and preserved on 16,927 acres. These values would be enhanced slightly due to the rehabitation of two acres of mining claim disturbance and solitude would be slightly enhanced due to the elimination of claim maintenance and snowmobile use.

Impacts on the Watershed Resource: (Watershed is discussed as a composite of the soil and vegetative resources.) Under the proposed action, the entire 16,927 acres of the WSA will be withdrawn from mineral entry and leasing, eliminating the potential disturbance to the watershed resource through further mineral development activities. It is projected that none of the 35 existing

lode mining claims would prove to be valid through discovery. Therefore, it is expected that annual claim maintenance (assessment work) on these claims would cease. The estimated two acres currently disturbed by this annual activity will be allowed to rehabilitate naturally, causing a very slight improvement in the overall watershed condition within the WSA.

The construction of two water catchments, two miles of fence, and stabilization of one archeological site affecting two acres would have no effect on the existing watershed condition. Therefore, due to the very limited projected disturbance, the construction of the proposed structural improvements would have an insignificant effect on the watershed resource.

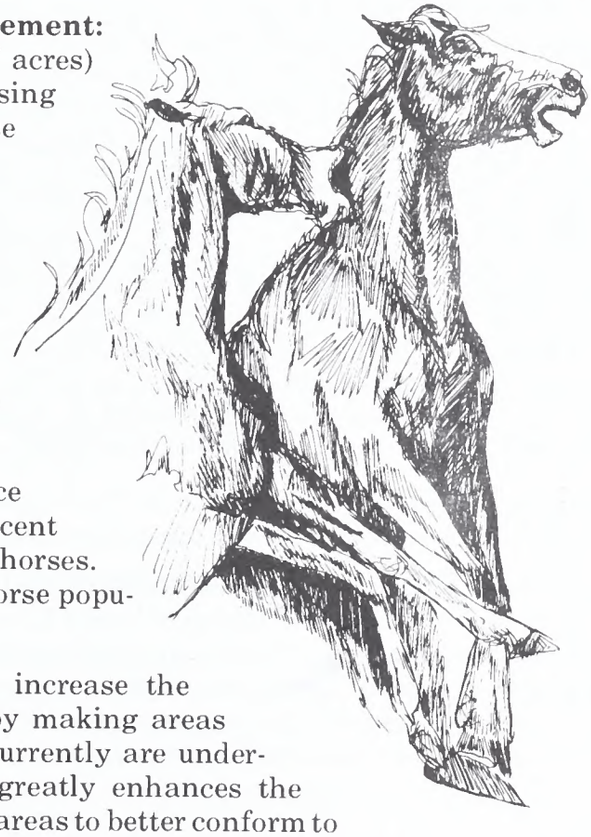
The regulation of wild horse numbers to conform to the estimated carrying capacity, and control of seasonal use of forage would allow for an improvement in range condition and stabilization of the watershed resource on an estimated 11,000 acres or 65 percent of the WSA which are now in poor to fair condition. Improvement would be realized through less severe utilization of the forage base, and less trampling and compaction of soils in herd concentration areas. The improvement process would be very slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years.) The slow recovery rate is attributed to the low precipitation level of the area (approximately five inches annually) and the lack of developed soils. In the long term, there would be improvements in watershed condition and reduced erosion levels on 11,000 acres or 65 percent of the WSA.

In conclusion, over the long term (100 years), the projected improvement in ecological range conditions on 11,000 acres will be a benefit to watershed conditions. Improvement in watershed conditions due to prevention of mineral assessment work would be positive.

Impacts on Mineral Exploration and Production: Under the proposed action, the entire 16,927 acre WSA would be withdrawn from mineral leasing under mineral leasing laws and mineral entry or appropriation under mining laws, subject to valid existing rights. It is projected that none of the 35 claims would be developed. There are no existing leases or mining activity. Development potential for all minerals is considered low to medium and no mineral activity is projected. Accordingly, there would be no effect on mineral production.

In conclusion, although exploration would be prohibited, there will be no effect on mineral production due to low potential for such development.

Impacts on Wild Horse Populations and Management: Under the proposed action, the entire WSA (16,927 acres) would be withdrawn from mineral entry and leasing which would have no direct effect on wild horse populations and management, since no mineral activity is projected. The 35 existing lode mining claims are not expected to become valid. The human activity associated with fifty days of snowmobile use and the annual maintenance of these 35 claims would cease. This would result in an insignificant reduction in harassment to the wild horse herd, allowing them to roam and utilize their desired areas freely.



The stabilization of one site, involving one mile of fence encompassing 45 acres, will remove less than 0.4 percent of the WSA and 0.1 percent of the area used by wild horses. This is considered an insignificant impact to wild horse populations and management.

The construction of two water catchments would increase the distribution opportunities for the wild horse herd by making areas within the WSA available to the wild horses that currently are under-utilized due to the lack of available water. This greatly enhances the flexibility of regulating both numbers and forage use areas to better conform to the estimated carrying capacity and the seasons during which a particular area is being used, while

allowing over-utilized areas the opportunity to rest and recover. The construction of one mile of fence would continue to help in confining the wild horses in desired areas, as well as aid in the movement of horses by restricting their travel routes to desired locations.

The actual movement of wild horses and the regulation of numbers through roundups would be limited to a horseback operation. No motorized vehicles would be allowed to aid in moving or capturing the wild horses. This would have no effect on the operation since it does not change the method currently being used.

The regulation of wild horse numbers and controlling their utilization in key areas now in poor to fair range condition (estimated at approximately 11,000 acres or 65 percent of the WSA) will result in improvement in range condition, and an increase in forage availability and watershed condition. This process is expected to be very slow (i.e., a change in range condition class from poor to fair or fair to good over a period of 100 years). Increased forage availability would increase the managerial opportunities for the 35 horses to be sustained on the range, and the areas to be utilized without endangering the herd's viability or wild and free-roaming nature. The area of distribution of wild horses within the WSA would be increased, and movement into less remote regions would result in a less complicated capture operation.

In conclusion, there would be an increase of forage availability on 11,000 acres for 35 horses and a minute decrease in harassment of the horses due to the cessation of activities on 35 claims and 50 visitor days of snowmobile use.

Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations: Mule deer and black bear have been observed throughout the WSA in a variety of different habitat types. Thirty-five existing lode mining claims would rehabilitate naturally. No further development of the mineral resource is projected to occur.

There are also two water catchments, two miles of fence, and stabilization of one archeological site proposed. These would only disturb, at a maximum, two acres. These developments would create no noticeable impact to mule deer and black bear habitat.

Since there is no mineral development projected to occur due to the low probability for discovery of marketable deposits, there is no effect on bighorn sheep habitat projected to occur through the proposed action. The construction of two water catchments would alter approximately one acre of bighorn sheep habitat, but would ultimately prove beneficial by providing an additional water source, expanding their suitable summer range. The construction of one mile of fence for horse management and one mile of fence for archeological site stabilization will be designed so as to allow free movement of the bighorn sheep within and through the WSA. The bighorn sheep do not utilize the area where stabilization of one archeological site will occur. Wild horse numbers and use will be regulated to allow for improvement in range/watershed conditions on 11,000 acres or 65 percent of the WSA, also allowing an increase in forage and range suitable for use by bighorn sheep. This is projected to be a very gradual process taking approximately 100 years to fully realize. The potential exists to transplant additional bighorn sheep into the WSA to increase herd size and reduce the chances of potential inbreeding. Transplants will not be pursued until such an action can be fully analyzed using data currently being collected by the National Park Service on the bighorn sheep herd estimated at 34 head. Fifteen rams of the herd use the WSA as summer range.

In conclusion, the proposed action will protect and preserve the existing habitat for a population of 75 mule deer, 4 black bear, and 15 bighorn rams.

Impacts on Peregrine Falcon Habitat and Population: Under the proposed action, the entire 16,927 acres of the WSA will be withdrawn from mineral entry and leasing, eliminating the potential disturbance of peregrine falcon habitat through mineral activities. It is projected that none of the 35 existing lode mining claims would prove to be valid through discovery. Therefore, it is expected that annual claim maintenance (assessment work) on these claims would eventually cease. The estimated two acres currently disturbed by this annual activity would be allowed to restabilize and rehabilitate naturally, causing a very insignificant increase in the overall peregrine's hunting range within the WSA.

The construction of two water catchments, two miles of fence, and one acre of stabilization of one archeological site would be timed so as to not disturb any known peregrine falcon nests.

The improvement of range and watershed conditions on approximately 11,000 acres or 65 percent of the WSA through regulation of wild horse numbers and use would be beneficial to the presence of the peregrine falcon. Improvement in these conditions would be slow (i.e., a change in class from poor to fair or fair to good over a 100-year period), but would promote a much more diverse and productive vegetative community, which would also encourage a much more diverse and abundant small mammal population. This would enhance the quality and quantity of the prey base available for use by the peregrine falcon.

In conclusion, the proposed action will protect and preserve peregrine falcon habitat and population.

Impacts on Recreation Use: At present, recreation use is being managed for primitive type recreation. Fifty visitor days annually of snowmobile use will be lost due to the prohibition of motorized vehicles. It is also expected that because of wilderness designation, nonmotorized recreation use of 3000 visitor days would increase due to visitation because the area has been designated wilderness. Typically, in Montana, this has ranged between two and three percent (personal communication with the former Butte District Office Wilderness Specialist, Phil Gezon) and then decline to an annual increase of one to two percent. Cultural resource management actions will have little or no effect on most recreational activities. However, the opportunity to interpret one cultural site using on-site interpretive signs will be foregone.

In conclusion, 50 user days of snowmobile use will decrease to 0 and annual nonmotorized use of 3000 visitors is projected to increase by two to three percent for decade and then return a one to two percent annual increase. The opportunity to interpret one cultural site by on-site signing will be foregone.

Impacts on Cultural Resources: Under the proposed action, stabilization of one site on one acre and fencing of 45 acres will occur. Preservation of one site will be enhanced, and the other significant site will continue to be preserved. No mineral activity is projected, so there would be no effects from such activities on cultural resources. Inventory, evaluation, and avoidance or mitigation would precede construction of two water catchments and one mile of fence. This construction would have no effect on cultural resources within the WSA.

In conclusion, two significant archeological sites will be preserved and protected.

No Wilderness Alternative

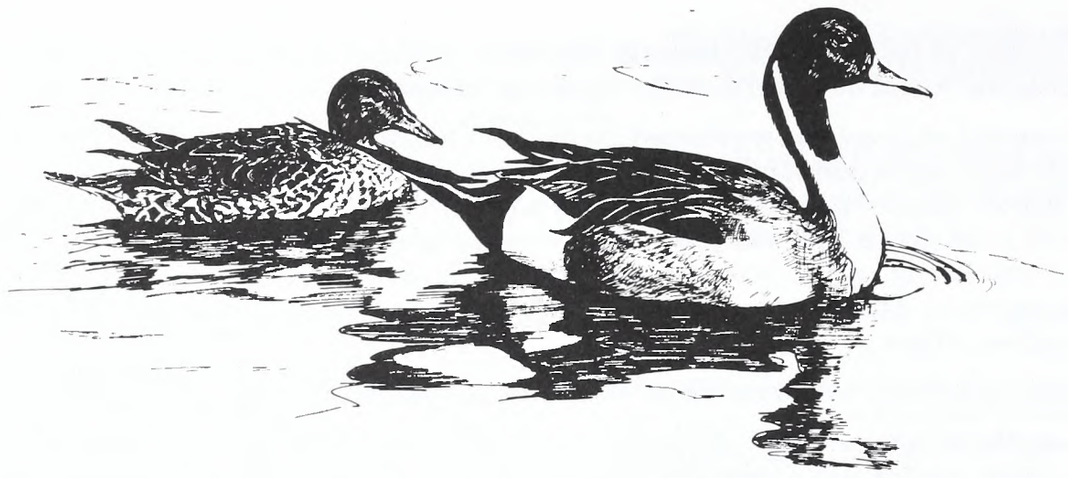
Impacts on Wilderness Values: Under this alternative, the WSA will be managed primarily as a wild horse range without special consideration for wilderness values. It is expected that the existing wilderness values would be slightly degraded. These values consist of naturalness, outstanding opportunities for solitude, isolation, size, primitive and unconfined recreational opportunities, and the supplemental values of the presence of wild horse herds, wildlife, picturesque geologic features, colorful scenery, cultural resources and deposits of vertebrate and invertebrate fossils.

Continued limitation of motorized use to snowmobiles and other authorized uses will prevent degradation of existing wilderness values. However, snowmobile use (50 visitor days annually) will reduce solitude in the northern third (approximately 5,000 acres) of the WSA for two winter months each year.

Regulating horse numbers and use will help to provide a viable horse herd in its natural habitat. Also, construction of two water catchments and one mile of fence would alter one acre. This would result in a minor reduction in naturalness of the WSA.

Since the mineral value of this area is low, no new mines are projected. The maintenance of 35 lode claims, which are generally in the southwest portion of the WSA, will reduce solitude and naturalness on as much as 700 acres. The fencing and use of interpretive signs at one cultural site will detract from naturalness and solitude, but this would involve less than one percent of the WSA.

In conclusion, mining claim maintenance, snowmobile use, fence construction, and archeological site stablization utilizing motorized equipment would slightly degrade naturalness and solitude on approximately 6,000 acres.



Impacts on the Watershed Resource: (Watershed is discussed as a composite of the soil and vegetative resources.) Under this alternative, 160 acres of the Crooked Creek National Natural Landmark will be withdrawn from mineral entry. This action will have no direct effect on the watershed resource, but would protect the 160 acres from any disturbance associated with future mineral activity (none is projected). The protection of 160 acres or one percent of the WSA's watershed from future mineral activity is considered insignificant to the overall watershed resource.

The entire 16,927 acres of the WSA (less 160 acres for the Crooked Creek withdrawal) will be open to mineral development and leasing with no surface occupancy. Due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, there would be no effect on the watershed resource. The 35 existing lode mining claims would continue to be maintained (assessment work done) on an annual basis. The total watershed disturbed by such activity is approximately two acres in size. Therefore, this activity would have insignificant impacts to the overall watershed resource.

The construction of two water catchments, two miles of fence, and stabilization of one archeological site affecting two acres would have no effect on the existing watershed condition. Therefore, due to the very limited projected disturbance, the construction of the proposed structural improvements would have an insignificant effect on the watershed resource.

The regulation of wild horse numbers to conform to the estimated carrying capacity, and control of seasonal use of forage, would allow for an improvement in range condition and stabilization of the watershed resource on an estimated 11,000 acres within the WSA which are now in poor to fair condition. Improvement would be realized through less severe utilization of the forage base, and less trampling and compaction of soils in herd concentration areas. The improvement process would be very slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years.) The slow recovery rate is attributed to the low precipitation level of the area (approximately five inches annually) and the lack of developed soils. In the long term there would be improvements in watershed condition and reduced erosion levels on 11,000 acres or 65 percent of the WSA.

In conclusion, over the long term, 100 years, the projected improvement in ecological range conditions on 11,000 acres will be a benefit to watershed conditions.

Impacts on Mineral Exploration and Production: Under this alternative, 16,767 acres of the WSA will be open to mineral entry and leasing with no surface occupancy under pertinent mining and leasing laws. The 160 acre withdrawal in Crooked Creek National Natural Landmark will be closed to mineral entry and appropriation under mining laws.

Due to the low potential for discovery and development, it is not expected that any real change in the existing situation would occur. It is projected that some or even all of the 35 existing lode claims would be maintained until long-term economics of the minerals market discourages even maintenance operations. There are no expected changes projected in the foreseeable future.

In conclusion, there would be no effect on mineral exploration or development on 16,767 acres. No exploration or production is anticipated due to low development potential.

Impacts on the Wild Horse Populations and Management: Under this alternative, 160 acres will be withdrawn from mineral entry to protect the Crooked Creek National Natural Landmark. This action would have no effect on regulating wild horse populations and management within the WSA.

The entire 16,927 acres of the WSA (less 160 acres for the Crooked Creek Withdrawal) will be open to mineral development and leasing with no surface occupancy. Due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, the net effect of having the WSA open to mineral entry would be insignificant in relation to the wild horse populations and management. The 35 existing lode mining claims would continue to be maintained annually (assessment work done) causing some harassment to the wild horse herd from human activity for short durations. Fifty days of snowmobile use will occur which could contribute to harassment of wild horses during their winter stress condition. However, this has not been a problem in the past.

The stabilization and signing of one site, involving one mile of fence encompassing 45 acres, will remove less than 0.4 percent of the WSA and 0.1 percent of the area used by wild horses. This is considered an insignificant impact to wild horse populations and management.

The construction of two water catchments would increase the distribution opportunities for the wild horse herd by making areas within the WSA available to the wild horses that currently are underutilized due to the lack of available water. This greatly enhances the flexibility of regulating both numbers and forage use areas to better conform to the estimated carrying capacity and the seasons during which a particular area is being used, while allowing overutilized areas the opportunity to rest and recover. The construction of one mile of fence would help in confining the wild horses in desired areas, as well as aid in the movement of horses by restricting their travel routes to desired locations.

The actual movement of wild horses and the regulation of numbers through roundups would be limited to a horseback operation. No motorized vehicles would be allowed to aid in moving or capturing the wild horses. This would have no effect on the operation since it does not change the method currently being used.

The regulation of wild horse numbers and controlling their utilization in key areas now in poor to fair range condition (estimated at approximately 11,000 acres or 65 percent of the WSA) will result in improvement in range condition and an increase in forage availability and watershed condition is projected to occur. This process is expected to be very slow (i.e., a change in range condition class from poor to fair or fair to good over a period of 100 years). Increased forage would increase the managerial opportunities for the 35 horses to be sustained on the range, and the areas to be utilized without endangering the herd's viability or wild and free-roaming nature. The area of distribution of wild horses within the WSA would be increased, and movement into less remote regions would result in a less complicated capture operation.

In conclusion, there would be an increase of forage available on 11,000 acres for 35 horses (identical to the proposed action) and minute harassment of the horses due to the maintenance of 35 claims and 50 visitor days of snowmobile use.

Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations: Mule deer and black bear have been observed throughout the WSA. Under this alternative, 35 existing lode mining claims would be maintained (assessed) on an annual basis. The total disturbance area for all 35 lode mining claims is estimated to be one to two acres, most or all of which has already been disturbed. There would be no effect on mule deer or black bear habitat. No further development of the mineral resource is projected to occur. There are also two water catchments and two miles of fence and stabilization of one archeological site projected. These would only disturb, at a maximum, two acres. These developments would create no noticeable impact to mule deer and black bear habitat.

Since there is no mineral development projected to occur due to the low probability for discovery of marketable deposits, there is no effect on bighorn sheep habitat projected to occur under this alternative. The construction of two water catchments would alter approximately one acre of bighorn sheep habitat, but would ultimately prove beneficial by providing an additional water source, expanding their suitable summer range. The construction of one mile of fence will be designed so as to allow free movement of the bighorn sheep within and through the WSA. Wild horse numbers and use will be regulated to allow for improvement in range/watershed conditions on 11,000 acres or 65 percent of the

WSA, also allowing an increase in forage and range suitable for use by bighorn sheep. This is projected to be a very gradual process taking approximately 100 years to fully realize. The potential exists to transplant additional bighorn sheep into the WSA to increase herd size and reduce the chances of potential inbreeding. Transplants will not be pursued until such an action can be fully analyzed using data currently being collected by the National Park Service on the resident bighorn sheep herd estimated at 34 head. Fifteen rams of the herd use the WSA as summer range.

In conclusion, the existing habitat for a population of 75 mule deer, 4 black bear, and 15 bighorn rams will be maintained.

Impacts on Peregrine Falcon Habitat and Population: Under this alternative, 160 acres will be withdrawn from mineral entry for the Crooked Creek National Natural Landmark. This action would have no direct effect on peregrine falcon habitat, but would protect the area from any disturbance associated with future mineral activity. The protection of 160 acres or one percent of the WSA's potential peregrine falcon habitat from future mineral activity is considered insignificant.

The entire 16,927 acres of the WSA (less 160 acres for the Crooked Creek withdrawal) will be open to mineral development and leasing with no surface occupancy stipulations. Large scale mineral development would significantly degrade the peregrine falcon hunting range. However, due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, there would be no effect of having the WSA open to mineral development and leasing with no surface occupancy stipulations on potential peregrine falcon habitat. The 35 existing lode mining claims would continue to be maintained (assessment work done) on an annual basis. The total area disturbed by such activity is approximately two acres in size. This activity would have no effect on the peregrine falcon.

The construction of two water catchments, two miles of fence, and stabilization and signing of one archeological site will be timed so as not to affect any nesting peregrine falcon.

The improvement of range and watershed conditions on approximately 11,000 acres or 65 percent of the WSA through regulation of wild horse numbers and use would be beneficial to the presence of the peregrine falcon. Improvement in these conditions would be slow (i.e., a change in class from poor to fair or fair to good over a 100-year period), but would promote a much more diverse and productive vegetative community, which would also encourage a much more diverse and abundant small mammal population. This would enhance the quality and quantity of the prey base available for use by the peregrine falcon.

In conclusion, peregrine falcon habitat would remain substantially unchanged. It is expected that the affects under this alternative would be essentially the same as those under the proposed action. However, this is not assured.

Impacts on Recreation Use: Management under the nonwilderness alternative will be almost the same as present management. Overall, nonmotorized use of 3,000 visitor days annually is expected to increase by one to two percent. Motorized use will continue at approximately 50 visitor days of snowmobile use. The ORV designation for other vehicles will continue and no recreational projects are proposed. Cultural resource management actions will have little or no effect on recreational activities. However, on-site interpretive signing of one cultural site will provide educational and recreational benefits to users of the WSA.

In conclusion, annual recreational use of 3,000 visitor days will increase by 1 to 2 percent annually, snowmobile use will continue at 50 visitor days annually, and on-site intrepretive signing of one cultural site will provide benefits to users.

Impacts on Cultural Resources: Under the proposed action, stabilization of one site on one acre and fencing of 45 acres will occur. One site will be signed. Preservation of one site will be enhanced, and the other significant site will continue to be preserved.

No mineral activity is projected, so there would be no effects from such activities on cultural resources. Inventory, evaluation, and avoidance or mitigation would precede construction of two water catchments and one mile of fence. This construction would have no effect on cultural resources within the WSA.

In conclusion, two significant archeological sites will be preserved and protected. One significant site will be interpreted for public education.

BURNT TIMBER CANYON WSA (MT-067-205)

Wilderness Alternative (Proposed Action)

Impacts on Wilderness Values: Under the proposed action, the entire WSA (3,430 acres) including its highly natural desert type and fir type environment, deep canyons, rolling hills and open meadows would have short-term and long-term benefits to all wilderness values by providing statutory protection. Preservation of the natural character, outstanding opportunities for solitude, isolation, size, primitive and unconfined recreational opportunities and the supplemental values of cultural resources, Yellowstone cutthroat trout in Crooked Creek, rubber boa snakes along Crooked Creek, stands of mountain mahogany and picturesque geologic features and caves would be assured throughout the WSA. Preservation of the wilderness values would in turn protect the scenic values including the deeply cut Burnt Timber Canyon located in the middle of the WSA. Overall, the 3,430 acres designated as wilderness would receive long-term statutory protection and all wilderness values would be preserved.

Specifically, through the regulation of wild horse numbers and use, gradual increase of native vegetation would occur, ultimately resulting in an improvement of the WSA's naturalness. The regulation of wild horse numbers and use to conform to the established carrying capacity would result in a gradual improvement in the existing range condition (a change in class from poor to fair or fair to good over a 100-year period).

The projected construction of one water catchment, four miles of fence, two acres of archeological stabilization and the excavation of one site within wilderness "management standards" would alter approximately five and one-half acres. When constructed, short-term surface disturbance and the physical presence of structures would not degrade the naturalness of the WSA. Mineral exploration and development would be prohibited, thus preserving naturalness.

Under the proposed action, solitude and isolation would be preserved. No mineral actions are projected. For short periods of time, horse gathering and movement would increase man's presence. However, due to drainage patterns and topographic relief, this intrusion would be slight and probably occur unnoticed. Similar impacts are expected from structural project construction, built under the wilderness "management standards." However, this would be a short, one-time occurrence for approximately one month. Permitting scientific research on cultural sites in the WSA will temporarily detract from naturalness and solitude through the presence of human beings during the study period.

In conclusion, wilderness values on 3,430 would be protected and preserved.

Impacts on the Watershed Resource: (Watershed is discussed as a composite of the soil and vegetative resources.) Under the proposed action, the entire 3,430 acres of the WSA will be withdrawn from mineral entry and leasing. This would eliminate the potential for any future degradation of the watershed resource through future mineral activities. Although the action has no direct effect on the watershed resources, it does help to enforce the management objective to maintain or improve the watershed resources within the WSA.

The construction of one water catchment, four miles of fence, the stabilization of two archeological sites, and the excavation of one site would have no effect on the existing watershed condition. Therefore, due to the very limited projected disturbance, the construction of the proposed structural improvements would have a minor effect on the watershed resource.

The regulation of wild horse numbers to conform to the estimated carrying capacity, and control of seasonal use of forage, would allow for a gradual improvement in range condition and stabilization of the watershed resource on an estimated 700 acres or 20 percent of the WSA which are now in poor to

fair condition. Improvement would be realized through less severe utilization of the forage base, and less trampling and compaction of soils in herd concentration areas. The improvement process would be very slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years.) The slow recovery rate is attributed to the low precipitation level of the area (approximately five inches annually) and the lack of developed soils. However, improvements in watershed condition and reduced erosion levels would occur on 700 acres or 20 percent of the WSA in the long term.

In conclusion, watershed conditions would improve on 700 acres in the long term (100 years).

Impacts on Mineral Exploration and Production: Under the proposed action, the entire 3,430 acres within the WSA will be withdrawn from mineral leasing, mineral entry or appropriation, subject to valid existing rights. There are no existing leases, mining claims or mining activity. Development potential for all minerals is considered low and no mineral development activity is projected. Accordingly, there would be no effect on mineral exploration and production.

In conclusion, although exploration would be prohibited, there would be no effect on mineral production due to low potential for such development.

Impacts on Wild Horse Populations and Management: Under the proposed action, the entire 3,430 acres of the WSA will be withdrawn from mineral entry and leasing. This action would have no effect on the wild horse populations and management, since no mineral activity is projected. Fencing of four cultural sites will not effect wild horses, because it will be outside of their range.

The construction of one water catchment would significantly increase the distribution opportunities for the wild horse herd by making areas within the WSA available to the wild horses that currently are underutilized due to the lack of available water. This greatly enhances the flexibility of regulating both numbers and forage use areas to better conform to the estimated carrying capacity and the seasons during which a particular area is being used, while allowing over utilized areas the opportunity to rest and recover. The construction of one-half mile of fence would help in confining the wild horses in desired areas, as well as aid in the movement of horses by restricting their travel routes to desired locations.

The actual movement of wild horses and the regulation of numbers through roundups will continue to be limited to a horseback operation. No motorized vehicles will be allowed to aid in moving or capturing the wild horses. This would have an no effect on the operation, as that is how it is currently being conducted.

The regulation of wild horse numbers and controlling their utilization in key areas now in poor to fair range condition (estimated at approximately 700 acres or 20 percent of the WSA) will result in improvement in range condition and an increase in forage availability and watershed condition. This process is expected to be very slow (i.e., a change in range condition class from poor to fair or fair to good over a period of 100 years). Increased forage availability would increase the managerial opportunities for the 17 horses to be sustained on the range, and the areas to be utilized without endangering the herd's viability or wild and free-roaming nature. The area of distribution of wild horses within the WSA would be increased, and movement into less remote regions would result in a less complicated capture operation.

In conclusion, there would be an increase of forage availability on an estimated 700 acres and 17 horses would be protected.

Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations: Mule deer and black bear have been observed throughout the WSA. Populations are estimated at 50 and 3, respectively. Based on historical interest and economic feasibility of production, no further development of the mineral resource is projected to occur. There is also one water catchment, four miles of fence, stabilization of two archeological sites, and excavation of a third projected under the proposed action, which would disturb a maximum of five and one-half acres. These developments would create no noticeable impact to mule deer and black bear habitat.

Currently, bighorn sheep do not use the WSA. Since there is no mineral development projected to occur due to the low probability for discovery of marketable deposits, there would be no effect on bighorn sheep habitat under this proposed action. The construction of one water catchment would alter approximately one-half acre of bighorn sheep habitat, but would ultimately prove beneficial by providing an additional water source and expanding their suitable home range. The construction of four miles of fence will be designed so as to allow free movement of the bighorn sheep within and through the WSA. Wild horse numbers and use will be regulated to allow for improvement in range/watershed conditions on 700 acres or 20 percent of the WSA, also allowing for an increase in forage and range suitable for use by bighorn sheep. This is projected to be a very gradual process, taking approximately 100 years to fully realize. The potential exists to transplant additional bighorn sheep into the WSA to increase herd size and reduce the chances of potential inbreeding, but will not be pursued until such an action can be fully analyzed using data currently being collected by an intensive study sponsored by the National Park Service on the resident bighorn sheep herd.

In conclusion, the proposed action will protect and preserve the existing habitat for a population of 50 mule deer and 3 black bear. The habitat for the big horn sheep will be enhanced and they might use the WSA as summer range.

Impacts on Peregrine Falcon Habitat and Population: The only federally recognized threatened or endangered species suspected to occur within the WSA is the peregrine falcon. Under the proposed action, the entire 3,430 acres will be withdrawn from mineral entry and leasing. The proposed action supports the protection of the WSA from any disturbance which potentially could affect the presence of the peregrine falcon.

The construction of one water catchment, four miles fence, and stabilization of two archeological sites and excavation of a third would be timed so as to not disturb any known peregrine falcon nests.

The improvement of range and watershed conditions on approximately 700 acres or 20 percent of the WSA through regulation of wild horse number and use would be significantly beneficial to the presence of the peregrine falcon. Improvement in these conditions would be slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years), but would promote a much more diverse and productive vegetative community, which would also encourage a much more diverse and abundant small mammal population. This would enhance the quality and quantity of the prey base available for use by the peregrine falcon.

In conclusion, the proposed action will protect and preserve peregrine falcon habitat and population.

Impacts on Recreation Use: At present, recreation use is being managed for primitive type recreation. Snowmobiles will be included under the ORV closure and no change is expected because there is no current snowmobile use. It is also expected that, because of wilderness designation, nonmotorized recreation use of 1500 visitor days annually would increase from those types of visitors who would visit an area just because it has been designated wilderness. Typically, in Montana, this has ranged between two and three percent for a decade (personal communication with former Butte District Office Wilderness Specialist Phil Gezon). Cultural resource management actions will have little or no effect on most recreational activities. Four archeological sites will be interpreted from outside the WSA. However, the opportunity to interpret two cultural sites will be foregone. Overall, an increase of nonmotorized use of two to three percent for a decade is expected as a result of wilderness designation.

In conclusion, annual nonmotorized use will increase from two to three percent for a decade and then return to one to two percent. The opportunity to interpret two of six cultural sites will be foregone.

Impacts on Cultural Resources: Under the proposed action, stabilization of two sites on two acres, fencing of 350 acres, and signing of four sites from outside the WSA will occur. Preservation of six significant sites will be enhanced, and a seventh significant site will continue to be preserved.

Phased data recovery at a third site under the wilderness "management standard" will contribute significantly to knowledge of the Demi-John Archeological District.

No mineral activity is projected, so there would be no effects from such activities on cultural resources. Inventory, evaluation, and avoidance or mitigation would precede construction of one water catchment and one-half mile of fence. This construction would have no effect on cultural resources within the WSA.

In conclusion, seven significant archeological sites will be protected, and additional information recovered from one site. Four significant sites will be interpreted for public education.

No Wilderness Alternative

Impacts on Wilderness Values: Under this alternative, the WSA will be managed primarily as a wild horse range without special consideration for wilderness values. It is expected that the existing wilderness values would be slightly degraded. These values consist of naturalness, outstanding opportunities for solitude, isolation, size, primitive and unconfined recreational opportunities and the supplemental values of cultural resources, Yellowstone cutthroat trout in Crooked Creek, rubber boa snakes along Crooked Creek, stands of mountain mahogany and picturesque geologic features and caves.

Limiting motorized use to authorized use only will preserve most of the existing wilderness values.

This area will be open for exploration and development of mineral resources. However, all leasing will be with no surface occupancy stipulations. There are no existing mining claims and no mineral activity is projected, so there will be no impacts to wilderness values.

Naturalness would be slightly degraded by construction, utilizing motorized equipment, of one water catchment, four miles of fence, and two acres of archeological stabilization, and excavation at another archeological site encompassing a total of 3.5 to 5.5 acres. The activity associated with these projects would also degrade solitude for short intervals.

In conclusion, fence and water catchment construction, as well as archeological site stabilization and excavation utilizing motorized equipment, would degrade naturalness and solitude on approximately 100 acres.

Impacts on the Watershed Resource: (Watershed is discussed as a composite of the soil and vegetative resources.) Under this alternative, the entire 3,430 acres of the WSA would be open to mineral development and leasing with no surface occupancy stipulations. However, due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, there is no effect from having the WSA open to mineral development and leasing.

The construction of one water catchment, four miles of fence, stabilization of two sites, excavation of one site, and signing of six sites affecting five and one-half acres would have an insignificant effect on the watershed resource.

The regulation of wild horse numbers to conform to the estimated carrying capacity and control of seasonal use of forage would allow for a gradual improvement in range condition and stabilization of the watershed resource on an estimated 700 acres within the WSA, which are now in poor to fair condition. Improvement would be realized through less severe utilization of the forage base, and less trampling and compaction of soils in herd concentration areas. The improvement process would be very slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years). The slow recovery rate is attributed to the low precipitation level of the area (approximately five inches annually) and the lack of developed soils. However, improvements in watershed condition and reduced erosion levels would occur on 700 acres or 20 percent of the WSA in the long term.

In conclusion, watershed conditions would improve on 700 acres in the long term (100 years). These impacts are identical to those under the proposed action.

Impacts on Mineral Exploration and Production: Under this alternative, the entire 3,430 acres within the WSA will be open to mineral entry and leasing with no surface occupancy under mineral mining and leasing laws. Due to low development potentials, it is projected that no mineral activity would occur.

In conclusion, there would be no effect on mineral exploration or production. No exploration or production is anticipated due to low development potential.

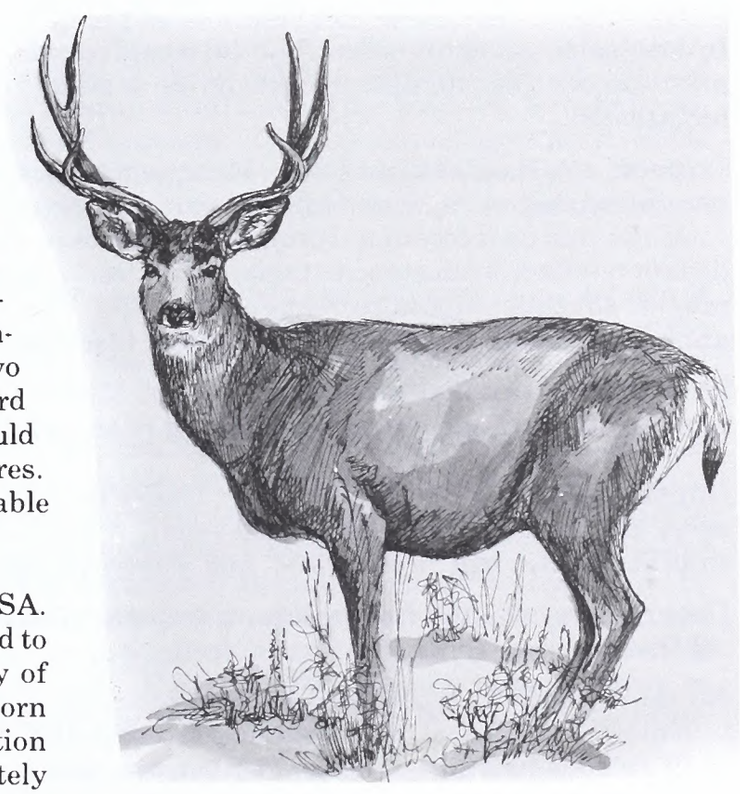
Impacts on Wild Horse Populations and Management: Under this alternative, the entire 3,430 acres of the WSA will be open to mineral development and leasing with no surface occupancy stipulations. Due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, there would be no effect on wild horse populations and management. Fencing of six cultural sites will not effect wild horses, because it will be outside of their range.

The construction of one water catchment would increase the distribution opportunities for the wild horse herd by making areas within the WSA available to the wild horses that currently are underutilized due to the lack of available water. This greatly enhances the flexibility of regulating both numbers and forage use areas to better conform to the estimated carrying capacity and the seasons during which a particular area is being used, while allowing overusing areas the opportunity to rest and recover. The construction of one-half mile of fence would help in confining the wild horses in desired areas, as well as aid in the movement of horses by restricting their travel routes to desired locations.

The regulation of wild horse numbers and controlling their utilization in key areas now in poor to fair range condition (estimated at approximately 700 acres or 20 percent of the WSA), will result in improvement in range condition and an increase in forage availability and watershed condition. This process is expected to be very slow (i.e., a change in range condition class from poor to fair or fair to good over a period of 100 years). Increased forage availability would increase the managerial opportunities for the 17 horses to be sustained on the range and the areas to be utilized without endangering the herd's viability or wild and free-roaming nature. The area of distribution of wild horses within the WSA would be increased, and movement into less remote regions would result in a less complicated capture operation.

In conclusion, there would be an increase of forage availability on an estimated 700 acres and 17 horses would be protected. This is identical to the impacts under the proposed action.

Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations: Mule deer and black bear have been observed throughout the WSA. Under this alternative, the WSA would be opened to mineral exploration and development. However, based on historical interest and economic feasibility of production, no furthur development of the mineral resource is projected to occur. There is also one water catchment, four miles of fence, stabilization of two archeological sites and excavation of a third projected under this alternative, which would disturb a maximum of five and one-half acres. These developments would create no noticeable impact to mule deer and black bear habitat.



Currently, bighorn sheep do not use the WSA. Since there is no mineral development projected to occur due to the low probability for discovery of marketable deposits, there is no effect on bighorn sheep habitat projected to occur. The construction of one water catehment would alter approximately one-half acre of bighorn sheep habitat, but would ultimately prove beneficial by providing an additional water source and expanding their suitable summer range. The construction of four miles of fence will be designed so as to allow free movement of the bighorn sheep within and through the WSA. Wild horse numbers and use will be regulated to

allow for improvement in range/watershed conditions on 700 acres or 20 percent of the WSA, also allowing for an increase in forage and range suitable for use by bighorn sheep. This will result in an increase in herd numbers. This is projected to be a very gradual process, taking approximately 100 years to fully realize. The potential exists to transplant additional bighorn sheep into the WSA to increase herd size and reduce the chances of potential inbreeding, but will not be pursued until such an action can be fully analyzed using data currently being collected by an intensive study sponsored by the National Park Service on the resident bighorn sheep herd.

In conclusion, the existing habitat for a population of 50 mule deer and 3 black bear will be maintained. The habitat for big horn sheep will be enhanced and they might use the WSA for summer range.

Impacts on Peregrine Falcon Habitat and Population: The only federally recognized threatened or endangered species suspected to occur within the WSA is the peregrine falcon. Under this alternative, the entire 3,430 acres will be open to mineral development and leasing with no surface occupancy stipulations. Large scale mineral development would significantly degrade the peregrine falcon hunting range. However, due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, the net effect of having the WSA open to mineral development and leasing with no surface occupancy would be insignificant to potential peregrine falcon habitat.

The construction of one water catchment, four miles of fence, stabilization of two archeological sites and excavation of a third site will be timed so as not to affect any nesting peregrine falcon.

The improvement of range and watershed conditions on approximately 700 acres or 20 percent of the WSA through regulation of wild horse number and use would be significantly beneficial to the presence of the peregrine falcon. Improvement in these conditions would be slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years), but would promote a much more diverse and productive vegetative community, which would also encourage a much more diverse and abundant small mammal population. This would enhance the quality and quantity of the prey base available for use by the peregrine falcon.

In conclusion, peregrine falcon habitat would remain substantially unchanged. It is expected that the affects under this alternative would be the same as those under the proposed action. However, this is not assured.

Impacts on Recreation Use: Management under no wilderness will be almost the same as present management, thus no significant change in recreation use is expected. The ORV closure will continue, and no recreational projects are proposed. Cultural resource management actions will have little or no effect on most recreational activities. However, interpretive signing of six cultural sites will provide educational and recreational benefits. The present nonmotorized use level is 1500 visitors annually, and an increase of 1 to 2 percent is projected.

In conclusion, annual recreational use of 1500 visitor days will increase by one to two percent annually and on-site interpretive signing of six cultural sites will provide benefits to users.

Impacts on Cultural Resources: Under the proposed action, stabilization of two sites on two acres and fencing of 350 acres will occur. A total of six sites will be signed. Preservation of six significant sites will be enhanced, and a seventh significant site will continue to be preserved.

Data recovery at a third site will contribute significantly to knowledge of the Demi-John Archeological District.

No mineral activity is projected, so there would be no effects from such activities on cultural resources. Inventory, evaluation, and avoidance or mitigation would precede construction of one water catchment and one-half mile of fence. This construction would have no effect on cultural resources within the WSA.

In conclusion, seven significant archeological sites will be protected, and additional information recovered from one site. Six significant sites will be interpreted for public education.

BIG HORN TACK-ON WSA (MT-067-207)

Wilderness Alternative (Proposed Action)

Impacts on Wilderness Values: Under the proposed action of the entire WSA (2,550 acres) including its highly natural desert type and fir type environment, deep canyon, high cliffs, steep hill sides and small meadows on the west side would have short-term and long-term benefits to all wilderness values by providing statutory protection. Preservation of the natural character, outstanding opportunities for solitude, isolation, size, primitive and unconfined recreational opportunities and the supplemental values would be assured throughout the WSA. Preservation of the wilderness values would in turn protect the scenic values including the deep cut in Layout Creek, the cliffs and rocky points located in the WSA. Overall, the 2,550 acres designated as wilderness would receive long-term statutory protection and all wilderness values would be preserved.

Specifically, through the regulation of wild horse numbers and use, gradual increase of native vegetation would occur, ultimately resulting in an improvement of the WSA's naturalness. The regulation of wild horse numbers and use to conform to the established carrying capacity would result in a gradual improvement in the existing range condition (a change in class from poor to fair or fair to good over a 100-year period). The projected construction of one water catchment and one-half mile of fence would impact approximately one-half acre. However, the projects will be built under the wilderness "management standard." When constructed, short-term surface disturbance and the physical presence of these projects would not degrade the naturalness of the WSA. Although none is projected, mineral exploration and development would be prohibited, thus preserving naturalness.

For short periods of time, horse gathering and movement would increase man's presence. However, due to drainage patterns and topographic relief, this intrusion would be slight and probably occur unnoticed. Similar impacts are expected from structural project construction. However, this would be a short, one-time occurrence for approximately one month.

In conclusion, all wilderness values on 2,550 acres would be protected and preserved.

Impacts on the Watershed Resource: (Watershed is discussed as a composite of the soil and vegetative resources.) Under the proposed action, the entire 2,550 acres of the WSA will be withdrawn from mineral entry and leasing. This would eliminate the potential for any future degradation of the watershed resource through development activities. Although the action has no direct effect on the watershed resources, it does help to enforce the commitment to maintain or improve the watershed resources within the WSA.

The construction of one water catchment would affect approximately one-half acre. Construction of one-half mile of fence would have no effect on the existing watershed condition. Therefore, due to the very limited projected disturbance, the construction of the proposed structural improvements would have an insignificant effect on the watershed resource.

The regulation of wild horse numbers to conform to the estimated carrying capacity, and control of seasonal use of forage would allow for a gradual improvement in range condition and stabilization of the watershed resource on an estimated 1,600 acres or 63 percent of the WSA which are now in poor to fair condition. Improvement would be realized through less severe utilization of the forage base, less trampling, and compaction of soils in herd concentration areas. The improvement process would be very slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years.) The slow recovery rate is attributed to the low precipitation level of the area (approximately five inches annually) and the lack of developed soils. However, the ultimate improvements in watershed condition and reduced erosion levels on 1,600 acres or 63 percent of the WSA is determined to be beneficial in the long term.

In conclusion, watershed conditions would improve on 1,600 acres in the long term (100 years).

Impacts on Mineral Exploration and Production: Under the proposed action, the entire 2,550 acres within the WSA will be withdrawn from mineral entry, subject to valid existing rights. There are

no existing leases, mining claims or mining activity. Development potential for all minerals is considered low and no mineral development is projected. Accordingly, there would be no effect on mineral production.

In conclusion, although exploration would be prohibited, there would be no effect on mineral production due to low potential for such development.

Impacts on Wild Horse Populations and Management: Under the proposed action, the entire 2,550 acres of the WSA will be withdrawn from mineral entry and leasing. This action would have no effect on the wild horse populations and management, since no mineral activity is projected.

The construction of one water catchment would increase the distribution opportunities for the wild horse herd by making areas within the WSA available to the wild horses that are currently under utilized due to the lack of available water. This greatly enhances the flexibility of regulating both numbers and forage use areas to better conform to the estimated carrying capacity and the seasons during which a particular area is being used, while allowing over utilized areas the opportunity to rest and recover. The construction of one-half mile of fence would help in confining the wild horses in desired areas, as well as aid in the movement of horses by restricting their travel routes to desired locations.

The actual movement of wild horses and the regulation of numbers through roundups will be limited to a horseback operation since no motorized vehicles will be allowed to aid in herding or capturing the wild horses. This would have no effect on the operation since it does not change the method currently being used.

The regulation of wild horse numbers and controlling their utilization in key areas now, in poor to fair range condition (estimated at approximately 1,600 acres or 63 percent of the WSA) will result in improvement in range condition and an increase in forage availability and watershed condition. This process is expected to be very slow (i.e., a change in range condition class from poor to fair or fair to good over a period of 100 years). Increased forage availability would increase the managerial opportunities for one horse to be sustained on the range, and the areas to be utilized without endangering the herd's viability or wild and free-roaming nature. The area of distribution of wild horses within the WSA would be increased, and movement into less remote regions would result in a less complicated capture operation.

In conclusion, there would be an increase of forage available on an estimated 1,600 acres and one wild horse would be protected.

Impacts on Mule Deer, Black Bear, and Bighorn Sheep Habitat and Populations: Mule deer population are estimated at 50 and bear at 2. No further development of the mineral resource is projected to occur. There is also one water catchment and one-half mile of fence propsed under the wilderness alternative, which would disturb a maximun of one-half acre. These developments would create no noticeable impact to mule deer and black bear habitat.

Fifteen bighorn sheep rams utilize the northern portion of the WSA as a migration route from their winter range, located to the east on National Park Service land to their spring/summer range located in the Pryor Mountains WSA. Since there is no mineral development projected to occur, due to the low probability for discovery of marketable deposits, there would be no effect on the bighorn sheep habitat projected to occur through this proposed action. The construction of one water catchment would alter approximately one-half acre of bighorn sheep habitat, but would ultimately prove beneficial by providing an additional water source and

expanding their suitable home range. The construction of one-half mile of fence will be designed so as to allow free movement of the bighorn sheep within and through the WSA. Wild horse numbers and use will be regulated to allow for improvement in range/watershed conditions on 1,600 acres or 63 percent of the WSA, also allowing for an increase in forage and range suitable for use by bighorn sheep. This is projected to be a very gradual process, taking approximately 100 years to fully realize. The potential exists to transplant additional bighorn sheep into the WSA to increase herd size and reduce the chances of potential inbreeding. However, this will not be pursued until such an action can be fully analyzed, using data currently being collected by an intensive study sponsored by the National Park Service on the resident bighorn sheep herd.

In conclusion, the proposed action will protect and preserve the existing habitat for 50 deer, 2 black bear and 15 bighorn rams.

Impacts on Peregrine Falcon Habitat and Population: The only federally recognized threatened or endangered species suspected to occur within the WSA is the peregrine falcon. Under the proposed action, the entire 2,550 acres will be withdrawn from mineral entry and leasing. This proposed action will support the protection of the WSA from any disturbance which potentially could effect the presence of the peregrine falcon.

The construction of one water catchment and one-half mile of fence would be timed so as not to disturb any known peregrine falcon nests.

The improvement of range and watershed conditions on approximately 1,600 acres (63 percent) of the WSA through regulation of wild horse number and use would be beneficial to the presence of the peregrine falcon. Improvement in these conditions would be slow (i.e., 100 years), but would promote a much more diverse and productive vegetative community, which would also encourage a much more diverse and abundant small mammal population. This would enhance the quality and quantity of the prey base available for use by the peregrine falcon.

In conclusion, the proposed action will protect and preserve peregrine falcon habitat and population.

Impacts on Recreation Use: At present, recreation use is being managed for primitive type recreation. Snowmobiles will be included under the ORV closure and no change is expected because there is no current snowmobile use. It is also expected that because of wilderness designation, nonmotorized recreation use of 850 visitor days annually would increase from those types of visitors who would visit an area just because it has been designated wilderness. Typically, in Montana, this ranges between two and three percent for a decade (personal communication with the former Butte District Office Wilderness Specialist, Phil Gezon). Cultural resource management actions will have no effect on recreational activities.

In conclusion, an increase will occur in nonmotorized use of two or three percent for a decade.

Impacts on Cultural Resources: Under the proposed action, existing site integrity will continue to be preserved. No mineral activity is projected, so there would be no effects from such activities on cultural resources. Inventory, evaluation, and avoidance or mitigation would precede construction of one water catchment and one-half mile of fence. This construction would have no effect on cultural resources within the WSA.

In conclusion, archeological sites will be protected and preserved.

No Wilderness Alternative

Impacts on Wilderness Values: Under this alternative, the area will be managed primarily as a wild horse range without special consideration for wilderness values. It is expected that the existing wilderness values would be slightly degraded. These values consist of naturalness, outstanding opportunities for solitude, isolation, size, primitive and unconfined recreational opportunities, and supplemental values of picturesque geologic features, colorful scenery, vegetational differences of Park Service lands to the east and arid lowlands within the wild horse range, and cultural resources.

Regulation of horse numbers and use would preserve a viable horse herd and its natural habitat. Construction of one water catchment and one-half mile of fence utilizing motorized equipment is an intrusion on the value of naturalness, but overall this is a minor impact.

This area will be open for exploration and development of mineral resources. However, leasing will be with no surface occupancy stipulations. There are no existing mining claims and no mineral activity is projected, so there will be no impacts on wilderness values.

In conclusion, naturalness and solitude would be slightly degraded on 20 acres by construction of a water catchment and one-half mile of fencing.

Impacts to the Watershed Resource: (Watershed is discussed as a composite of the soil and watershed resources.) Under this alternative, the entire 2,550 acres of the WSA will be open to mineral development and leasing with no surface occupancy stipulations. Due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, there would be no impacts on the watershed resource.

The construction of one water catchment would affect approximately one-half acre. Construction of one-half mile of fence would have no effect on the existing watershed condition. Therefore, due to the very limited projected disturbance, the construction of the proposed structural improvements would have an insignificant effect on the watershed resource.

The regulation of wild horse numbers to conform to the estimated carrying capacity and control of seasonal use of forage would allow for a gradual improvement in range condition and stabilization of the watershed resource on an estimated 1,600 acres or 63 percent of the WSA which are now in poor to fair condition. Improvement would be realized through less severe utilization of the forage base and less trampling and compaction of soils in herd concentration areas. The improvement process would be very slow (i.e., a change in range/watershed condition class from poor to fair or fair to good in 100 years.) The slow recovery rate is attributed to the low precipitation level of the area (approximately five inches annually) and the lack of developed soils. However, the ultimate improvement in watershed condition and reduced erosion levels on 1,600 acres or 63 percent of the WSA would be beneficial in the long term.

In conclusion, watershed conditions would improve on 1,600 acres in the long term (100 years). These impacts are identical to those under the proposed action.

Impacts on Mineral Exploration and Production: Under this alternative, the 2,550 acres within the WSA will be open to mineral entry and leasing with no surface occupancy stipulations under mineral mining and leasing laws. Due to low development potentials, it is projected that no mineral activity would occur.

In conclusion, there would be no effect on mineral exploration or production. No exploration or production is anticipated due to low development potential.

Impacts on Wild Horse Populations and Management: Under this alternative, the entire 2,550 acres of the WSA will be open to mineral development and leasing with no surface occupancy stipulations. Due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, there is no effect on wild horse populations and management.

The construction of one water catchment would increase the distribution opportunities for the wild horse herd by making areas within the WSA available to the wild horses that currently are underutilized due to the lack of available water. This greatly enhances the flexibility of regulating both numbers and forage use areas to better conform to the estimated carrying capacity and the seasons during which a particular area is being used, while allowing overusing areas the opportunity to rest and recover. The construction of one-half mile of fence would help in confining the wild horses in desired areas, as well as aid in the movement of horses by restricting their travel routes to desired locations.

The regulation of wild horse numbers and controlling their utilization in key areas now in poor to fair range condition (estimated at approximately 1,600 acres or 63 percent of the WSA), will result in an improvement in range condition and an increase in forage availability and watershed condition. This

process is expected to be very slow (i.e., a change in range condition class from poor to fair or fair to good over a period of 100 years). Increased forage availability would increase the managerial opportunities for the one horse to be sustained on the range and the areas to be utilized without endangering the herd's viability or wild and free-roaming nature. The area of distribution of wild horses within the WSA would be increased, and movement into less remote regions would result in a less complicated capture operation.

In conclusion, there would be an increase of forage available on an estimated 1,600 acres and one wild horse would be protected. This is identical to the impacts under the proposed action.

Impacts on Mule Deer, Black Bear and Bighorn Sheep Habitat and Populations: Mule deer and black bear are being considered concurrently, since both have been observed throughout the WSA, and it is projected that impacts from selection of this alternative would be similar on both species.

Under this alternative, the WSA will be opened to mineral exploration and development. Based on historical interest and economic feasibility of production, no development of the mineral resource is projected to occur. There is also one water catchment and one-half mile of fence projected under this alternative, which would disturb a maximum of one-half acre. These developments would create no noticeable impact to mule deer and black bear habitat.

Fifteen bighorn sheep rams utilize the northern portion of the WSA, as a migration route from their winter range, located to the east on National Park Service land, to their spring/summer range located in the Pryor Mountain WSA. Since there is no mineral development projected to occur due to the low probability for discovery of marketable deposits, there would be no effect on the bighorn sheep habitat projected to occur through this alternative. The construction of one water catchment would alter approximately one-half acre of bighorn sheep habitat, but would ultimately prove beneficial by providing an additional water source and expanding their suitable home range. The construction of one-half mile of fence will be designed so as to allow free movement of the bighorn sheep within and through the WSA. Wild horse numbers and use will be regulated to allow for improvement in range/watershed conditions on 1,600 acres (63 percent) of the WSA, also allowing for an increase in forage and range suitable for use by bighorn sheep. This is projected to be a very gradual process, taking approximately 100 years to fully realize. The potential exists to transplant additional bighorn sheep into the WSA to increase herd size and reduce the chances of potential inbreeding. However, this will not be pursued until such an action can be fully analyzed, using data currently being collected by an intensive study sponsored by the National Park Service on the resident bighorn sheep herd.

In conclusion, the existing habitat for a population of 50 mule deer, 2 black bear and 15 bighorn rams will be maintained.

Impacts on Peregrine Falcon Habitat and Population: The only federally recognized threatened or endangered species suspected to occur within the WSA is the peregrine falcon. Under this alternative, the entire 2,550 acres will be open to mineral development and leasing with no surface occupancy. Large scale mineral development would substantially degrade the peregrine falcon hunting range. However, due to the low probability for discovery of marketable deposits, no future mineral activity is projected. Therefore, there would be no effect on potential peregrine falcon habitat. The construction of one water catchment and one-half mile of fence will be timed so as not to affect any nesting peregrine falcon. The improvement of range and watershed conditions on approximately 1,600 acres (63 percent) of the WSA through regulation of wild horse number and use would be beneficial to the presence of the peregrine falcon. Improvement in these conditions would be slow (i.e., 100 years) but would promote a much more diverse and productive vegetative community, which would also encourage a much more diverse and abundant small mammal population. This would enhance the quality and quantity of the prey base available for use by the peregrine falcon.

In conclusion, peregrine falcon habitat would remain substantially unchanged. It is expected that the impacts under this alternative would be essentially the same as those under the proposed action. However, this is not assured.

Impacts on Recreation Use: Management under nonwilderness will be almost the same as present management. Thus, recreation use of 850 visitor days is expected to increase 1 to 2 percent annually. The ORV closure will continue, and no recreational projects are proposed.

In conclusion, an increase will occur in nonmotorized use of 850 visitor days of one to two percent annually.

Impacts on Cultural Resources: As under the proposed action, existing site integrity will continue to be preserved. No mineral activity is projected, so there would be no effects from such activities on cultural resources. Inventory, evaluation, and avoidance or mitigation would precede construction of one water catchment and one-half mile of fence. Due to minimal surface disturbance, projected fence construction and one water catchment would have no effect on cultural resources within the WSA.

In conclusion, archeological sites will be protected.

CONSULTATION, COORDINATION, AND PUBLIC INVOLVEMENT

DOCUMENT PREPARATION

The Draft Environmental Impact Statement (DEIS) on the Billings Resource Management Plan (RMP) served as the DEIS for this document. As noted in Chapter 1, alternatives for Burnt Timber Canyon and Bighorn Tack-on were modified in the Record of Decision for the RMP/FEIS. The Billings RMP-DEIS, Billings RMP-FEIS, and this FEIS were prepared by a Program Manager, a Technical Coordinator, an interdisciplinary team of natural resource specialists, and others.

LIST OF PREPARERS

Lloyd Fusselman, Project Manager

BS Range Conservation, Utah State University. Lloyd was responsible for the overall coordination of the project and wrote the Minerals section of this EIS. He has worked 13 years for BLM.

Sally King, Technical Coordinator

BS Physical Geography, University of Wyoming. Sally was responsible for seeing that the information in this EIS is technically correct and consistent. She has been with BLM for a total of five years.

Steven Seth, Wildlife Biologist

BS Wildlife Management, New Mexico State University. Steve has worked 14 years for BLM and wrote the Wildlife, Watershed, and Wild Horse Management sections of this EIS.

Keith Mosbaugh, Outdoor Recreation Planner — Project Manager since 6/87

BS Forestry, University of Montana. Keith worked on the Recreation section of this EIS and has been with BLM for 21 years.

John Taylor, Archaeologist

BA Anthropology, University of Pennsylvania. MA Anthropology, University of Montana. John wrote the Cultural Resources section of this EIS and has worked nine years for BLM.

Teri Marshall

Teri graduated from Huntley High School in Worden, Montana. She did the word processing of the document and has worked for the BLM for two years.

Carol Smith

Carol graduated from Custer County High School, and attended Miles Community College in Miles City, Montana. She did the word processing of the document and has worked for the BLM for five years.

Jim Hetzer, Writer/Editor

BA Journalism, University of Colorado. He edited the document. He has been with the BLM for eight years.

Montana State and District Office Assistance

Chris Roholt coordinated District Office review and contributed to the final rewrite and review. The Montana BLM State Office and Miles City District Office assisted in reviewing this document. The MSO Printing & Graphics Section did the final word processing and typesetting.

People who worked on a previous draft of this document:

Gary Leppart
Jim Beaver
Jerome Jack
Karl Hedrick
Jay Spielman
Wilton "Willie" Peterson
Lynn Taylor
Bonnie Hogan
Clark Whitehead
Gary Pavek
Joan Trent
Jerry Majerus
Kathy Bockness
Amy Fraley
David Fraley
Diane Gwin
Teri Marshall

CONSULTATION AND COORDINATION PRIOR TO RMP/DEIS

An active public participation process was conducted prior to the development of the Billings RMP/DEIS. Open houses to obtain wilderness related information, concerns and opinions were held in Billings and Lewistown, Montana, and Lovell, Wyoming, during May 1982. From the input received at these meetings, three major issues for wilderness were identified:

(1) How much wilderness is needed?

(2) Protection/management of wilderness values.

(3) The impact of possible wilderness designation on other existing and future uses of certain public lands. This concern was centered around the future management of the Pryor Mountain wild horses.

Later discussions with several ranchers whose privately-owned lands are contiguous to the Pryor Mountain Wild Horse Range also disclosed an additional issue. This concern was centered around the possible use of eminent domain by the federal government to obtain additional nonpublic lands for inclusion in wilderness proposals. A satisfactory response to this concern during the discussions resulted in this issue not being carried forward into the planning process.

A *Federal Register* notice was published to focus the public and industry attention on the Billings RMP planning process. News releases were also sent to local media sources explaining the planning process and soliciting information on management issues and concerns. BLM personnel were consulted at the area, district and state office levels for input on possible resource issues. Other governmental entities at the county, state, tribal and federal levels were consulted about areas of concern. This process resulted in the identification of 20 issues. These issues were then presented in a brochure which was mailed to numerous individuals, governmental entities and special interest groups for refinement and additional input. After the public input was received and analyzed, the 20 issues were further refined or grouped into 13 areas of concern which were carried into the RMP planning process. One of the issue areas was the concern about wilderness proposals in the Pryor and Snowy Mountain areas and the wilderness alternatives to be analyzed in the RMP.

CONSULTATION, COORDINATION, AND PUBLIC INVOLVEMENT BETWEEN RMP/DEIS AND RMP/FEIS PREPARATION

Coordination meetings were conducted with the National Park Service (Bighorn Canyon National Recreational Area) and the U.S. Forest Service (Custer and Lewis and Clark National Forests) to discuss the Bureau of Land Management's wilderness proposals. The other agency plans were reviewed and BLM's Proposed Action Alternative is consistent with those plans.

The Billings RMP/DEIS was filed with the Environmental Protection Agency on April 5, 1983. The notice of availability and a public hearing announcement were published on April 15, 1983, in the *Federal Register*. This notice announced a 90-day comment period commencing on April 15 and ending July 15, 1983.

Over 1,000 copies of the draft EIS were mailed to federal, state and local governments, private groups and organizations and individuals for review and comment. News releases provided information on how to obtain copies of the draft. Formal public hearings were held in Lovell, Wyoming on May 31, 1983, and Billings, Montana, on June 1, 1983. A BLM official presided over each panel. A court recorder recorded the hearings verbatim. A total of 49 comment letters were received during the 90-day comment period.

A total of 65 interested citizens, federal and state agencies, and private organizations submitted comments on the Draft Environmental Impact Statement (DEIS) on the Billings Resource Management Plan (RMP). Sixteen of the comments were oral statements while 49 were written. Of the 65 total, 16 individuals submitted 29 comments, which included information and opinions on the preliminary wilderness recommendations in the DEIS. Five of the sixteen oral statements addressed the wilderness issue. Nineteen of the letters addressed the wilderness issue or were from governmental entities. An additional letter (No. 109) is included for information purposes.

The Montana Governor's Task Force on Planning was provided with a field tour of the Pryor Mountain WSAs during June 1983.

A consultation meeting with representatives of the Governor's staff for the State of Montana was also held on September 8, 1983, in Helena, Montana. The purpose of this meeting was to inform these representatives of any changes in the final EIS and to assure consistency with state or local plans, policies or programs. In addition, comments where requested from other federal agencies, other state agencies, local governments, tribes, special interest groups, and individuals.

DISTRIBUTION LIST

The following agencies, interest groups and individuals were sent copies of the Billings RMP/DEIS and comments were requested. All responding agencies, plus those individuals and organizations who commented on wilderness related issues are identified with an asterisk.

Federal Agencies

Geological Survey*
U.S. Department of Commerce
Fish & Wildlife Service*
Forest Service
National Park Service*
Soil Conservation Service
Thirteenth Coast Guard District
Army Corps of Engineers*
Department of Transportation
Environmental Protection Agency*
Federal Aviation Administration
Federal Highway Administration
Bureau of Reclamation*
Federal Housing Administration
Library and Information Service
Missouri River Basin Commission
Bureau of Mines*
Advisory Council on Historic Preservation
Bonneville Power Administration

Montana & Wyoming State and Local Government

Governor Ted Schwinden*
Larry Budge
Department of Community Affairs
Department of Natural Resources & Conservation
Department of State Lands
Environmental Quality Council
Andrew Epple
George Freeman
Douglas Hart
Kim Kuzara
Montana Department of Fish, Wildlife & Parks
Montana Fish & Game Commission
Montana Historical Society*
James Neely
Office of B & BP
Wayne Van Voast
John Young
Wyoming State Planning Office, Cheyenne, Wyoming*

Local, State and Federal Government Elected Officials (as of October 1982)

L. M. Abner
Earl R. Adams
Alfred Bassett, Jr.
Honorable Max Baucus
R. E. Baumann
Chet Blaylock
Esther Bengtson
Oscar Biegel
Big Horn County Commissioners
Cecil Blackler
Hubert Brabec
William S. Brinkel
James H. "Jim" Burnett
Carbon County Commissioners
Chuck Cozzens
Bruce Crippen
Robert Dozier
O. S. Ellis
P. R. Esp
Harrison G. Fagg
William Fox
Tom Hager
Tom Hannah
Mark Haynes
Larry P. Herman
Herb Huennekens
Raymond Jeffers
Thomas F. Keating
Gerald R. Kessler
Les Kitselman
Ronald Kotar
Curtis C. Kuehn
Charles Lane
Honorable Ron Marlenee
Roy W. McCaffree
Jean McLane
W. Harold McLauchlan
Honorable John Melcher
Dick Mercer
David A. O'Hara
Ole Oiestad
Earl Osse
W. R. Patte
Pete Plenty Hawk
Jim Rannalls
Ann "Pat" Regan
Ezra G. Rickman
Hershel M. Robbins
Jeff E. Roberts
Myron O. Skurdal
Wes Teague
J. J. Thoreson
Tom Towe
Joseph Vicars
Wheatland County Commissioners
Honorable Pat Williams
J. Melvin "Mel" Williams
David E. Wilson
Calvin Winslow
Yellowstone County Commissioners

Organizations and Individuals

Ada County Fish & Game League
American Fisheries Society
American Horse Protection Assn.*
Billings Motorcycle Club
Billings Rod & Gun Club
Bronco Exploration
Leland Cade
Center for Balanced Transportation
Crow Indian Tribe
Custer County Rod & Gun Club
Defenders of Wildlife*
Environmental Information Center
Fergus County Farm Bureau
Fisheries Society
Friends of the Earth
Humane Society of the U.S.
Clarence Hunsucker
International Society for the Protection of Mustangs & Burros
Izaak Walton League of America
Peter Jackson
Laurel Rod & Gun Club
Lewistown Chamber of Commerce
Lewistown Rod & Gun Club
Magic City Motorcycle Club
Minerals Exploration Coalition*
Montana Audubon Council*
Montana Automobile Association
Montana Chamber of Commerce
Montana Farm Bureau
Montana Farmers Union
Montana Geological Society
Montana Power Company
Montana Public Lands Council (Chuck Hitch)*
Montana Stockgrowers Association
Montana Wilderness Association*
Montana Woolgrowers
Montana Wildlife Federation
Montana Woolgrowers
National Audubon Society
National Council of Public Land Users
National Wildlife Federation
Natural Resources Defense Council, Inc.
Nature and Wildlife Society
Donald M. Nettleton, Burlington Northern Railroad, Inc.
Nevada Outdoor Rec. Assoc., Inc.
Northern Natural Gas Ex. Div.
Northern Plains Resource Council
Old West Regional Commission
Pacific Legal Foundation
Public Lands Council
Rainmaker Motorcycle Club
Rimrock 4 by 4's
Rough Riders, Inc.
Hope Ryden*
Sierra Club*
Society for Range Management
Southeastern Montana Stockgrowers Assn.
State Grazing District Assn.
State Soil Conservation Committee
Mike Stude
TAP
The Spoke Shop
The Wilderness Society
The Wildlife Society
Trout Unlimited
Wild Horse Organized Assistance
Wild Horse Research Farm
Wildlife Management Institute
Wildlife Society
Yellowstone Snowmobilers Assn.
Yellowstone Valley Audubon Society*
Edward D. Zarytkiewicz

DISTRIBUTION OF RMP/FEIS

The RMP-FEIS was sent to the RMP-DEIS mailing list, updated to include:

BIA-Crow Agency
Musselshell County Commissioners
Big Horn County Commissioners
Crow Tribal Council
Northern Cheyenne Tribal Council
Western Energy Company
Western Environmental Trade Association

The RMP/FEIS was sent to the BIA at Crow Agency. Subsequently (8/87), letters were sent to the Crow Tribal Council and the Northern Cheyenne Tribal Council requesting comments on Wilderness proposals. No responses have been received.

DISTRIBUTION OF THIS FEIS

This Wilderness FEIS is being sent to the updated RMP-FEIS mailing list, which includes all entities that testified or submitted letters relating to the wilderness issue.

COMMENTS AND RESPONSES

All comments on the Billings RMP/DEIS were reviewed and considered in the preparation of this document. Due to the length of the transcripts and comment letters, only letters from governmental entities and those letters and portions of the transcripts with wilderness-related comments have been reprinted in this document. Those five speakers (public hearing) are numbered 1 through 5 and their wilderness related comments and responses are numbered 1 through 14. The twenty letters from government entities or those containing wilderness related comments are numbered 101 through 120 and follow the oral testimony and responses.

Speaker No.	Name	Meeting Location and Date
1	James Peters	Lovell, WY, May 31
2	Hope Ryden	Lovell, WY, May 31
3	Georgia Frazier	Billings, MT, June 1
4	Daryle Murphy	Billings, MT, June 1
5	Ed Dobson	Billings, MT, June 1

Letter No.	Name	From
101	Richard A. Strait	National Park Service, Denver, CO
102	William G. Binnewies	National Park Service, Fort Smith, MT
103	John G. Wood	Fish and Wildlife Service, Billings, MT
104	D'Arcy P. Banister	Bureau of Mines, Spokane, WA
105	Richard D. Gorton	Corps of Engineers, Omaha, NE
106	Eley P. Denson	Bureau of Reclamation, Billings, MT
107	James F. Devine	Geological Survey, Reston, VA
108	John G. Welles	U.S. Environmental Protection Agency, Denver, CO
109	Fish & Wildlife Service	Helena, MT
110	Gov. Ted Schwinden	State of Montana, Helena, MT
111	Dick Hartman	State of Wyoming, Cheyenne, WY
112	Marcella Sherfy	Montana Historical Society, Helena, MT
113	Russell J. Gaspar	American Horse Protection Association, Washington, DC
114	Chuck E. Hitch	Montana Public Lands Council, Billings, MT
115	Bill Cunningham	Montana Wilderness Association, Billings, MT
116	James Phelps	Montana Audubon Council, Billings, MT
117	Hank Fischer	Defenders of Wildlife, Missoula, MT
118	Daryle R. Murphy	Sierra Club, Billings, MT
119	John D. Wells	Minerals Exploration Coalition, Denver, CO
120	Hope Ryden	New York, NY

ORAL TESTIMONY AND RESPONSES

Speaker No. 1 — James Peters — National Park Service, Lovell, Wyoming

Comment No. 1 — We wonder how the BLM would maintain existing wilderness values, while confining present use and management somewhere in the plan. Somewhere this statement was made.

Response No. 1— The first paragraph on page 24 of the draft RMP refers to maintaining wilderness objectives under the Existing Management Alternative. Under the proposed actions presented in this document, wilderness values would be maintained for Pryor Mountain, Burnt Timber Canyon and Big Horn Tack-On, but not for Twin Coulee.

Speaker No. 2 — Hope Ryden — New York, N.Y.

Comment No. 2 — I'm very concerned with the wilderness designation. On page 116 the draft refers to long-term significant impacts in the event the Pryor Mountain is in fact designated wilderness, as BLM has recommended. Well, I would like to know what are these impacts and how they affect the wild horse proposals.

Comment No. 3 — The draft refers to the designation as reducing management options. Well, what options, and what does their elimination mean? This hasn't been spelled out. So I really would like somebody to respond to those questions.

Response No. 2 & 3 — A reference to long-term significant impacts on wild horse management as a result of wilderness designation was made in the third paragraph on page 160 of the Billings RMP/DEIS. This reference to impacts was overstated. The proposed actions presented in this document recommend wilderness designation for the Pryor Mountain, Burnt Timber Canyon, and Big Horn Tack-On WSAs. The only potential impacts on wild horse management would be the location and type of new range developments which might be allowed. Although facilities would have to be installed so as not to impair wilderness characteristics, they would still be allowed. The proposed action for these three WSAs would ensure continuation of a healthy wild horse herd, which BLM construes as a major supplemental value of wilderness. In addition, wilderness designation would prohibit any major surface disturbing activity (none is projected) that could adversely impact wild horses.

Comment No. 4 — I contacted a number of congressmen and senators to get an opinion on the compatibility of the wild horse refuge with a wilderness designation and I got a very definitive letter from Senator Scoop Jackson, who said that there is no incompatibility. As far as he's concerned, this is a wild horse refuge and if anybody at any date suggests that the wilderness designation alters that, to be sure to let him know.

Response No. 4 — The BLM agrees that wild horse management in conjunction with wilderness management is compatible and that the two management themes will not conflict with one another.

Speaker No. 3 — Georgia Frazier — Yellowstone Valley Audubon Society, Billings, Montana

Comment No. 5 — The first thing I want to comment on is the wilderness study units in the EIS, the draft environmental impact statement. We recommend the Big Horn Tack-On transfers to the jurisdiction of the National Park Service. It is adjacent to Big Horn Canyon National Recreation Area and is divided from the Pryor Mountain Wild Horse Range as well as the proposed Pryor Mountain Wilderness by a rough semblance of a road on its west border.

Response No. 5 — The BLM is not considering a jurisdictional transfer of the southern portion of the Big Horn Tack-On to the National Park Service. Such a transfer has not been proposed to us by the National Park Service. This area is an integral portion of the designated Pryor Mountain Wild Horse Range and the BLM is the lead agency for wild horse management in the Pryor Mountains. As such, it is reasonable for the area to be retained under BLM administration. The road which forms the

western boundary of the Big Horn Tack-On was identified during inventory with full public involvement. It is essential to the future management of the horse range by providing administrative access to artificial water sources and wild horse traps which require periodic maintenance.

Comment No. 6 — We recommend the Twin Coulee, (MT-067-212), Pryor Mountain (MT-067-206), and Burnt Timber Canyon (MT-067-205) for wilderness. The recommendations for Twin Coulee and Pryor Mountain follow the "high level management alternative." Our position is for 3,430 acres of Burnt Timber Canyon, following the "preferred level" alternative. Twin Coulee is on the southeast flank of the Snowy Mountains, in Golden Valley County, with attractive scenery, interesting geology, and other supplemental values. The adjacent Forest Service lands are being studied under Rare II for wilderness. As is known, this may change, but we recommend the BLM study areas for wilderness as outlined above as long as the options are likely to remain open.

Response No. 6 — The proposed actions for Pryor Mountain (16,927 acres), Burnt Timber Canyon (3,430 acres), and Big Horn Tack-On (2,550 acres) are for wilderness designation. Twin Coulee WSA (6,870 acres) is being recomended for nonwilderness. The commercial timber values in the Twin Coulee WSA outweigh the marginal wilderness values. In addition, the majority of the area is heavily timbered and the primary recreational use areas are confined to a few open ridge tops and canyon areas. The adjacent National Forest lands are not being recommended for wilderness designation and the relatively small size of the areas likely to be used by recreationists would offer marginal wilderness opportunities. These recommendations will be transmitted to the Secretary of the Interior, the President, and Congress.

Speaker No. 4 — Daryle Murphy — The Sierra Club and Montana Wilderness Association, Billings, Montana

Comment No. 7 — I would like to express the support of myself and the Montana Wilderness Association and the Yellowstone Basin Group of the Sierra Club for designation of the Twin Coulees area as wilderness. I have been in communication with people from Lewistown from the Twin Coulee area and also with some of the people in the Montana Wilderness Association who specifically asked me to support this as wilderness. As many of you may know, it is contiguous to a National Forest Service Lewis and Clark National Forest wilderness study area which was not recommended for wilderness in Rare II. There is also substantial support for designation of that area as wilderness, despite the previous recommendation.

Response No. 7 — The commercial timber values in the Twin Coulee WSA outweigh the marginal wilderness values. In addition, the majority of the area is heavily timbered and the primary recreational use areas are confined to a few open ridge tops and canyon areas. The adjacent National Forest lands are not being recommended for wilderness designation and the relatively small size of the areas likely to be used by recreationists would offer marginal wilderness opportunities.

Comment No. 8 — The wilderness in the Pryor Mountains, there is the Pryor Mountain Wilderness Area and the Burnt Timber Canyon Wilderness Area, both of which are recommended in the draft for wilderness designation. I would like to support that with consideration given to closing the Tillotson [known as Tillett] Ridge Road, which was originally recommended in 1973 in joint land use recommendations of the BLM and Custer National Forest. In my conversations with the BLM people in the Billings Resource Area, the primary reason that is given for leaving that particular road open is for administrative purposes having to do with management of the wild horse herd. Apparently there is a horse trap on — near adjacent to that road.

Response No. 8 — The Tillett Ridge Road is essential for wild horse management purposes and also provides recreational access. The joint land use decisions of the Forest Service and BLM dated May 23, 1974, states "Vehicle access will be limited to the designated system of roads. Within the Pryor Mountain Wild Horse Range, vehicle access will be limited to the Tillett Ridge Road and the Sykes Ridge Road. All other roads will be closed."

Comment No. 9 — Back to the additional area, which is not recommended for wilderness in the EIS, is the Big Horn Tack-On. The southern portion of it which Georgia mentioned should be considered for

an addition to the Bighorn Canyon National Recreation Area. I would support that. I think it is an excellent idea. I suspect the Bighorn Canyon Recreation Area people would support that.

Response No. 9 — This suggestion was considered in the Billings RMP/FEIS. The southern roadless area of the Big Horn Tack-On Area containing 2,550 acres will be recommended suitable, while the northern roadless area, consisting of 2,000 acres, was dropped from further study consideration in the Record of Decision for the Billings RMP. Wilderness designation of the 2,550 acres is the proposed action in this document.

Speaker No. 12 — Ed Dobson — Billings, Montana

Comment No. 10 — Now, the wilderness, I'd like to see all the areas you have identified as wilderness study areas go into the system. I use these areas. I like them. In a way it is good to have areas where people can go and not have to inquire and not be bothering somebody else to go on their place.

Response No. 10 — Thank you for your comment

Comment No. 11 — In the case of some of the wilderness study area we have grazing permits on it. It is a good idea to know what kind of problems you might get into if you get out there in somebody's permit area and deal with that.

Response No. 11 — Of the areas recommended as suitable for wilderness designation, only a small portion (655 acres) of Burnt Timber Canyon contains grazing permits. A portion of Twin Coulee contains commercial livestock grazing. The leased area encompasses 600 acres and furnishes 69 AUMs near the eastern boundary of the wilderness study area. As noted in this document, the existence of grazing permits in these small portions of the WSAs are not considered a significant issue.

Comment No. 12 — It is also good to have land set aside in a way we can keep it like it is. I think the only way we will get to see these lands stay as they are is to put them into the wilderness system. For example, up there in Twin Coulee. One of the ideas why we can't put that in the wilderness is because we have some oil shale leases up there. Might have some mining of oil shale.

We seen what happened down in Colorado where Exxon and some other companies pouring millions and millions into oil shale development, and then suddenly the price of crude goes down and pulls the rug out from under them and they abandon the whole project down there. Turned thousands of people out into the street. No jobs.

I think it is folly to simply write off an area for its wilderness potential just because you have some oil shale development up there in the future. Especially when the Wilderness Act itself says you can mine. You can mine in wilderness areas.

Now, I know a lot of people don't like that about the idea, gee whiz, it is wilderness, how come you can mine in there? But that's the way the Act reads. You can do that. That may be a little bit more difficult for you to develop the claim in a situation where it is wilderness, but the fact is if the value of the resource is there, money will be there, the money will be there to develop that. And maybe it is better off for all of us to have enough restriction on the development when it does come by having it in the wilderness. They are going to do it anyway.

Response No. 12 — While the potential for oil shale reserves was a consideration for the nonsuitable recommendation for Twin Coulee, it was not the sole reason. The resource value of Twin Coulee for small-scale commercial logging, BLM's determination that the area does not contain outstanding recreational opportunities and the fact that the area would not add diversity or uniqueness to the National Wilderness System were all considerations in the recommendation.

The BLM, by law, must reexamine all resource values in WSAs, since development of these resources may conflict with wilderness designation. Mineral resource potential must be evaluated to determine what values might be foregone should an area be designated wilderness. Heath "oil shales" may be found in the vicinity of the Twin Coulee WSA; they do not lie within the WSA. The Twin Coulee WSA

would, if designated as wilderness, be closed to mineral development. The only mining claims located within that WSA were located after passage of FLPMA, and therefore, mining claimants may not impair wilderness suitability.

Mining ventures have always been sensitive to market values and costs of mining. A recent report by the Montana Bureau of Mines and Geology states that mining the "oil shale" bed of the Heath Formation is presently not profitable, when mineral and syncrude values are weighed against probable mining costs.

Comment No. 13 — I agree with the wilderness designation for Pryors, Burnt Timber Canyon. I want to encourage you to go ahead. I think the idea, if you have a horse trap in there that you are worried about, you can go ahead under the management options, not only the agency can use motorized access in a wilderness area, but under certain conditions, a permittee can use motorized access in a wilderness area as well. There is no problem with that under the right conditions. It can be done. So we got to deal with this on a case by case basis as well.

The Tillett Ridge Road is essential for wild horse management purposes and also provides recreational access. The joint land use decisions of the Forest Service and BLM dated May 23, 1974, states "Vehicle access will be limited to the designated system of roads. Within the PMWHR, vehicle access will be limited to the Tillett Ridge Road and the Sykes Ridge Road. All other roads will be closed." This is consistent with the proposed action. Only a small portion of Burnt Timber Canyon is permitted for grazing and no range projects are proposed in the permitted area.

Comment No. 14 — I would like to see the Big Horn Tack-On go into the wilderness. If it improves the management to have it go into the park, then let's take a look at that, but I don't mind to see it maintained in the BLM if it goes into wilderness. It is something that should be looked at in greater depth.

Response No. 14 — This suggestion was considered in the Billings RMP/FEIS. The southern roadless area of the Big Horn Tack-On Area containing 2,550 acres will be recommended suitable, while the northern roadless area, consisting of 2,000 acres, was dropped from further study consideration in the Record of Decision for the Billings RMP. Wilderness designation of the 2,550 acres is the proposed action in this document.

101-1

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO:
L7617 (RMR-PC)

BILLINGS RA
JUL 13 '83
USDI BLM
AM___ RANGE___ MIN___
RES. 2 (OFS)___ REC___
RES. 1___ LANDS___
ENV. ED___ WLDLF___
ADM___ FILE___ ACTION___
PLAN ___ ___

JUL 8 1983

Memorandum

To: Project Manager, Billings Resource Area, Bureau of Land Management, Billings, Montana

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Review of Draft Environmental Impact Statement and Resource Management Plan for Billings Resource Area, Montana (DES 83/17)

The National Park Service (NPS) has reviewed the subject document prepared by the Bureau of Land Management (BLM) and has the following comments, particularly concerning the proposal as it may affect the Bighorn Canyon National Recreation Area, National Natural Landmark sites, and the Yellowstone River.

A We continue to have questions about the BLM policy of differing recommendations for wilderness or non-wilderness designations under different alternatives. The proposal for wilderness designation for all four wilderness study areas (WSA's) in the Billings Resource Area under the High Level Management Alternative is contradicted by the proposals for recommending non-wilderness designation for all or parts of the WSA's under the other alternatives. This again appears to be a strategy of tailoring recommendations for designation of WSA's around a particular management alternative, rather than determining the suitability or non-suitability of the WSA's and designing management strategies around them. We believe the latter to be a more prudent course of action which would more effectively determine which WSA's are suitable for wilderness designation.

B In that same light, we must question the rationale behind the recommendation that the Big Horn Tack-On WSA not be designated as wilderness under the Preferred Level Management Alternative. Page 162 states that non-wilderness designation "would allow the development of other resources which could significantly impact visual resources over the long term." We would be interested in knowing what "other resources" this statement refers to, since page 145 mentions no mining claims for this WSA and indicates that "mineral potential is unknown and suspected to be low." Further, if there is a risk of significant visual impacts, which seems doubtful, we would prefer not to see such impacts introduced into an area where they would likely have adverse effects on both Bighorn Canyon National Recreation Area and the Pryor Mountain WSA.

LETTERS AND RESPONSES

Letter No. 101 — Richard A. Strait, National Park Service, Denver, Colorado

Response No. 101A - The BLM Wildernesss Study Policy requires that both an all wilderness and a no wilderness alternative be analyzed. This array of alternatives was analyzed under various themes in the Billings RMP/DEIS and RMP/FEIS.

Also, the RMP process does not represent the entire suitability study process. The Director will make a recommendation of suitability or nonsuitability to the Secretary based on the RMP and other documents.

Response No. 101B — To address this concern, a partial wilderness alternative was analyzed in the Billings RMP/FEIS. That alternative analyzed the southern roadless area (2,550 acres) as wilderness and the northern roadless area (2,000 acres) as no wilderness.

The southern roadless area (2,550 acres) of the original Big Horn Tack-On Wilderness Study Area (WSA) (4,550 acres) provides a 9-mile common boundary with the NPS Bighorn Canyon wilderness proposal. It is the upper watershed for much of NPS Big Horn Canyon Wilderness Study Area. The contiguity in association with the BLM Pryor Mountain WSA is important to the potential wilderness management of the general area and the total area provides outstanding wilderness opportunities.

The northern roadless area (2,000 acres) of the original Big Horn Tack-On WSA (4,550 acres) is somewhat isolated from the other Pryor Mountain proposed wilderness areas by state and private lands. The nonpublic lands are currently experiencing heavy motorized recreational use during the spring, summer and fall months. This portion has approximately 1/2 mile of common boundary with the NPS Big Horn Canyon wilderness proposal, but contains watersheds generally separate from the NPS proposal. A large portion of this area consists of a steep mountain face accessible from and within view of the U.S. Forest Service Dryhead Overlook. Because of the boundary configuration and adjacent land uses, this area would not contribute appreciably to

101-2

B cont.

We are also puzzled about the statement on page 131 that the Big Horn Tack-On WSA "contains wilderness values, but the location of portions of the unit near the Bighorn Canyon National Recreation Area reduces overall wilderness quality because of outside sights and sounds." Since the Bighorn Canyon National Recreation Area has been recommended for wilderness designation, as noted on page 98, we do not believe that "outside sights and sounds" would constitute a significant threat to the wilderness values of the Big Horn Tack-On WSA. As a matter of fact, we believe that without the Big Horn Tack-On WSA, the NPS wilderness proposal would be greatly diminished. Without the WSA, all that would remain would be a very narrow strip of land which by itself meets only the minimum requirements as a wilderness area. In this regard, since the Pryor Mountain WSA and most of the Burnt Timber Canyon WSA are recommended as suitable for wilderness under the Preferred Level Management Alternative, we fail to see the logic in separating them from each other or from the Big Horn Tack-On WSA. By considering these three WSA's as one, we believe that an excellent case can be made for recommending them as suitable for wilderness, thus creating a contiguous unit with the Bighorn Canyon National Recreation Area and the Lost Water Canyon WSA in Custer National Forest. Separation of the Big Horn Tack-On WSA and recommending against its designation as wilderness appears to us to create unnecessary administrative and management problems, especially in light of its configuration and location between two WSA's which are both recommended for wilderness designation.

Our second major concern is with the proposed wild horse surplusing procedure. Page 6, section E, states that "anticipated budget allocations will not permit a continuous and timely excess program". Page 35, under the preferred alternatives section, mentions that the 121-head figure is viewed as a "median" figure to be maintained over the short term (8 years). Literally interpreted, this infers that the herd could be allowed to build to a size considerably in excess of the 121 head for a few years as long as it did not exceed 121 animals over an 8-year average. It is our opinion that allowing the Dryhead herd to exceed even the 31-head figure it currently supports for a few years would subject the already overused range to an unacceptable level of abuse. The accompanying reduction, in order to achieve the 121-head 8-year average, would have to be equally severe. In other words, we feel a yearly horse excessing program is essential. The horse range lands located within Bighorn Canyon National Recreation Area are subordinate to recreational needs, and range management must be intensive in order to maintain recreational values.

On page 24, under the low level management alternative, in the second paragraph under Wild Horse Management and Recommendations, you stated that 7,696 acres including the Sorenson extension would not be available for wild horse use. We believe that the 7,696 acre figure should be rewritten to include all NPS lands within the horse range. We suggest

the overall wilderness management of the remainder of the Pryor Mountain study WSAs.

Wilderness designation of the 2,550 acre southern roadless area was selected in the Record of Decision and is analyzed in this FEIS. Under the authority of Section 202 of the Federal Land Policy and Management Act, the northern roadless area was dropped from further wilderness study.

rewording to state that under a policy of totally unregulated wild horse use, no NPS lands could be included because that use by its destructive nature would be contrary to our management mandates and could not be allowed.

Thirdly, in reference to oil and gas leasing, it appears that the horse range may not be adequately protected from leasable and locatable mineral development. Any related activity of this sort would seriously detract from the aesthetic properties essential in a horse sanctuary. NPS lands lying within the horse range are closed to mineral entry and disposition under the U.S. Mining Laws to include the mineral leasing acts. Page 37, under Land Tenure Adjustment, the Resource Objectives and Recommendations section, identifies 50 acres of land to be withdrawn from mineral leasing. No mention is made of National Natural Landmark areas such as the Bridger Fossil Area or the Crooked Creek Natural Area. Would these and other sensitive cultural sites receive protection from surface degradation linked to various forms of development and use? This does not appear to be the case from our review.

The following is a complete list of National Natural Landmark (NNL) sites within the Billings Resource Management Area.

Big Horn County (3)	Status
-Cloverly Formation Site	Designated (11/73)
-Devils Canyon and Karst Features of the Northern Big Horn Mountains (Montana and Wyoming)	Potential
-Crooked Creek Natural Area	Designated (7/68)

Carbon County (8)	Status
-Bridger Fossil Area	Designated (11/73)
-Big Ice Cave	Potential
-Crooked Creek Karst Canyon	Potential
-Foster Gulch Coal	Potential
-Granite Peak Glaciers (Park Stillwater)	Potential
-Pryor Mountain Limestone Cuestas	Potential
-Red Dome	Potential
-Red Valley, Southern Pryor Mountains	Potential

Stillwater County (1)	Status
-Granite Peak Glaciers (Carbon, Park)	Potential

Sweetgrass County (2)	Status
-Crazy Peak--Big Timber Creek	Potential
-Stillwater Ultramafic Complex	Potential

C Project planning and implementation of a selected alternative should consider these sites and avoid impacts which would adversely affect the ecological and geological features of these areas. Further information can be obtained from Ms. Carole Madison, National Park Service, Rocky Mountain Region, P.O. Box 25287, Denver, Colorado 80225 (phone: 303-234-6443).

A statement relating to air quality on page 53 is in error. Bighorn Canyon National Recreation Area is classified as a class II clean air area under the Prevention of Significant Deterioration (PSD) requirements of the Clean Air Act.

The subject draft should state that the Yellowstone River from the Yellowstone National Park boundary to Pompey's Pillar is a stream segment which is subject to Section 5(d) of the Wild and Scenic Rivers Act (P.L. 90-542). This factor should be considered in any Federal planning report which addresses a 5(d) river segment.

Finally, a very minor point, but your land status map shows a 160-acre parcel formerly the Ruth-Aldrich property as privately owned. This parcel was purchased by the NPS several years ago.

We thank you for the opportunity to review and comment on your plan. It is a comprehensive document and should serve as a useful guide for the future management of the natural resources under your care.

Richard A. Strait

Response No. 101C — The BLM appreciates receiving the complete list of designated and potential National Natural Landmark sites within the Billings Resource Area, including sites which occur on BLM administered lands.

Under the Billings RMP/FEIS, the entire Crooked Creek National Natural Landmark (NNL) is to be withdrawn from mineral entry. In addition, the proposed action of wilderness designation of Pryor Mountain WSA would protect and preserve 160 acres of the NNL.

102-1

United States Department of the Interior

NATIONAL PARK SERVICE
BIGHORN CANYON NATIONAL RECREATION AREA
P.O. BOX 458
FORT SMITH, MONTANA 59035

IN REPLY REFER TO:

A3815

May 27, 1983

RECEIVED
BILLINGS RA
MAY 31 '83
USDI BLM
AM___ RANGE___ MIN___
RES. T (OPS) ___ REC___
RES. T ___ LANDS___
ENV. ED___ WILD___
ADM___ FILE___ ACTION___
PLAN ___ ___

Jerry Jack, Area Manager
Billings Resource Area
Bureau of Land Management
810 East Main
Billings, Montana 59105

Dear Jerry:

Having reviewed the Billings Resource Area Resource Management Plan, we find our comments focus primarily on the wild horse range management and wilderness issues.

A We strongly recommend that you reconsider including the narrow strip of land bordering the NPS proposed wilderness known as the Big Horn Tack On in your wilderness recommendation. We feel that without the Big Horn Tack On our parcel's value is greatly diminished since all that would remain would be a very narrow strip of land which by itself meets only the minimum requirements as a wilderness area. The disjunct, northernmost part of the Big Horn Tack On which lies in sections 4, 5, 8, 9, and 10 of R95W, T8S, is not of as much concern to us. We feel that the wilderness area will be greatly enhanced as a unit if all BLM, USFS, and NPS proposals are kept intact.

Our second major concern is with your wild horse surplusing procedure. On page 6, section E, you state that "anticipated budget allocations will not permit a continuous and timely excess program". Then on page 35, under the preferred alternatives section, you mention that the 121 head figure is viewed as a "median" figure to be maintained over the short term (8 years). Literally interpretated, this infers that the herd could be allowed to build to a size considerably in excess of the 121 head for a few years as long as it did not exceed 121 animals over an 8-year average. It is our opinion that allowing the Dryhead herd to exceed even the 31 head figure it currently supports for a few years would subject the already overused range to an unacceptable level of abuse. The accompanying reduction, in order to achieve the 121 head 8-year average, would have to be equally severe. In other words, we feel a yearly horse excessing program is essential. The horse range lands located within Bighorn Canyon NRA are subordinate to recreational needs and range management must be intensive in order to maintain recreational values.

Year of the Visitor

Letter No. 102 — William G. Binnewies, National Park Service, Fort Smith, Montana

Response No. 102A — To address this concern, a partial wilderness alternative was analyzed in the Billings RMP/FEIS. That alternative analyzed the southern roadless area (2,550 acres) as wilderness and the northern roadless area (2,000 acres) as no wilderness.

The southern roadless area (2,550 acres) of the original Big Horn Tack-On Wilderness Study Area (WSA) (4,550 acres) provides a 9-mile common boundary with the NPS Bighorn Canyon wilderness proposal. It is the upper watershed for much of NPS Big Horn Canyon Wilderness Study Area. The contiguity in association with the BLM Pryor Mountain WSA is important to the potential wilderness management of the general area and the total area provides outstanding wilderness opportunities.

The northern roadless area (2,000 acres) of the original Big Horn Tack-On WSA (4,550 acres) is somewhat isolated from the other Pryor Mountain proposed wilderness areas by state and private lands. The nonpublic lands are currently experiencing heavy motorized recreational use during the spring, summer and fall months. This portion has approximately 1/2 mile of common boundary with the NPS Big Horn Canyon wilderness proposal, but contains watersheds generally separate from the NPS proposal. A large portion of this area consists of a steep mountain face accessible from and within view of the U.S. Forest Service Dryhead Overlook. Because of the boundary configuration and adjacent land uses, this area would not contribute appreciably to the overall wilderness management of the remainder of the Pryor Mountain study WSAs.

Wilderness designation of the 2,550 acre southern roadless area was selected in the Record of Decision and is analyzed in this FEIS. Under the authority of Section 202 of the Federal Land Policy and Management Act, the northern roadless area was dropped from further wilderness study.

On page 24, under the low level management alternative, in the second paragraph under Wild Horse Management and Recommendations, you stated that 7,696 acres including the Sorenson extension would not be available for wild horse use. We believe that the 7,696 acre figure should be rewritten to include all NPS lands within the horse range. We suggest rewording to state that under a policy of totally unregulated wild horse use, no NPS lands could be included because that use by it's destructive nature would be contrary to our management mandates and could not be allowed.

Thirdly, in reference to oil and gas leasing, it appears that the horse range may not be adequately protected from leasable and locatable mineral development. Any related activity of this sort would seriously detract from the aesthetic properties essential in a horse sanctuary. National Park Service lands lying within the horse range are closed to mineral entry and disposition under the U.S. Mining Laws to include the mineral leasing acts. On page 37, under Land Tenure Adjustment, the Resource Objectives and Recommendations section, you identify 50 acres of land to be withdrawn from mineral leasing. No mention is made of National Natural Landmark areas such as the Bridger Fossil Area or the Crooked Creek Natural Area. Would these and other sensitive cultural sites receive protection from surface degradation linked to various forms of development and use? This does not appear to be the case from our review. **B**

A statement relating to air quality on page 53 is in error. Bighorn Canyon NRA is classified as a class II clean air area under the Prevention of Significant Deterioration (PSD) requirements of the Clean Air Act.

Finally, a very minor point, but your land status map shows a 160 acre parcel formerly the Ruth-Aldrich property as privately owned. This parcel was purchased by the NPS several years ago.

We thank you for the opportunity to review and comment on your plan. It is a comprehensive document and should serve as a useful guide for the future management of the natural resources under your care.

Sincerely,

William G. Binnewies
Superintendent

Response No. 102B — Under the Billings RMP/FEIS, the entire Crooked Creek National Natural Landmark (NNL) is to be withdrawn from mineral entry. In addition, the proposed action of wilderness designation of Pryor Mountain WSA would protect and preserve 160 acres of the NNL.

103-1

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Federal Building, Room 3035
316 North 26th Street
Billings, Montana 59101-1396

RECEIVED
BILLINGS RA
JUL 19 '83
USDI BLM
AM___ RANGE___ MIN___
RES. T (OPS)___ REC___
RES. T___ LANDS___
ENV. ED___ WLDLF___
ADM___ FILE___ ACTION___
PLAN ___ ___

IN REPLY REFER TO:

ES

July 18, 1983

MEMORANDUM

TO: Billings RMP Project Manager, Bureau of Land Management, Billings Resource Area

FROM: Field Supervisor, USFWS, Billings, MT (ES)

FUBJECT: Review of Billings Resource Area RMP Draft Environmental Impact Statement

We have reviewed the subject statement and the following constitute the comments of the U.S. Fish nand Wildlife Service (FWS).

Endangered Species

We have examined the Billings Resource Area RMP for compliance with the Endangered Species Act (ESA), as amended, and have the following comments about the plan.

First, the list of endangered or threatened species discussed in the plan is accurate and the plants mentioned (pg. 71) as "under review for listing" are also correct.

A The ESA requires that "all Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to Section 4 of this Act (Section 7(a)(1))." The plan does not directly present a discussion of opportunities available to the BLM to enhance the survival or recovery of endangered species through positive programs aimed at these objectives.

101

Letter No. 103 — John G. Wood, Fish and Wildlife Service, Billings, Montana

Response No. 103A,B,C — Section 7 consultation for the RMP was completed in April 1984. For additional information, please refer to Chapters 2, 3, and 4 and letter No. 109.

103-2

A cont. We recommend that an effort be made during the Section 7 consultation process at establishing long-term goals for E/T species and their recovery, and identification or documentation of known important and manageable E/T habitats. With this base, the biological assessment can be structured to examine alternatives and their impacts (direct, indirect, and cumulative). The final step needed is the identification and use of various criteria which will be followed in resource use prescriptions to evaluate case-by-case or area-wide development actions in the future. We recommend that the BLM incorporate this information into the RMP/FEIS. By establishing these procedures and criteria now, we can all be certain that the RMP/DEIS is not likely to affect E/T species over the long-term. Moreover, funding and manpower resources can be identified in advance of development so that EAR's and other site review processes can be adequately accomplished.

For instance, we agree with attempts to provide greater recreational access to the Yellowstone River via land acquisition or exchange under the FLPMA and/or "Asset Management Program." We are interested in (an so might the public be) how this and improved range condition in woody floodplain zones may affect (positively or negatively) the endangered bald eagle which is known to use this resource area during breeding, wintering, and migration periods, or the endangered peregrine falcon that migrates through the area and was known to breed in the Billings Resource Area in the past.

B We note methods for monitoring for listed species are presented (Appendix 4.4) and monitoring for black-footed ferrets is discussed in the Alternatives Section. We realize that Instruction Memorandum No. MT-81-163-Change 1, states that areas will be managed for ferrets depending upon funding and manpower availability. We feel that the RMP, as a public document, is a suitable place to present, in a specific section on listed species, a brief discussion of these policies and the BLM's proposed efforts to identify, protect, or enhance habitat for listed species. Also, we believe that specific goals of this long term planning and resource allocation tool should include projections for listed species recovery.

C Finally, we recommend your continued efforts to consult with the Fish & Wildlife Service on RMP's as directed by ESA [Section 7(a)(2)]. Through this exercise, the BLM will:

1) develop a biological assessment of the impacts of various proposed actions and their effects on listed species, and be able to use the assessment in the decision making process (Record of Decision);

2) be able to document actions which were consciously considered and evaluated to enhance and protect habitat for listed species;

103-3

C cont.

3) be able to make the public more aware of the BLM's responsibilities mandated under ESA;

4) benefit from public support of those actions proposed in the RMP which are designed to meet the mandates of ESA.

If we can be of assistance to you in interpreting or discussing our comments on this plan, please don't hesitate to contact Mr. Wayne Brewster, Field Supervisor for Endangered Species in Montana at (406) 657-6059.

Wildlife Unsuitability Criteria

We have reviewed the application of the unsuitability criteria on the federal mineral estates within the Billings Resource Area. We believe that the rationale used in the draft document for application of the wildlife unsuitability criteria are not consistent with regulations pertaining to the management of federally owned coal (43 CFR 3400) and may result in unnecessary conflict or delays if leasing of these coal reserves is initiated in the future.

In general, we have found during past leasing efforts in the Powder River and Fort Union Coal Regions, that completion of four-six season wildlife inventories and application of unsuitability criteria well in advance of coal leasing activities minimizes the conflict between wildlife and coal development initiatives. Section 3461.3-1(a)(1) of the Federal Coal Management regulations state that, "Each of the unsuitability criteria shall be applied to all coal lands with development potential identified in the comprehensive land use plan or land use analysis. For areas where one or more unsuitability conditions are found and for which the authorized officer of the surface management agency could otherwise regard coal mining as a likely use, the exceptions and exemptions for each criterion may be applied."

Section 3461.3-1(b)(1) requires that, "The comprehensive land use plan or land use analysis shall include an indication of the adequacy and reliability of the data involved. Where either a criterion or exception (when under subsection (a) of this section the authorized officer decides that application of an exception is appropriate) cannot be applied during the land use planning process because of inadequate or unreliable data, the plan or analysis shall discuss the reasons therefor and disclose when activity planning, or, in the case of Criterion 19, prior to approval of a permit, the data needed to make an assessment with reasonable certainty would be generated".

Section 3461.3-1(2) states that..."No lease tract shall be analyzed in a final regional lease sale environmental impact statement prepared under Section 3420.4-5 of this title without significant data material to the application to the tract of each criterion described in Section 3461.1 of this title, except, where necessary, Criterion 19".

103-4

Section 3461.4-1(b) further emphasizes that..."The unsuitability criteria shall be initially applied either:

(1) During land use planning or the environmental assessment conducted for a specific lease application; or

(2) During land use planning under the provisions of Section 3420.1-4 of this title".

In summary, the regulations require that the unsuitability applications be based on adequate data and that they be completed prior to leasing of the federal coal.

Our analysis of the subject document did not identify whether or not adequate wildlife data for the coal field exists. Our understanding is that adequate data is not now available, but that on-going inventories are being completed and other inventories have been scheduled. We believe the document should discuss the status of the application of unsuitability criteria #9-15, including the adequacy of existing data and how future unsuitability applications will be conducted. We strongly encourage the Bureau to complete wildlife inventories and any necessary unsuitability applications well in advance of anticipated leasing activities. In this regard, we believe that the management recommendation to delay unsuitability criteria applications on areas that will be mined by underground methods until a site-specific mine plan is filed should be revised. Development of mine plans are expensive and time-consuming endeavors. To delay identifying to industry conflicts with planned surface facilities and wildlife until this stage will result in unnecessary conflicts between coal resource development and wildlife. Assembling adequate wildlife inventory data and application of unsuitability criteria should be completed as soon as industry expresses interest in an area and before any federal leases are issued.

Range Resources

Under the preferred management alternative, it is proposed to renovate 1700 acres of blue gramma-fringed sagewort dominated range and to improve 5,188 acres of existing crested wheatgrass pasture. We are very concerned with the trend toward development of crested wheatgrass pastures on public rangeland. This type of conversion results in monotypic vegetation, essentially useless to wildlife. Even if other species such as alfalfa or sweetclover are included in the mixture, they are generally eliminated over time due to the competitive nature of crested wheatgrass and the high livestock utilization rates typically used to maintain the "pasture" in palatable condition. We feel that these conversions (to crested wheatgrass) should not be undertaken on public lands that are managed for multiple use. If undertaken at all, they should be developed on private lands included in an AMP in order to defer use on the native public range until mid-June or early July. Thus, the livestock operator would still have the necessary spring grazing and the native public range would be maintained. We feel this is critically important because

103-5

of the negative wildlife implications resulting from the loss of native range in Montana due to "plow-out" in recent years. In the case of the 1700 acres that are to be renovated, we recommend that this acreage be seeded to native range grasses and forbs; for the 5,188 acres of existing crested wheatgrass pastures, we recommend that instead of improving them, that native grasses and forbs be reestablished in these areas.

We are also very concerned about the proposal to burn 21,520 acres of sagebrush. According to the draft, (p. 149) 18 percent of the federally-managed antelope winter range would be destroyed. In addition, 28 Sage grouse leks (25 percent of the known leks) and adjacent associated wintering and nesting areas could be affected. This appears to us to be an unacceptable risk to these wildlife species. In this matter, we are somewhat confused as to whether the guidelines outlined in Appendix 4.1 (page A-60) for sagebrush burning are to be followed. The guidance states that burning would be prescribed on areas where sagebrush canopy cover exceeds 40 percent. However, the main body of the draft states (p. 117 and elsewhere) that "Prescribed burning of dense (25 percent canopy) big sagebrush will greatly reduce canopy of sagebrush." If only areas exceeding 40 percent canopy coverage are burned, would the total acreage treated be substantially less than 21,000 acres?

Because there seems to be significant wildlife impacts that could result from burning this sagebrush, we feel the activity should only be undertaken after a detailed Habitat Management Plan and Environmental Analysis is developed for the area to be burned. The main reason for the proposed treatment is to provide additional forage for livestock, but there is sufficient reason to believe that if the burn is conducted after meaningful wildlife studies have been completed, potential impacts to wildlife could be reduced substantially. Of course the studies might show that the impacts could not be mitigated and if so we would recommend that the sagebrush burning be forgone.

Riparian Habitat

As you know, the BLM, at the national level, has recognized the importance of riparian-wetland habitat, and special emphasis has been given to the protection and enhancement of these areas, in terms of general policy. On February 5, 1980, the BLM published in the Federal Register (Volume 45, No. 25, pages 7889-7895), Final Guidelines; Wetlands-Riparian Area Protection and Management; Policy and Protection Procedures. Therein it is stated that, "Riparian areas which presently or potentially support broad-leaf vegetation in arid and semi-arid ecosystems are of special management concern" (emphasis added). One of the stated objectives is to, "implement a management system to protect, maintain, and enhance all wetland-riparian areas administered by BLM" (emphasis added). The guidelines further state that BLM policy will be to, "Avoid the long and short-term adverse impacts associated with the distribution, loss, or degradation of wetland-riparian areas"...and, "Preserve and enhance the natural and beneficial values of wetland-riparian areas which may include constraining or excluding those uses that cause significant, long-term ecological damage."

103-6

Having reviewed the Billings RMP DEIS, we were unable to determine: 1) how much woody floodplain zone exists in the Resource Area; 2) what the existing condition is of the 41 miles of woody floodplain zone in the "I" category allotments, nor 3) whether there are any wetlands in the Resource Area. Although the draft states (p. 47) that, "Ecological condition on 80% of 41 miles of woody floodplain zone would improve or be maintained at good and excellent condition" we have no way of determining what the relevance of your committment is. For example, if 80% is already in good or excellent condition, then in essence nothing would be done to improve existing habitat in fair or poor condition. If additional woody floodplain zones exist in the Resource Area in the "M" and "C" categories, we feel that an appropriate goal for these areas would also be to attain 80% or more in good to excellent condition. Similar commitments should be made for protecting wetland habitats.

During preparation of the Final EIS, we feel more attention should be given to wetland-riparian needs, especially regarding the time over which protective measures are to be implemented. Inasmuch as it could take 25 years to attain your proposed goals and these habitats are so important to wildlife, some additional measures seem warranted in the interim. For example, 25% of the existing woody floodplains could be fenced over the short-term (8 years) to insure that some of these areas improve quickly. This is especially important because the responses of woody habitat to intensive grazing management are not yet fully known. It is possible that even with close monitoring, the desired goals could not be reached with grazing management alone.

Land Tenure

On the issue of land tenure adjustments, we would like to request that you implement a goal of utilizing exchanges as the primary means of disposal rather than sales. Outright sales of public lands could have severe consequences upon the wildlife values thereon and the public's use thereof. It is especially important in the Billings Resource Area to maintain as much land in public ownership as possible to provide areas for recreation for the large and growing population in this region of Montana. Furthermore, we encourage you to pursure, on a priority basis, providing access to these public lands where such access does not now exist.

Livestock Grazing

On the issue of grazing, we found almost no details in the draft of how grazing will be managed for the benefit of wildlife. The inference made is that bettering the range condition will increase wildlife benefits. Although we too believe that wildlife can benefit from bettering the range condition, we feel that other issues must also be considered to determine whether wildlife resources will receive any net benefits. Often times the range improvements (water, fencing, grazing systems) associated with intensive management have substantial negative impacts. For example, one ramification of intensive management is the intrusion of livestock into areas that previously were not utilized because of

103-7

lack of water. After water developments are installed, livestock/wildlife competition will be spread over a broader area than was previously possible. Another impact is the often intensive utilization of forage in one or more of the pastures in a grazing system which leaves little or no residual cover for wildlife in these pastures. We feel these, as well as other pertinent issues, must be discussed in the final EIS before the assertion can be made that the proposed grazing management will benefit wildlife. As written, the draft does not discuss the negative implications of intensive grazing management on wildlife resources.

We feel that your goal to attain 80% of the range in the "I" category allotments in good or excellent condition is reasonable. However, we do feel that the "M" and "C" category allotments are being slighted; we realize that your resources are limited, but feel that something should be initiated to remedy the 67,866 acres (see Table 2.6) that will remain in fair or poor condition (exclusive of the Prior Mountain Wild Horse Range) in these category allotments, even if it is quite long range, say 50 years. Given this amount of time, a reduction of AUM's on these areas could improve the range condition without a large investment of time or large amounts of money in range improvements.

Regarding the long-term increase in forage (10,711 AUM's) that is estimated to occur as a result of improvement in range condition, we request that not all of these be allocated to livestock as is stated in the draft (see page 30). Instead, a more equitable arrangement would be to allocate 50% of the increase to livestock and 50% to wildlife.

Sincerely,

John G. Wood
Field Supervisor
Ecological Services

cc: District Manager, BLM, Lewistown, MT
State Director, BLM, Billings, MT
Robert Stewart, Department of the Interior, Denver, CO
Environmental Coordination, Washington D.C.
Regional Director, USFWS, Denver, CO

104-1

United States Department of the Interior

BUREAU OF MINES

WESTERN FIELD OPERATIONS CENTER
EAST 360 3RD AVENUE
SPOKANE, WASHINGTON 99202

June 24, 1983

ROUTING	INITIAL	DATE IN	DATE OUT
SD			
ASD			
Special			
EEO			
PA			
MR			
L & RR			
OMR			
ADM			
ACTION			
FILING			

Memorandum

To: Michael J. Penfold, State Director, Bureau of Land Management

From: D'Arcy P. Banister, Section of Mineral Involvement, U.S. Bureau of Mines, Western Field Operations Center

Subject: Review of Draft Environmental Impact Statement (DEIS) on the Resource Management Plan for the Billings Resource Area.

The DEIS appears to be a good, comprehensive evaluation of the mineral resources and the effects of the management alternatives on those resources in the Billings Resource Area.

We have noted a few minor problems or questions that should be brought to the attention of the authors.

1. The explanation with Figure 3.3 is the reverse of that on Figures 3.2, 3.4, and 3.5 as pertains to Federal Coal and Federal Subsurface Coal.

2. Should we assume the potential coal with a cutoff ratio of 20:1 on Figure 3.5 lies between the "High to moderate potential line" and the outcrop? A breif statement would clarify this question and remove the doubt.

3. What coal field is being discussed in paragraph 2 of page 63? The first and third paragraphs are about the Bear Creek Field, which is near the town of Red Lodge. Paragraph 3 infers paragraph 2 is discussing the Red Lodge Field.

104-2

4. Perhaps the second column in the gas production tabulation near the bottom of Table 3.1 should be labeled "cumulative" rather than 1981.

5. There are numerous references in the text on alternatives and in Chapter 3 on affected Enviromment that mention the Bull Mountain Coal field and two operating mines but this field is not one of the coal fields shown on maps pages 59 to 62. None of these statements suggest location of this field can be found on map 1 in the pocket at the back of the report. Also, these maps don't specifically identify these 2 small operating mines. Changes are needed to make it easier for the reader to follow the text. For example, in paragraph 1 of page 58, it would help to add the coal field name; in the fourth paragraph page 58 give coal beds and coal field of both small mines; adding section, township and range for each mine would also help; identifying coal bed and coal field in paragraph 6 concerning Consolidation Coal would help; adding section, township and range for the test pit might help the reader; etc.

The above comments are offered as technical assistance; a formal review, if desired, must be requested through Washington D.C. headquarters.

Mr. D'Arcy P. Banister, Supervisor
Mineral Involvement Section

Letter No. 104 — D'Arcy P. Banister, Bureau of Mines, Spokane, Washington

Response No. 104 — Thank you for your letter.

105

DEPARTMENT OF THE ARMY
OMAHA DISTRICT, CORPS OF ENGINEERS
6014 U.S. POST OFFICE AND COURTHOUSE
OMAHA, NEBRASKA 68102

REPLY TO ATTENTION OF:
Planning Division

May 5, 1983

OM ___ RM ___ OPR ___
ASSOC-DM ___ PA ___
ADMIN ___ RVR ___
P/EA ___ JUD ___
RECEIVED
USDI MAY 11 1983 BLM
LEWISTOWN, MONTANA

Mr. Glenn W. Freeman
District Manager
Lewistown District Office
Bureau of Land Management
Airport Road
Lewistown, Montana 59457

Dear Mr. Freeman:

We have reviewed your Draft Environmental Impact Statement, Resource Management Plan for the Billings Resource Area.

The report appears to be a well prepared, informative, and easy-to-read document. We have no comments to offer at this time. Thank you for allowing us the opportunity to review this document.

Sincerely,

Richard D. Gorton

Richard D. Gorton, Chief
Environmental Analysis Branch
Planning Division

RECEIVED
BILLINGS RA
MAY 12 '83
USDI BLM
AM___ RANGE___ MIN___
RES. T (OPS)___ REC___
RES. T ___ LANDS___
ENV. ED___ WLDLF___
ADM___ FILE___ ACTION___
PLAN ___

105

Letter No. 105 — Richard D. Gorton, Corps of Engineers, Omaha, Nebraska

Response No. 105 — Thank you for your letter.

106

United States Department of the Interior
BUREAU OF RECLAMATION
Upper Missouri Region
P.O. Box 2553
Billings, Montana 59103

IN REPLY REFER TO: UM-150

MAY 13 1983

Memorandum

To: State Director, Bureau of Land Management, Billings, Montana

From: Regional Environmental Affairs Officer, Bureau of Reclamation, Billings, Montana

Subject: Draft Environmental Impact Statement - Resource Management Plan - Billings Resource Area (DES 83-17)

Our review of the subject draft EIS indicates that the proposed resource management plan would have no effect on proposed or operating Reclamation projects. We have no further comments.

Thank you for the opportunity to review the draft impact statement.

cc: Commissioner, Attention: 150

RECEIVED
BILLINGS RA
JUN 3 '83
USDI BLM
AM___ RANGE___ MIN___
RES. T (OPS)___ REC___
RES. T ___ LANDS___
ENV. ED___ WLDLF___
ADM___ FILE___ ACTION___
PLAN ___ ___

106

Letter No. 106 — Eley P. Denson, Bureau of Reclamation, Billings, Montana

Response No. 106 — Thank you for your letter.

107

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA. 22092

JUN 2 3 1983

In Reply Refer To:
EGS-Mail Stop 423

Memorandum

To: Billings Resource Area Project Manager, Bureau of Land Management
Billings, Montana

From: Assistant Director for Engineering Geology

Subject: Review of draft environmental statement for resource management plan, Billings Resource Area, Montana

We have reviewed the draft statement as requested in the State Director's notice.

We have given only the most cursory review to the minerals data included in this report because the U.S. Geological Survey will prepare a comprehensive, detailed, joint report with the Bureau of Mines on the mineral resource potential of those areas recommended as suitable for wilderness, in accordance with Section 603 of FLPMA.

We have no other comment.

James F. Devine

RECEIVED
BILLINGS RA

JUN2 8'83

USDI		BLM
AM____	RANGE____	MIN____
RES. T (OFS)____		REC____
RES. T ____	LANDS____	
ENV. ED____	WLDLF____	
ADM____	FILE____	ACTION____
PLAN	____	____

107

Letter No. 107 — James F. Devine, Geological Survey, Reston, Virginia

Response No. 107 — Information from the joint mineral report (Bulletin No. 1723, 7/29/87) has been incorporated into this FEIS.

108

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295

DEPT. OF INTERIOR
BUR. OF LAND MANAGEMENT
1983 AUG -1 AM 11 06
BILLINGS, MONTANA

JUL 27 1983

Ref: 8M0

Mr. Michael J. Penfold
State Director
Bureau of Land Management
222 North 32nd Street
P.O. Box 30157
Billings, Montana 59107

Dear Mr. Penfold:

We have completed our review of your agency's draft environmental impact statement entitled "Resource Management Plan - Billings Resource Area." The draft EIS adequately addresses the environmental aspects of your proposed management plan over which EPA has authority. We support your watershed management proposal and believe it should help improve water quality in the study area.

According to EPA's rating system for draft impact statements, this EIS is rated LO-1 (lack of objections - sufficient information). If you have any questions, please contact Mr. Gene Taylor in our Montana Office, Helena, at FTS 585-5486.

Sincerely yours,

John G. Welles
Regional Administrator

Letter No. 108 — John G. Welles, U.S. Environmental Protection Agency, Denver, Colorado

Response No. 108 — Thank you for your letter.

109-1

UNITED STATES GOVERNMENT

Memorandum

M.02 6-1-84-F-013

TO : Area Manager, Bureau of Land Management
Billings Resource Area, Billings, MT

DATE: April 23, 1984

FROM : Field Supervisor, Endangered Species, Helena, MT (SE)

SUBJECT: Section 7 Consultation - Resource Management Plan - Billings Resource Area, Montana

This is the Fish and Wildlife Service's (FWS) biological opinion prepared in response to your March 22, 1984 request for formal consultation regarding the affects of the proposed resource management plan for Billings Resource Area on the endangered bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus), and the black-footed ferret (Mustela nigripes). The Fish and Wildlife Service has examined the proposed action in accordance with the Section 7 Interagency Cooperative Regulations (50 CFR 402, 43 FR 870) and the Endangered Species Act (ESA), as amended.

BIOLOGICAL OPINION

It is the Service's biological opinion that implementation of certain proposed actions within the issues of wildlife management and wilderness of the preferred alternative of the proposed resource management plan (PRMP) is likely to have beneficial affects on the bald eagle, peregrine falcon, and black-footed ferret. In addition, we concur with your "no affect" determination on the other proposed actions within the grazing management, wild horse management, timber management, coal leasing, oil and gas leasing, land tenure adjustment, classification, recreation access, off-road vehicle use, environmental education, wild horse interpretation, wildlife management, and wilderness issues.

PROJECT DESCRIPTION

The PRMP represents a framework for managing and allocating public resources under Bureau of Land Management (BLM) authority within the Billings Resource Area (BRA). This area includes lands managed by BLM in Wheatland, Golden Valley, Musselshell, Sweetgrass, Stillwater, Carbon, Yellowstone, and Bighorn Counties, Montana. Within the PRMP thirteen key issues are addressed (noted above) by establishing a management framework and applying wildlife program policy guidelines prior to implementation of resource management actions.

109-2

BASIS OF OPINION

The FWS reviewed the PRMP to determine if the proposed resource allocations and management prescriptions, guided by established policies for the wildlife program, would preclude the survival and recovery of Federally listed species.

The BLM through the PRMP establishes general directives to improve efficiency and effectiveness of resource management under its authorities. The PRMP and biological assessment describe a general framework for this management in the BRA. Overall, few site-specific actions are presented in this general framework. The BLM in the PRMP has established policy to review future site-specific actions proposed in this RMP on a case-by-case basis for impacts to Federally listed threatened and endangered species. When "may affect" determinations are made for those actions, consultation with FWS will be initiated.

Our beneficial affects opinion is based upon BLM commitments to identify and acquire high value potential and occupied habitats for threatened and endangered species, monitor potential habitats for T&E species and recommend designation of the Pryor Mountain Wilderness Study Area (WSA), and portions of the Burned Timber Canyon and Bighorn WSAs as additions to the National Wilderness preservation system. We agree that areas within these WSAs contain important potential recovery habitats for peregrine falcons. Management actions in these areas which minimize unnecessary harassment to falcons that may use the area now and in the future will be beneficial to this species' survival and recovery.

There are no populations of black-footed ferrets known to us outside of the population located near Meeteetse, Wyoming. We believe that other populations must be found to augment ferret recovery actions currently underway in Wyoming. The PRMP's commitment to monitor potential ferret habitat for ferrets is a positive first step to assist in this search for other populations of ferrets.

The bald eagle is a year-long resident and has nested historically within the BRA. The Clarks Fork of the Yellowstone, Yellowstone, and Bighorn Rivers are especially important habitats for this species in the BRA. Knowledge of this species' behavior (monitoring), acquisition of key eagle habitat, and management prescriptions to protect eagles and eagle habitat and food resources within the BRA are basic beneficial and necessary initiatives taken by the BLM through the PRMP.

The Prior Mountains and Bighorn Canyon are areas of known recovery potential for the peregrine falcon. Although no peregrine eyries are currently documented as active within these areas, falcons are frequently sited in these areas. Since there is high potential for current occupation and for introduction of this species into this area, proposed management prescriptions, which protect the species and the integrity of this high potential peregrine habitat, are considered by FWS as beneficial actions for recovery and survival of the peregrine falcon.

109-3

RECOMMENDATIONS

The PRMP provides certain necessary commitments by the BLM to ensure that future proposed site-specific actions covered by the scope of this plan are evaluated for impacts which "may affect" T&E species, including formal and informal consultation with FWS whenever necessary. In order to further utilize your authorities and meet your responsibilities under the ESA we recommend the following be incorporated into implementation criteria for the plan in order to enhance T&E recovery:

1. That areas identified in the future as containg known breeding habitat for T&E species be given priority for HMP development.

2. That T&E monitoring programs result in a composite map of potential T&E habitats. For example, that all prairie dog towns within the BRA be mapped and updated every three years.

3. That potential reintroduction sites for T&E species be identified and HMP's be developed to ensure long-term protection for the integrity of these sites or until such sites are no longer deemed necessary for the recovery of the effected species.

This completes our biological opinion on the PRMP. If additional species are listed within the BRA which may be affected by the plan or if conditions of the proposed plan change, consultation with the FWS should be reinitiated.

We appreciate your cooperation and interest in meeting our joint responsibilities under the Endangered Species Act, as amended.

Wayne L. Brewster

cc: Forest Supervisor, Custer National Forest, Billings, MT
District Manager, BLM, Miles City, MT
Ecological Services, FWS, Billings, MT
State Director, BLM, Billings, MT
Superintendent, Big Horn Canyon National Recreation Area, Fort Smith, MT

109

Letter No. 109 — Wayne G. Brewster, Fish and Wildlife Service, Helena, Montana

Response No. 109 — This is the Fish and Wildlife Service's Biological Opinion. It is included for information purposes.

110-1

DEPT OF INTERIOR
BUR. OF LAND MGMT

State of Montana
Office of the Governor
Helena, Montana 59620

1983 JUL 21 PM 2 04

TED SCHWINDEN
GOVERNOR

July 15, 1983

	DATE	DATE OUT
SO		
LEG		
AA		
MR		
L & RR		
OPR		
ADM		
ACTION		
FILING		

Mr. Michael Penfold, State Director
U.S. Bureau of Land Management
P.O. Box 30157
Billings, MT 59107

Dear Mr. Penfold:

On behalf of the State of Montana and the State Planning Task Force members, I would like to thank you for the opportunity to comment on the Draft Billings Resource Area Management Plan (RMP).

The State of Montana appreciates the fact that in the process of developing the Billings RMP it was necessary for the BLM to address an exceptionally large, diverse portion of Montana. Acknowledging that fact, the RMP still appears to be vague in the data used for the alternatives and methodology sections. The format used in the RMP was confusing and involved a considerable amount of searching and sorting to understand the management directives.

Attached are specific comments and concerns particularly important to Montana. We continue to support BLM's efforts to consolidate land holdings through exchanges and sales, when the process would result in a positive benefit to the public.

I look forward to reviewing the final RMP and continuing our on-going land exchange process.

Sincerely,

TED SCHWINDEN
Governor

RECEIVED
BILLINGS RA
JUL 22 '83

USDI			BLM
AM		MIN	
RES. T (OFS)		REC	
RES. T		LANDS	
ENV. ED		WILDL	
ADM	FILE	ACTION	
PLAN			

cc: Planning Task Force Members

110

110-2

CHAPTER 5

SPECIFIC CONCERNS

A. AIR QUALITY

1) On page 53, paragraph 5 under Air Quality of the RMP, the paragraph is incorrect. Neither portions of the Absaroka-Beartooth "wilderness area" nor the Bighorn National Recreation Area have Class I air quality designations. The only area to have a Class I rating is Yellowstone National Park.

2) No mention is made of the impacts associated with prescribed burning. According to the Plan, 21,520 acres of sagebrush are programmed for burning, but no mitigation measures are mentioned regarding the resulting smoke. Reference should be made to the Montana Cooperative Smoke Management Agreement and Plan.

B. WATER

1) Due to the climatic and land characteristics of the areas managed by the BLM in the Billings Resource Area, minimal impacts to water quality are expected under the preferred management alternatives. Best management practices (BMP) should be used to maintain streamside vegetation, stockwater access, bank trails and any other natural conditions along streambanks, in addition to the maintaining of water quality.

2) The High-Level and Preferred Management Alternatives state that water quality in riparian zones should improve. The effectivenss of sediment control and some water chemistry parameters will require monitoring.

3) Grazing management, and coal mining are potential areas of concern for water quality impacts. With proper mitigation and management practices, reduction of impacts to water quality can be made. Grazing allotment management should include measures for streambank protection. Mitigating measures to reduce the impacts of coal mining and its associated activities must considered and implemented as federal reserves are leased and mined.

C. GRAZING

1) The emphasis on grazing system implementation, range and tame pasture rennovation and the reduction of stocking rates to achieve proper use should be effective in range and watershed improvements.

2) Detailed sagebrush burning techniques should be given in the allotment management plans and Appendix 4.1 of the RMP. Reseeding may be necessary following prescribed fire in stands severely depleted of perennial grasses.

3) It is not clear on pages 30 and A-60 of the RMP if rennovated crested wheatgrass pastures will be fenced. Fencing of crested wheatgrass pastures into separate units is usually required for effective pasture management.

110-3

4) Monitoring of range conditions, trends, and utilizations will be very important in the Billings Resource Area due to the limited data and time inputs available for the RMP. Monitoring techniques should be described in more detail in the RMP, even though they will be described in each Allotment Management Plan. An appendix could be included listing the specific data gathering techniques to be used for each allotment category, including the frequency of the monitoring effort.

5) The "sodbusting" practices that are going on in Montana could jeopardize BLM's asset management program. The State strongly supports the exchange of lands instead of sale for isolated tracts; where there is potential irrigable lands; and in areas that make good land management sense. The sale of isolated tracts should only be considered when such a sale would be of public benefit. Since these lands are, for the most part, rangeland the State wishes to express its concerns that these lands not be broken up unless they are classified as tillable land by the Soil Conservation Service. The State suggests that a "statement of intent" and a soil conservation plan accompany any person's or company's offer to buy or exchange BLM land.

D. NOXIOUS WEEDS

The emphasis on cooperative efforts with private landowners and county weed boards is appreciated. The BLM acknowledges a need for an accurate inventory of infested acres and should commit to such an inventory.

E. WILD HORSE MANAGEMENT

1) The State supports BLM's efforts to consolidate their land holdings within the Pryor Mountain Wild Horse Range (PMWHR) to facilitate management of the area. The Department of State Lands has listed for exchange the State Trust Lands within the Wild Horse Range in the Billings Resource Area.

111

A 2) Short of forced movement of the horses and cross-fencing, the State believes that the BLM should take more positive measures than those outlined in the preferred alternative to improve the range condition on the PMWHR. Some of the other range improvements outlined in the high level management alternative would seem to be appropriate for further consideration.

B 3) Installing several water catchments would further aid in the distribution of the horses and help reduce the erosion associated with long treks to water sources. Interseeding and some forms of vegetative manipulation, such as sagebrush burning, should also be considered.

C 4) The State supports a vigorous monitoring program be associated with any management changes on the PMWHR. Manipulating the sex ratio of the herds should be phased in over time and closely monitored.

D 5) Removal of the Classification and Multiple Use classification from the majority of PMWHR lands has the potential to dramatically affect the horses. The BLM should study the possibility of extending the preferred alternative oil and gas leasing philosophy to mineral exploration.

Letter No. 110 — Gov. Ted Schwinden, State of Montana, Helena, Montana

Response No. 110A — Without more specific information, it is difficult to determine those aspects of the high level management alternative to which you refer. It should be noted, however, that the preferred level of management was selected on the basis of preserving the natural setting of the wild horse range. Many of the proposals made in the high level management alternative would detract from this setting of the wild free roaming horses, and would also not be in keeping with preservation of wilderness characteristics.

Response No. 110B — The water catchments will be installed to improve distribution of the horses by increasing the availability if water. They can be used to selectively influence the areas the horses use during various times of the year. Areas that traditionally receive heavy use adjacent to water sources are provided some relief by fencing off the water, thus forcing the horses to other areas. This method would subject the horses to very little stress while improving range condition through deferment of selected areas. The limitations in both soil capabilities and low annual precipitation make interseeding and vegetative manipulations infeasible in the horse range.

Response No. 110C — One objective for management of the Pryor Mountain Wild Horse Range wild horses is to strive for a sex ratio approaching 50-50. This would slow the reproductive rate and will be implemented slowly. However, sex ratio is only one criterion used in determining which horses are to be removed. Conformation, color, and other characteristics that typify the Pryor Mountain wild horses will also be considered. Due to the isolated nature of this horse herd, it is necessary to be selective when removing horses or the concentration and/or elimination of a certain gene pool could occur. The BLM's selection criteria are designed to minimize these problems. The proposal in the RMP Preferred Alternative was to relocate horses or groups of horses from overpopulated herd areas to areas where there is additional forage available.

110-4

F. FIRE CONTROL

The current program needs to be explained in greater detail, considering the scattered nature of their lands. The BLM policy regarding cooperation with the Department of State Lands should be explained. Recognition should be given to the counties participating in the County Cooperative Fire Program. The planned fire prevention, presuppression, detection, and suppression coordination should be explained.

G. OIL AND GAS LEASING

E

The discussion on page 7 of the RMP is unclear. First, the statement is made that: "The activities associated with oil and gas exploration and production may impact scenic values, wildlife habitat, cultural resources and other land uses." Later, the statement is made that: "In most cases, these stipulations (standards) provide adequate protection for other environmental components." It appears that potential impacts are recognized, but it is not clear if the BLM intends to fully provide the necessary environmental protection. Adequate environmental protection should be ensured in more than "most cases" terminology.

H. LAND TENURE ADJUSTMENT

The State strongly supports the emphasis on land exchanges, as opposed to sale, in the Billings Area RMP. South-central Montana has the lowest percentage of public lands of any area in the state. Yet, it has the largest and fastest growing population of any region.

The Land Tenure Adjustment Planning Criteria presented in Appendix 1.3 (page A-4) do not seem to conform to the criteria included in the State Director's Guidance Manual. In particular, size is not a criterion in the Director's Guidance, but seem to have some importance in Appendix 1.3. Number 13 under "Disposal Criteria" seems to indicate that BLM intends to accommodate sodbusting where interest is expressed in a parcel of public land. This is contrary to the Governor's stated position on this issue.

In a related matter, we recently received a request to comment on the sale of a parcel of land which is part of the Pryor Mountain Wild Horse Management Area. This is contrary to the State Director's Guidance Manual, but does not seem to be addressed by the "Retention Criteria" in Appendix 1.3. These discrepancies should be cleared up.

I. COAL LEASING

The State has some concerns about the leasing of coal reserves in the Bull Mountains, at this time. The nature and cost of the extractive operation involved are of dubious feasibility in current coal market conditions. The DEIS also fails to present, for public comment, the results of the application of all the unsuitability criteria. We recommend that before any coal leasing occurs in the Bull Mountains a separate EIS be prepared that addresses in-depth these and other concerns of the public.

The objective is to keep horse numbers in balance with the forage produced rather than promote selective breeding. These objectives and their implementation will continue to be closely monitored.

Response No. 110D — The proposed action for the three WSAs associated with the Pryor Mountain Wild Horse Range is for wilderness designation. As such, they would be withdrawn from entry under the mining laws.

Response No. 110E — If any of the three WSAs associated with the Pryor Mountain Wild Horse Range were designated as Wilderness (the proposed action), it would be withdrawn from mineral leasing. (Currently, there is a statutory moratorium on leasing in WSAs.) If any one of the WSAs were released from wilderness review, it would be available for lease with no surface occupancy stipulations.

110-5

J. WILDLIFE

1) Key wildlife-use areas must be included as an integral part of the grazing plan. Special emphais should be placed on quantified range improvement objectives and how it is to be attained within the grazing plan. The State recommends that a portion of the increase in predicted forage as a result of improved range conditions be allocated to key wildlife ranges.

2) The State disagrees with the statement, "additional livestock water sources would expand wildlife habitat significantly on the "1" category allotments." Prior to adding water sources a complete evaluation should be made of the potential conflicts with wildlife that may result from the change in livestock distribution.

3) The development of nesting islands can be of considerable benefit to waterfowl and should be included in all new reservoir construction. Fencing reservoirs from cattle use to produce nesting cover can also be of benefit, but only if a large enough area (130-160 acres) of cover is provided. Research by the Montana Department of Fish, Wildlife and Parks has determined that on waterfowl production areas small patches of nesting cover serve as an attractant to waterfowl, but ultimately form a trap as they are easily searched by predators.

4) Although available nesting cover for upland game birds can increase due to decreased off-road vehicle use, the benefits would be reduced since vehicles would still have access to the area on designated roads and trails. The acreage impacted would thus be considerably less than the 57,900 acres predicted in the EIS.

5) Habitat management plans should not be limited to chukars, but should be prepared and implemented for all wildlife species. The uniqueness of this bird to Montana hunters and its dependence on public lands is a good reason for developing a managment plan. However, the needs of the other game and nongame species also need to be considered. For example, Over the past seven years for which comparable data are available, chukar hunters have averaged 823 hunter days and 895 chukars killed per day. This compares with a combined average of 122,000 hunter days for upland bird, antelope and deer hunters in the same area. This hunter use dictates habitat management plans should also be developed for other species.

6) The State disagrees with the statements, "There would be a moderate decrease in chukar partridge and sage grouse habitat due to the burning of 21,520 acres of sagebrush. However, this would result in a moderate increase of sharp-tailed grouse habitat." The removal of sagebrush will result in a decrease in sage grouse, but it does not guarantee the appearance of sharptails or their habitat.

7) Sagebrush removal on 21,520 acres (18 percent of federally managed antelope winter range) will have a significant negative impact on antelope. Sagebrush is the dominant forage species in antelope diets often constituting 80-90 percent of the total winter diet. In addition, research has found browse occurrence in the antelope diet to be 15 times greater than its occurrence in the plant community and substantial starvation losses of antelope have been documented when they are restricted to grassland types.

8) Sagebrush burning would also have a negative impact on sage grouse. Since the sage grouse strutting ground is considered the hub of sage grouse

110-6

activity, the effect of sagebrush burning would be even greater than the 25 percent indicated because of the associated wintering and nesting areas that would be affected.

The State recommends those areas for which sagebrush burning is proposed be identified in the Plan. In addition, the BLM should coordinate these and future sagebrush burning proposals with the Montana Department of Fish, Wildlife and Parks with the intent to meet the following guidelines: leave a ratio of 40:60 (40 percent sagebrush, 60 percent open); no burning on critical sage grouse or antelope wintering areas; burns in small irregular patches 50x100 yards in size; no burning within identified sage grouse nesting, wintering and strutting ground complexes; burning should occur in early spring before nesting.

111

DEPT OF INTERIOR
BUR. OF LAND MANAGEMENT

'83 JUL 13 AM 10 13

WYOMING
EXECUTIVE DEPARTMENT
CHEYENNE

RECEIVED
BILLINGS RA

JUL 19 '83

USDI		BLM
AM___	RANGE___	MIN___
RES. T (OTS) ___		REC___
RES. T ___	LANDS___	
ENV. ED___	WLDLF___	
ADM___	FILE___	ACTION___
PLAN	___	___

ED HERSCHLER
GOVERNOR

July 11, 1983

Mr. John A. Kwiatkowski
Bureau of Land Management
222 North 32nd Street
P.O. Box 30157
Billings, MT 59107

Dear Mr. Kwiatkowski:

The draft Resource Management Plan for the Billings Resource Area has been circulated for review by several state agencies. Copies of agency comments are enclosed for your consideration and use.

Our review was restricted to those management proposals affecting the 6,340 acres of public lands in the Pryor Mountain Wild Horse Range (PMWHR) in Big Horn County, Wyoming. We note that the preferred alternative recommends wilderness designation of the entire PMWHR. We further note that present management of the wild horse range is in keeping with preservation of wilderness values. If the area were to be designated wilderness, we believe that sufficient flexibility should be incorporated in the designation to allow for needed range improvements and wild horse management activities. We also encourage the Bureau to work closely with the local publics and communities to address access, interpretation and recreation/toursim desires.

Thank you for the opportunity to review and comment on this document. Please keep my office informed of the progress in this effort.

Sincerely,

Dick Hartman

Dick Hartman
State Planning Coordinator

DH:pcl

Enclosures

114

Letter No. 111 — Dick Hartman, State of Wyoming, Cheyenne, Wyoming

Response No. 111 — A wilderness management plan for the Pryor Mountain area will be prepared after Congress designates the area as a component of the National Wilderness Preservation System. The BLM is also concerned that needed flexibility be retained to ensure that wild horse and wilderness management philosophies are in concert and actually do complement one another. Future management plans will be developed with these objectives in mind.

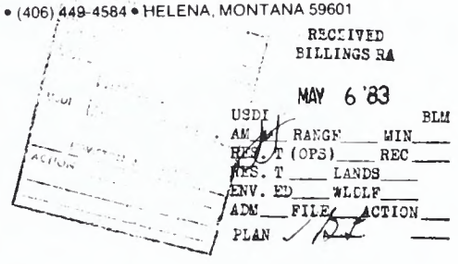
Access, interpretation and other issues have and will continue to be addressed in consultation with State and local governments, other agencies, and the public.

112

MONTANA HISTORICAL SOCIETY

HISTORIC PRESERVATION OFFICE

225 NORTH ROBERTS STREET • (406) 449-4584 • HELENA, MONTANA 59601



May 2, 1983

Glenn W. Freeman
District Manager
Lewistown District Office
Bureau of Land Management
Airport Road
Lewistown, MT 59547

Dear Mr. Freeman:

RE: Draft Environmental Impact Statement; Resource Management Plan
Billings Resource Area.

Thank you for the opportunity to review the above-named document. In general I found the study easy to read and comprehensive. However, there are some areas I thought could be expanded in coverage. The Plan does not but should specify how sites would be evaluated for their eligibility for listing to the National Register of Historic Places and note whether or not the B.L.M. will pursue their ultimate nomination to the Register. It should also provide some estimate of the human and financial resources required to implement the cultural resource programs under each of the alternatives. The resource management plan should also include more specific information on how the identification, evaluation, and nomination of Billings Resource Area properties will occur in a timely manner under each of the alternatives (under contract to archaeologists outside the B.L.M. or by archaeologists employed directly by the B.L.M.; what lead time will be provided for the evaluation and analysis of sites found). Finally, I would like to see some discussion of whether the Management Plan will provide for the survey of unaffected portions of the Resource Area which have not been surveyed for the presence of cultural properties.

Sincerely,

Marcella Sherfy
Deputy SHPO

TAF:md

115

Letter No. 112 — Marcella Sherfy, Montana Historical Society, Helena, Montana

Response No 112 — The management of cultural resources is covered in some detail in the RMP/FEIS (pages 11, 12, A-73, and A-74) and this FEIS. As discussed in the Cultural Resources sections of Chapters 2 and 4 of this document, archeological sites within the WSAs would be protected, regardless of whether the WSA is designated as wilderness. We have a commitment and well established procedures under Section 106 to consult with your office. We look forward to continued effective consultation with the Montana Historical Society.

113-1

LAW OFFICES
BARRETT, HANNA, DALY & GASPAR
SUITE 100
2555 M STREET, N.W.
WASHINGTON, D. C. 20037

(202) 293-3204
TELEX 90-4058 HCLAW WASH

FRANKFURT, GERMANY OFFICE
6 FRANKFURT AM MAIN
AM SALZHAUS 4
WEST GERMANY
(0611) 28/647/48

DAVID M. BARRETT
ROGER V. BARTH
FRED H. DALY
RUSSELL J. GASPAR
RAY L. HANNA
LAWRENCE S. HOFFHEIMER
CALVIN P. JOHNSON*
JOHN H. MONTGOMERY
ROBERT L. OSWALD

JOSEPH E. SCHULER
NANCY A. MURRAY

OF COUNSEL
MARIO T. NOTO
EDWARD J. BELLEN
FRANKFURT, WEST GERMANY

*ADMITTED TO PRACTICE IN MISSOURI ONLY

July 14, 1983

Jerome W. Jack
Manager, Billings Resource Area
United States Bureau of Land Management
810 North Main Street
Billings, Montana 59105

Dear Mr. Jack:

I am enclosing for your reference a copy of the comments submitted by the American Horse Protection Association to the Montana State Office regarding the Billings Resource Management Plan and draft EIS.

For the reasons set forth in those comments and expressed to you by Hope Ryden in her letter of July 9, AHPA believes that a roundup of horses in the Pryor Mountains is unnecessary this year. This is particularly true of a removal of 30 - 40 horses, as was originally proposed. The current population is very close to the target population set in the EIS, even accepting that target as an accurate reflection of the Range's carrying capacity. The fact is, however, that the Range certainly can support more horses than the EIS estimates.

We have discussed at length the risks associated with reducing the Pryor herd too far. Avoidance of these risks is especially important due to the unique physical characteristics of the Pryor horses. Since BLM removed a large number of animals last year, AHPA believes that this year's roundup should be approached with far more caution. Even assuming that inaction is an error, it would be far better to err conservatively. The Pryor herd is small, and its characteristics cannot be reproduced

113-2

elsewhere if too many horses are lost to removal and natural attrition.

Very truly yours,

Russell J. Gaspar

Russell J. Gaspar
Attorney for American Horse Protection Association, Inc.

cc: Joan R. Blue
Hope Ryden

113-3

DEPT. OF INTERIOR
BUR. OF LAND MANAGEMENT
1983 JUL 15 AM 11:28

RECEIVED
MONTANA STATE OFFICE
BILLINGS, MONTANA

Law Offices
BARRETT, HANNA, DALY & GASPAR
SUITE 100
2555 M STREET, N.W.
WASHINGTON, D. C. 20037

(202) 293-3204
TELEX 90-4058 HCLAW WASH

FRANKFURT, GERMANY OFFICE
6 FRANKFURT AM MAIN
AM SALZHAUS 4
WEST GERMANY
(0611) 281647/48

DAVID M. BARRETT
ROGER V. BARTH
FRED H. DALY
RUSSELL J. GASPAR
RAY L. HANNA
LAWRENCE S. HOFFHEIMER
CALVIN P. JOHNSON*
JOHN H. MONTGOMERY
ROBERT L. OSWALD

JOSEPH E. SCHULER
NANCY A. MURRAY

OF COUNSEL
MARIO T. NOTO
EDWARD J. BELLEN
FRANKFURT, WEST GERMANY

*ADMITTED TO PRACTICE IN MISSOURI ONLY

July 14, 1983

ROUTING	INITIAL	DATE IN	DATE OUT
1 SD			
2 ASD			
Sc Asst			
EED			
PA			
MR			
3 LR			
OPR			
ADM			
ACTION			
FILING			

Michael J. Penfold
State Director
United States Bureau of Land Management
222 North 32d Street
Billings, Montana 59107

re: Draft Environmental Impact Statement, Billings Resource Area

Dear Mr. Penfold:

I am writing on behalf of the American Horse Protection Association, Inc., and Hope Ryden to comment on the draft EIS for the Billings Resource Management Plan. By way of preface, AHPA agrees with and supports Miss Ryden's oral comments at the public meeting in Lovell on June 1, and the written comments she has previously submitted.

AHPA's principal criticism of the EIS is its decision to establish a target population of 121 wild horses on the Pryor Mountain Wild Horse Range. A herd of 121 horses is the basis for analysis of all of the alternatives, and, from the tone of the draft (e.g., draft at pp. 35, A-32), apparently is regarded by BLM as the most likely long-term population, regardless of the alternative selected.

The population target is in part a function of the forage production data developed during the 1981 range survey. As Miss Ryden has noted, that survey probably produced somewhat conservative forage production values; last year's rains certainly must have improved forage conditions and provided a greater degree of flexibility in managing the Pryor herd. As a result, the estimate of total AUM production set forth in Appendix 2.3 may well be on the low side.

113-4

Of more importance is the use of a 1.25 conversion factor in determining how many wild horses the estimated AUMs can support. AHPA wants to reiterate, in the strongest possible terms, that that conversion factor is clearly not in accord with the research recently conducted under the auspices of the National Academy of Sciences. As a result, the wild horse carrying capacity computed in Appendix 2.3 is erroneous.

The NAS study found, on the average, that mares consumed about 14 percent more forage than cows. The differential was greater for lactating mares, but considerably less for non-lactating mares. The study did not measure consumption rates for male or immature horses. However, it noted that the consumption rates of mature female horses did not vary significantly by the weight of the animal. This implies that consumption by mature males probably is not too different from non-lactating mares. Consumption by immature animals is probably much less.

In the context of a wild horse herd, this means that average consumption per animal is nowhere near 25 percent greater than that of the typical lactating cow/calf unit that is assigned one AUM for BLM planning purposes. As Miss Ryden has noted, the large majority of horses in a wild herd will be non-lactating mares, immature animals and stallions, all of which will probably consume less forage than a lactating cow. On a herd basis, therefore, this compensates for the higher level of consumption by lactating mares and draws average horse consumption down to a level close to that of a lactating cow.

Therefore, the draft should be modified to use one AUM as the monthly unit of consumption for wild horses. This would set the Range's carrying capacity at 152 horses. In addition, it would make the draft consistent with many other grazing EISs AHPA has reviewed, nearly all of which use one AUM per month as the unit of wild horse forage consumption.

AHPA agrees with the draft's proposal to reduce the current female/male imbalance in the Pryor herd, provided that BLM establishes the ratio at approximately 50/50. The use of the phrase "heavy to studs" (draft p. 35) is of concern to AHPA, since it implies that creating a preponderance of male horses is BLM's goal. That is not desireable, and AHPA opposes it.

As the draft notes (p. 159), correcting the male/female imbalance will lower reproduction rates to a level close to natural mortality rates. This will slow the herd's growth rate considerably, reduce the need for frequent roundups and

substantially reduce costs associated with the wild horse program. AHPA believes that BLM's efforts to correct the imbalance in the sex ratio should be coordinated with its efforts to perpetuate the unique characteristics of the Pryor Mountain horses. That is, the removal of excess animals (especially excess mares) should concentrate on those animals that clearly do not contribute to the outstanding array of colors and other characteristics found only in the Pryor horses. However, more intensive management activities such as relocating stallions for the purpose of genetic manipulation should be avoided. For this reason, (and to prevent opening the range to mineral and timber operations), AHPA opposes implementation of the high level management alternative.

A

AHPA is in accord with the other points made in Miss Ryden's comments. In brief, these are as follows:

1. AHPA supports the proposal to purchase 2,240 acres of additional land for the Pryor Mountain Range;

B

2. AHPA questions the need for seven additional miles of fence. In particular, since the need for roundups probably will be reduced as the male/female ratio of the herd is normalized, why are an additional two miles of fence needed to improve "the efficiency of capturing the horses" (p. 35)?

C

3. AHPA is concerned by the reference in the draft to the "long-term significant impacts" on wild horse management that are expected if the wilderness study areas are in fact designated as recommended (p. 160). What are these impacts? Why are they significant? The draft is woefully short of data on this point, and must be supplemented.

D

4. AHPA recognizes that the construction of five additional water cachements (p. 35) could improve grazing distribution by wild horses and thereby increase the Range's carrying capacity. However, that assumes that the new cachements will be used. As Miss Ryden notes, the two existing cachements aren't in use; it is futile to build additional unused equipment. The draft should be more explicit about the purpose, location and intended use of the existing and planned cachements, and explain why such a considerable investment of funds will be worthwhile.

Letter No. 113 — Russell Gasper, for American Horse Protection Association, Washington, D.C.

Response No. 113A — The proposed action is wilderness designation of the three WSAs associated with the Pryor Mountain Wild Horse Range. See Chapters 1 and 2 for timber and mineral management under the proposed action and nonwilderness alternative.

Response No. 113B — The proposed action for the three WSAs associated with the Pryor Mountain Wild Horse Range includes the construction of 2 miles of fence to facilitate horse management including capture operations. The remaining fence has been built. It is along the south boundary of the Pryor Mountain Wild Horse Range and portions of the Pryor Mountain WSA boundary. There are 4.5 miles of fencing proposed to protect significant archeological sites. However, only 1 mile would be located in areas used by the wild horses (i.e., east of Crooked Creek).

Response No. 113C — A reference to long-term significant impacts on wild horse management as a result of wilderness designation was made in the third paragraph on page 160 of the Billings RMP/DEIS. This reference to impacts was overstated. The proposed actions presented in this document recommend wilderness designation for the Pryor Mountain, Burnt Timber Canyon, and Big Horn Tack-On WSAs. The only potential impacts on wild horse management would be the location and type of new range developments which might be allowed. Although facilities would have to be installed so as not to impair wilderness characteristics, they would still be allowed. The proposed action for these three WSAs would ensure continuation of a healthy wild horse herd, which BLM construes as a major supplemental value of wilderness. In addition, wilderness designation would prohibit any major surface disturbing activity (none is projected) that could adversely impact wild horses.

Response No. 113D — The water catchments are needed to improve distribution of the horses by increasing the availability of water. They can be used to selectively influence the areas the horses use during various times of the year. As such, they may not be used year round. They may also be used during drought conditions. Areas that traditionally receive heavy use adjacent to water

113-6

I have enclosed the photographs referred to in Miss Ryden's comments, and ask that they be made part of the record.

AHPA looks forward to your response to these comments, and will be happy to discuss them with BLM personnel as the Final EIS is prepared.

Very truly yours,

Russell J. Gaspar
Attorney for American
Protection Association, Inc.

cc: Joan R. Blue
Hope Ryden
Jerome W. Jack

sources are provided some relief by fencing off the water, thus forcing the horses to other areas. This method would subject the horses to very little stress while improving range condition through deferment of selected areas.

C.E. Hitch
282 Ashley Court
Billings, MT 59105

Michael J. Penfold, State Director
Bureau of Land Management
P.O. Box 30157
Billings, MT 59107

July 13, 1983

SUBJECT: Comment Draft EIS Billings Resource Area

Dear Mike,

Old habits are hard to break--somebody gave me a copy and I started scratching with pen and pencil.

For the most part, this EIS reflects the long trail that the proceedure has been. It is quite readable and not as long or detailed as were some others. It does have some overlap of problems with coal, oil, gas, grazing, wild horses, and ORV, so it is a commendable effort.

One area of coverage I find rather short. You have a dispersed and broken ownership pattern in Montana. This EIS covers an area where it is more so. You have a lot of small tracts. It is mentioned on page 1, column 2 and on page 79 under recreation. Almost all the rest of the write up chooses to ignore it and act like it just isn't so. I would think you could have tempered, maybe avoided, some of the attacks on the land adjustment program if this situation had been emphasized more. There is mention of this with the discussion of the "C" classification of grazing permits, but, again, passed off very lightly. The statement, page 147, column 1, concerning the need for cooperation in weed control would be equally true on all management for these small tracts.

The land adjustment program is a real tiger to the small livestock operator as you have probably heard. Eighty acres of rocks with a few trees and topographically very hard to get much use of, if there is even forage to be sold. There is usually somebody who would like to have "their ranch." If the rancher doesn't or can't out bid them then the negative values start. Fences and fence troubles, access troubles with lawyers fees and years of kids, pets, and traffic in the middle of a grazing program. They are the ones that are in a bind but that does not wipe out the need to resolve some of the scattered tracts.

I have long supported your efforts to concentrate the wild horses and their problems in the PMWHB. I do question the assumption that adjustment of numbers will achieve adequate management--page 35, column 1, page 69, column 2 and page 119, column 1. This is especially so given the range condition shown on page 6. Adjustment of numbers usually narrows the impact areas but does not result in much overall improvement. I also question the conversion factors used on these horses to adjust the grazing. I have used a 1.5 or 1.75 AUM per horse month for thirty years. In a couple cases where

there were a substantial horse count present they still overate the allotted forage. Their areas suffered. There may be better scientific data to work with but it has been long known that horses are eaters. If it is available, they do not quit.

I also question if you can achieve resource and watershed values in the presence of ORV use as suggested on page 37, column 2. I am aware that you must try, but so far there have been few successes in the write up.

A couple of small errors I noted in reading:

> Chapter 3, page 53, you left out the Little Belt Mountains which, like the Snowys and Crazys, are on the edge of the area.
>
> Page 71, column 1 and page 72, you have an error concerning the L.U. program (Bankhead Jones Act). Both state the primary purpose was to stabilize the soil. Not so! The primary purpose was to stabilize the agriculture. The lawyers tell me that it has been written out of the law now and nobody can explain how it happened, but it was there in the original and tied to the L.U. lands for many years.
>
> Page 1V, column 1 and page 31, column 2 refer to the range conditions on the flood plain in the woody type. I've been through this many times. To some the more woody plants the higher ecologic condition. Once you get close to 50% canapy, it is not a <u>range</u> condition as most forage plants are shaded out. There is real debate on the ecology of these sites and what is near climax. First, because they are very variable sites with widly varying moisture conditions. Second, brush is not a climax plant type in many places and to assume it is in this area is quite an assumption. I haven't been around very long, but I've seen willows, cottonwood, and aspen come and go on flood plain areas, helped by beaver, disease, or mans impact. I don't believe it is a good assumption that the species of plant that favors your animal is necessarily good conditions.

I hesitate to mention wilderness. I have never understood how the wilderness individual looks and braggs about the experience with statements like, "I didn't see anybody for ten days," then fights like mad for an area for wilderness that is not any different than I've range surveyed many times and been through it and back by lunch time. I firmly believe the 5000 acre limit was put in by people who don't know this country. It is just not a "big" area in this country. I would oppose such designation on the PMWHR if it adds even a little bit to the management problems that you now have.

Your statement on permit value, page 109, is quite correct. Small permits are usually of <u>no</u> value. Then you show small ranchers with a $19,100 added value. This should be a 191 AUM permit. This is more than permitted on the entire "C" list with eight exceptions. There is a substantial number in the "M" & "I" that do not have that size of permit. Someplace between

114-3

page 108 and the top of 109, you changed the entire base of thought plus the figures on 109 do not fit this area very well. A very large share of your permits in this area would have little or no value.

One item that suprised me was the mention of land acquisition for fish and wildlife. (Page 32 and 36). I know the State FW & P is buying game ranges and the Federal F & WS is acquiring refuges for migratory and other game, but when did the BLM join this effort? I didn't even know you had that authority.

Thanks for this opportunity to comment. I am especially pleased to note this progress on what has been a long job.

Sincerely,

Chuck Hitch

C.E. Hitch

Xer: Billings Area Office
Montana Public Lands Council

CEH/jmh

Letter No. 114 — Chuck E. Hitch, Montana Public Land Council, Billings, Montana

Response No. 114 — Thank you for your comment.

115-1

1983 JUN 29 AM 10 39 RECEIVED

ROUTING	INITIAL	DATE IN	DATE OUT
1 BP			
2 ASD			
OPR			
ADM			

ACTION

FILING

MONTANA WILDERNESS ASSOCIATION

MONTANA STATE OFFICE
BILLINGS, MONTANA JUL 6 '83

June 28, 1983

USDI BLM

Mike Penfold
State Director
Bureau of Land Management
P.O. Box 30157
Billings, MT 59107

A ___ RANGE___ MIN___
RES. T (OFS)___ REC___
RES. T ___ LANDS___
ENV. ED___ WLDLF___
ADM___ FILE___ ACTION___
PLAN ___ ___

Dear Mike:

I wish to offer the following comments on the draft Environmental Impact Statement for the Billings Resource Area Management Plan.

In general, the document is well-organized, well-written and easy to follow. My only comment in terms of presentation is that a good color-coded map of each of the four alternatives should have been included in the packet. The maps that were presented were very helpful.

Each of the four alternatives have some strong and weak features but our general preference is for #3--the High Level Management Alternative.

The Montana Wilderness Association (MWA) strongly supports wilderness designation of the two Wilderness Study Areas (WSA's) and also for the two "Wilderness Study Units" within the Billings Resource Area.

1) TWIN COULEE--since the beginning of the BLM Wilderness Review Program I have taken two field tours in this area and I can personally attest to its' high degree of wilderness suitability. The country is completely remote, wild and undeveloped offering more absolute solitude than most classified wildernesses. In terms of wilderness, Twin Coulee could actually stand on its' own. However, its' wilderness value is greatly enhanced by the fact that it is part of a contiguous roadless area of more than 130,000 acres--most of which are included in the 98,000+ acre Big Snowies Wilderness Study Area managed by the Forest Service.

A

The Montana conservation community has long advocated a Big Snowies Wilderness but the actual proposal really took shape when the Forest Service refused to designate the wild Big Snowies as a "New Study Area" during the 1971-73 RARE process. As a result, the Big Snowies became the subject of enough citizen support to where it eventually became one of 9 carefully-selected priority national forest roadless areas included in the late Senator Lee Metcalf's Montana Wilderness Study Act which was passed in 1977.

During the Carter Administration the Forest Service recommended a 75,000 acre Big Snowies Wilderness but later reversed itself with a negative nonwilderness recommendation in the draft Big Snowies Wilderness Study released last year by the Lewis & Clark Forest. Sadly, this Forest Service nonwilderness recommendation seems to have triggered a BLM nonwilderness recommendation for Twin Coulee.

I can assure you that the MWA will continue to work toward a Big Snowies Wilderness with the inclusion of Twin Coulee and it would sure be helpful if we had the backing of BLM. We urge you to adopt a wilderness proposal for Twin Coulee in the final Billings RMP. I am enclosing a copy of my statement in support of a Big Snowies Wilderness which I presented at the Forest Service hearing last December. Please note that this statement includes our rationale for a Big Snowies Wilderness which

P.O. Box 635 • Helena, Montana 59624 • (406) 442-0597

Letter No. 115 — Bill Cunningham, Montana Wilderness Association, Helena, Montana

Response No. 115A — Thank you for your comments.

115-2

applies equally to Twin Coulee. In this statement we are also challenging the adequacy of the Forest Service study and nonwilderness assumptions.

B 2) PRYOR MOUNTAINS--The MWA strongly supports the two recommended BLM wilderness additions in the Pryors: Pryor Mountains WSA (MT-067-206) and the Burnt Timber Canyon "WSU" (MT-067-205). In addition, we feel that the two Big Horn Tack-On units (MT-067-207) should also be included in the wilderness proposal. This is even more appropriate in that the likely possibility of wilderness management of the adjacent National Park Service Big Horn Canyon NRA wild country would allow wilderness contiguity throughout the Pryor Mountains Wilderness complex. The Pryors are hard to beat in terms of solitude and wild, rugged canyon country.

C We would like very much to see a comprehensive three-agency Pryor Mountains Wilderness jointly administered by the BLM, Forest Service and NPS. We have before us an opportunity to preserve an enduring Pryors Wildernss of nearly 40,000 acres which could serve as a model for interagency cooperation and for the development of innovative wilderness management techniques.

D In order to realize this potential we strongly recommend that BLM and the State of Montana execute a land exchange so that the two state sections (one in the Froggs Fault Cave area and the other strategically located between the two Big Horn Tack-On units) can be acquired and administered by BLM as part of the Pryor Mountains Wilderness.

E The discredited "sights and sounds" argument and supposed lack of solitude appears in the draft EIS as arguments against wilderness for the Big Horn Tack-Ons. These worn-out arguments are not valid in this case; particularly since the NPS is now leaning toward a wilderness recommendation for its' WSA which is even closer to the Bad Pass Highway. The obscure vehicle ways and other manmade features within the Big Horn Tack-On WSA do not significantly detract from the high overall naturalness of the area.

In conclusion, the MWA strongly opposes any sale of BLM public lands (Asset "management") unless the land truly has "no public value"--a finding that would be hard for us to accept on the basis of wildlife habitat and public recreational access alone. However, we are well aware of the scattered nature of BLM land holdings in the Billings Resource Area and we recognize the need for some land adjustment. All of the scattered tracts that might be sold are better retained in public ownership as potential "trading stock" for the consolidation of BLM lands elsewhere. Such as approach is especially appropriate as funds for direct land purchase become increasingly scarce.

I've appreciated the opportunity to comment on the Billings RMP and I look forward to receiving the final document. Thank you for your review and consideration of our concerns.

Sincerely,

Bill Cunningham
Conservation Director

cc: Glenn Freeman

Enlc.

Response No. 115B — The proposed action recommends for wilderness designation 16,927 acres of Pryor Mountain WSA, 3,430 acres of Burnt Timber Canyon, and 2,550 acres of Big Horn Tack-On. Based on comments submitted by the NPS and members of the public, the BLM has modified its recommendation for the 2,550-acre southern roadless area of the Big Horn Tack-On. The proposed action is for wilderness designation of the 2,550 acres. Also, see response 101B.

Response No. 115C — Since none of the BLM, NPS and Forest Service lands in the Pryor Mountains have been designated as wilderness, development of a coordinated wilderness management plan is premature. Wilderness management roles and responsibilities between the three Federal agencies represented in the Pryor Mountains will be decided at a later date, if and when Congress designates wilderness in the area.

Response No. 115D — The State of Montana and the BLM have indicated a willingness to exchange lands where public benefits would accrue.

Response No. 115E — The southern roadless area of the Big Horn Tack-On WSA provides a 9-mile common boundary with the NPS Bighorn Canyon wilderness study area. This contiguity in association with the BLM Pryor Mountain WSA is important to the potential wilderness management of the general area and the total area provides outstanding wilderness opportunities. The proposed action now recommends wilderness designation for this area.

2110 Bradbrook Court
Billings, Montana 59102

July 6, 1983

Mr. Mike Fenfold, State Director
Bureau of Land Management
P. O. Box 30157
Billings, Montana 59107

Dear Sir:

You have my letter of July 6, 1983, containing comment upon the draft EIS for the Billings Resource Area Management Plan. I overlooked a comment. Please add the following:

There is some BLM land at Big Lake, Stillwater County. The Montana Department of Fish, Wildlife & Parks and the U. S. Fish and Wildlife Service are both interested in the possibility of putting together a wildlife area at this location. I suggest the BLM land either be traded to the appropriate wildlife agency (preferably the state) or otherwise be retained and managed in conjunction with their wildlife management efforts.

Very truly yours,

Jane A. Hilger

MONTANA AUDUBON COUNCIL
Public Lands Chair

cc: Lewistown District Office, BLM
Billings Area Office, BLM
President, Montana Audubon Council

RECEIVED
BILLINGS RA

JUL 6 '83

USDI		BLM
AM___	RANGE___	MIN___
RES. T (OFS)___		REC___
RES. T___	LANDS___	
ENV. ED___	WLDLF___	
ADM___	FILE___	ACTION___
PLAN	___	___

2110 Bradbrook Court
Billings, Montana 59102

July 5, 1983

Mr. Mike Fenfold, State Director
Bureau of Land Management
P. O. Box 30157
Billings, Montana 59107

Dear Sir:

Please accept this letter as my comment upon the draft Environmental Impact Statement (EIS) for the Billings Resource Area Management Plan. Hopefully, what I have to say will be meaningful and have merit.

I oppose sale of BLM lands (the "asset management program") unless there can be shown (1) the land has "no public value" or (2) there truly is a "higher and better use" for a particular parcel. As the legislator states, let me explain: To find "no public value" for a parcel will be hard for me to accept, in most cases I know about, on the basis of wildlife needs and/or public recreational wants. I am aware that much of the Billings Resource Area BLM land is in scattered parcels. This does create administrative problems. But I do not believe disposal as such is the necessary answer. Concerning "higher and better use" I do not want the BLM exchanging land in such manner that the resultant block can then be plowed up by a "sodbuster." There is too much of that now; apparantly the lessons of the 1930s are forgotten. But neither should BLM land always be retained--here we have to depend upon the land managers and the policy makers. Unfortunately the present policy makers come across as "give-away artists."

I do support exchange. Public land managers can do much here that will benefit not only the public but the private land owner. Economic considerations should not be the only criteria. Wildlife is important. Recreation is important.

As an example of a particular problem, there is the intermingling of public and private land north of Billings adjacent to Highway 87. Public use is heavy and not always the kind desired. My personal observations are buttressed by information from the Montana Department of Fish, Wildlife and Parks: this area is important for antelope, sharptails, and sage grouse. The dominant landowner has made statements--and I can't disagree--that the use and misuse by the public is very hard on his operations; yet the land in his view is very necessary for him. How can we find a solution? One might be to fence the BLM land as his own--as state land is now if a leasee wishes--against access. But with a stipulation: do not change present land use. Thus the wildlife will still be able to use the area, too. True, public access will be barred, but perhaps we can work out some other trades to meet that need.

I am not so sure that some of the smaller public inholdings in private land shouldn't be just "used for free" by the surrounding landowner, as long as he doesn't change the present uses of the land--in other words, don't plow it up, and hopefully don't overgraze it. Just how many "small tracts" per square mile section or however rule-of-thumb we'd have to come up with does remain a question!

116-3

Under no circumstances should BLM dispose of river front or river islands. Such habitat for wildlife, termed "riparian," is in short enough supply in Montana as it is. Much of what there is has been abused. Selected river front is important for stream access as well.

I support for wilderness designation the two wilderness study areas (WSAs) and the two wilderness study "units."

A The recommendations for Twin Coulee (MT-067-212) and Pryor Mountain (MT-067-206) are in agreement with the "High-Level Alternative." Twin Coulee is good enough to be wilderness by itself, but the possibilities are admittedly much greater if the Forest Service Big Snowies WSA is also made wilderness. The BLM should have shown its independence of the Forest Service by standing for wilderness for Twin Coulee even though the Forest Service backtracked on its former position for the Big Snowies Wilderness.

B The National Parks Service, the Forest Service, and the Bureau of Land Management should all be encouraged to work towards a Pryor Mountain protected complex. The boundaries are "paper" boundaries really.

C Our feeling is the BLM and the State of Montana exchange for the two state sections (one between the two Big Horn "tack-on" "units" and the other in the vicinity of the Froggs Fault Cave); thus the BLM will then be able to administer the Pryor Mountain Wilderness as it should.

As to the remainder of the document, realistically I support the "preferred level of management" alternative. While one might wish for "high-level management" alternative, one has to consider the funds and people available. And almost daily "ground rules" are being modified. What the proposed changes in grazing regulations will be or "clarifications" of policy may be can only be guessed at. Further changes may declare the whole "EIS" redudant.

Billings is a city increasing in population with each passing day. Isolated tracts in such circumstances are important to wildlife as well as to recreation. The countryman goes to town; the cityman takes to the open spaces. Perhaps we should not dispose of any parcels of land adjacent or near Billings. We are, too, continually amazed at the land being put up for subdivision. BLM land policy should be aimed to do what can be done to channel this where wildlife and recreation values are low or not in conflict.

These comments are in addition to and supplementing the testimony of Georgia Frazier, President, Yellowstone Valley Audubon Society, at the hearing held at Billings, June 1, 1983.

James Phelps
MONTANA AUDUBON COUNCIL
Public Lands Chair

cc: Lewistown District Office, BLM
Billings Area Office, BLM
President, Montana Audubon Council

Letter No. 116 — James Phelps, Montana Audubon Council, Billings, MT

Response No. 116A — The proposed action for Pryor Mountain, Burnt Timber Canyon (3,430 acres), and Big Horn Tack-On (2,550 acres) are for wilderness designation. Twin Coulee WSA is being recomended for nonwilderness. The commercial timber values in the Twin Coulee WSA outweigh the marginal wilderness values. In addition, the majority of the area is heavily timbered and the primary recreational use areas are confined to a few open ridge tops and canyon areas. The adjacent National Forest lands are not being recommended for wilderness designation and the relatively small size of the areas likely to be used by recreationists would offer marginal wilderness opportunities. These recommendations will be transmitted to the Secretary of the Interior, the President, and Congress.

Response No. 116B — The proposed actions of the BLM and the current recommendations of the FS and NPS would, if designated, protect the wilderness values of the Pryor Complex.

Response No. 116C — The State of Montana has indicated an interest in exchange for the State sections in the Pryors. However, the proposal has not been implemented.

117-1

Defenders OF WILDLIFE

July 14, 1983

Mike Penfold, State Director
Bureau of Land Management
Box 30157
Billings, MT 59107

Dear Mike,

Please consider the following comments on behalf of Defenders of Wildlife regarding the draft Environmental Impact Statement (Resource Management Plan) for the Billings Resource Area.

I'd like to start by saying I recently reviewed the Headwaters Resource Area draft plan, and there's absolutely no comparision between the Headwaters Plan and the Billings Plan. The Billings Plan is utterly lacking in site-specific information, it's poorly organized and hard to follow, and lacks the in-depth analysis that might allow citizens to make reasoned decisions about how their public lands should be managed. Even though I may not have agreed with some of the conclusions of the Headwaters Plan, there were coherent reasons presented for the preferred alternative. The conclusion of the Billings Plan--that AUM's can be increased by 38% and conditions will improve for wildlife--given the current condition of the range and recent BLM budget levels, seems like an excursion into fantasy land.

The document begins by telling us the lands in the Billings Resource Area have a high erosion hazard, due to a variety of reasons. We're also told that more than 40% of the land is in fair or poor condition, not counting the Pryor Mountain Wild Horse Range, which is in rather bad shape itself. Although the plan tells us nothing about the condition of riparian vegetation, one might well assume that given the lack of active management a great deal of riparian vegetation is in unsatisfactory condition as well. We're also told that the potential for improving much of the rangeland isn't high (pg. 71). All in all, the picture presented isn't good, although in all fairness it's really hard to assess because of the lack of information. The document presents no information on the condition or relative abundance of key types of wildlife habitat, nor does the plan identify specifically that any of the public lands contain outstanding wildlife values. The reader is left with no concept of how these lands fit in with bordering public and private lands, and what their relative importance might be.

The plan is so generalized that it's difficult to provide meaningful comments. For instance, there's no table that would tell the reader the condition of wildlife habitat on an allotment-by-allotment basis, and what improvements should be made. I found the table that displayed this in the Headwaters Plan extremely useful. I was also unable to find in the appendix any table that showed proposed changes in stocking rates on an allotment basis. In short, a casual reader of this plan is unable to tell what parts of the Billings Resource Area have problems, and exactly what the Bureau is doing to correct the problems. Citizens are asked to take it on faith that needed changes will be implemented.

1244 NINETEENTH STREET, NW • WASHINGTON, DC 20036 • (202) 659-9510

117-2

Next, it was impossible to deduce from the plan the particular management actions that would be taken to improve resource conditions. This is particularly disturbing, given that the BLM predicts a 38% increase in AUMs is possible for an area that has so much land in unsatisfactory condition. One might normally suspect we would see a decline in AUMs given the existing range conditions; if increases are indeed justified, the BLM needs to explain as specifically as possible how this will be accomplished without compromising other resources.

The limited range of alternatives in the plan also keeps the reader from fully comprehending the different ways the public lands in the Billings Resource Area might be managed. The differences between the high level management alternative and the preferred alternative are really rather minor, particularly when you look at the cost calculations of range improvements and vegetation manipulation; they're almost identical.

Given the BLM budget problems (if Congress approves the Administration's budget request for FY '84, funds for the Range Management Division will have been reduced by nearly 40% since 1981), one can reasonably question whether the BLM can reasonably adopt a preferred alternative that would cost three times as much (budget for the existing program is $321,000 as compared to $995,000 for the preferred alternative). It would only seem reasonable for the BLM to formulate a low-budget alternative that meets resource objectives. The low level management alternative presented in the DEIS takes this concept to an extreme, and thus doesn't really provide a meaningful option.

At the same time, the DEIS never really presents the economic analysis to tell the public whether the massive investment of taxpayer dollars proposed in the preferred alternative is really worth it. In other words, the BLM makes no attempt to identify those areas that can produce livestock well, just as there's no attempt to identify which lands will produce good wildlife populations. Consequently, there's no opportunity for the public to weigh and balance competing resource uses. The BLM's solution to the problem as presented in this DEIS is simply to allocate as much forage to livestock as possible, on the misguided assumption that if the range is improved for livestock, it will also be improved for wildlife. The range may be in good or excellent condition, but if the livestock are removing 50% or more of the vegetation (and certainly it will be more in riparian areas), wildlife isn't receiving any of the benefit of that good range condition. This grazing document fails to establish any targets or objectives for wildlife habitat--it's geared totally toward maintaining range condition and allocating AUMS to livestock. As far as I can tell, there's been no effort to allocate AUMs to wildlife. But if 50% is allocated to cattle, on the basis that's how much the plants can sustain without deterioration, excessive wildlife usage will reduce the condition of the range, while reducing habitat quality for those species that need more ground cover for nesting, security or thermal cover.

Unlike other management plans I have read, the Billings Resource Area DEIS idea of wildlife management seems limited to building duck boxes or constructing fish ponds. There's very little effort to integrate the grazing, mining and logging plans with a wildlife plan; there's even little acknowledgment about what impacts these programs might have on wildlife.

Regarding the sagebrush burning, for instance, one might logically assume that if 18% of the federally managed antelope winter range and 25% of the sage grouse mating and nesting areas were destroyed, it might have some impact on populations (page 149). But on page 151 we're told wildlife habitat conditions would improve for upland birds and antelope. These seemingly contradictory statements aren't explained.

117-3

Defenders OF WILDLIFE

Similarly, the DEIS predicts benefits from logging activities in the Billings Resource Area, as if there were a dense forest canopy like in parts of western Montana. The plan doesn't consider that these areas may be important to wildlife for security areas, thermal cover, or sheer diversity.

A One of the bright spots in the plan was the wilderness recommendation in the preferred alternative for the Pryor Mountain and Burnt Timber Canyon areas. Both are certainly suitable and meritous of such a designation. The Twin Coulee area also deserves such a recommendation; even if it is not managed as wilderness, its roadless values should be maintained.

Regarding disposal of BLM lands in the Billings Resource Area, Defenders of Wildlife believes actual land sales should be kept at an extremely low level, and the emphasis instead should be on land exchanges and trades that promote recreational opportunity and protect wildlife habitat. It's crucial, given the lack of federal funds to buy land, that the BLM doesn't sell those lands that might be used for possible exchange. Defenders of Wildlife also supports the site-specific comments on the asset management program submitted by the Montana Wildlife Federation.

In closing, I'd like to reiterate my view that the Billings Resource Area Management Plan is grossly inadequate for several reasons, and markedly inferior to earlier RMPs and grazing EISs. Its primary flaw is the lack of site-specific information that allows the reader to understand and make meaningful judgments about appropriate land management options. It's impossible for the reader to understand how the BLM gets from point A to point B, or in this case, from more than 40% of the Billings Resource Area in fair or poor condition to a 38% increase in AUMs. Further, the limited range of alternatives keeps the reader from understanding what the true range of management options might be, and hampers him from comparing one management option to another. Fimally, this plan seems terribly out of line with anticipated funding levels for the BLM for the next several years. It fails to give the public a sense of where the best places to invest dwindling funds might be, yet these undoubtably will be the kinds of choices the BLM will be making concerning these public lands over the next twenty years.

This is clearly the worst BLM grazing statement for Montana I've yet reviewed, and I would strongly recommend it be rewritten; as it stands, it marks a breakdown in the BLM planning process.

Sincerely,

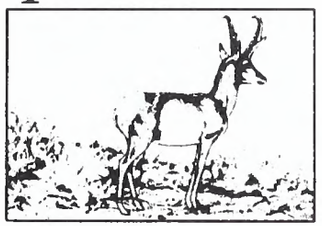
Hank Fischer

HANK FISCHER, Montana Rep.
Defenders of Wildlife
1534 Helena Ave.
Missoula, MT 59801

Letter No. 117 — Hank Fischer, Defenders of Wildlife, Missoula, Montana

Response No. 117 — Thank you for your comment.

118-1



...To explore, enjoy and preserve the nation's forests, waters, wildlife and wilderness...

Sierra Club

Yellowstone Basin Sierra Club Group
~~2935 Rimview Dr.~~, Billings, MT ~~59102~~
9432 N. 30th 59101

RECEIVED
BILLINGS RA

JUL 15 '83

USDI			BLM
AM___	RANGE___	MIN___	
RES. T (OPS)___		REC___	
RES. T___		LANDS___	
ENV. ED___		WLDLF___	
ADM___	FILE___	ACTION___	
PLAN		—	—

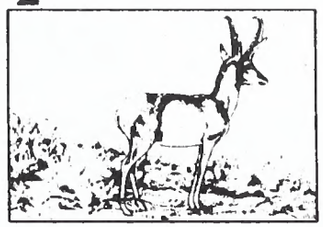
Department of Interior
BLM - Lewistown District
Billings Resource Area

Dear Sirs:

I have several comments regarding the draft EIS RMP for the Billings Resource area. The first and foremost is that there has not been sufficient Time allowed to do an adequate evaluation. I would like, therefor, to formally request an additional 30-60 day period during which comments will be accepted.

We of the Yellowstone Basin group of the Sierra Club are opposed to any disposal of public lands at this time unless it can clearly be shown to be in the public interest. That approximately 15% of the lands studied for land tenure adjustment is identified for disposal is unquestionably excessive and is unacceptable.

118-2



...To explore, enjoy and preserve the nation's forests, waters, wildlife and wilderness...

Sierra Club

Yellowstone Basin Sierra Club Group
~~2935 Rimview Dr.~~, Billings, MT ~~59102~~
9432 N. 30th 59101

In addition, difficulty of management seems generally inappropriate as a criterion for disposal.

We are generally opposed to ORV use on BLM lands. Specifically, due to numerous complaints from members and others about noise + dust pollution in the South Hills area near Billings, we ask that all ORV activity in the South Hills be eliminated.

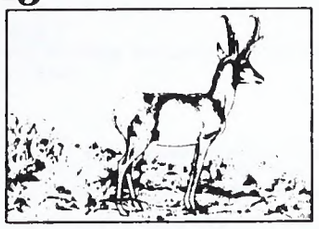
We recommend that the following WSAs be recommended for wilderness.

A

1. Twin Coulee 6,870 acres
2. Pryor Mountain 16,920 acres
3. Burnt Timber Canyon 3,955 acres
4. Bighorn Tack-on 4,550 acres

Note: in conversation with Homer Krause, Superintendent of Bighorn Canyon NRA, he indicate that they would like the Bighorn Tack-on recommended for Wilderness

118-3



...To explore, enjoy and preserve the nation's forests, waters, wildlife and wilderness...

Sierra Club

Yellowstone Basin Sierra Club Group
~~2935 Plainview~~ Dr., Billings, MT 59102
1453 N. 30th Billings, MT 59101

There are many more comments that need to be made, hence the request for additional time, and failure to comment further herein does in no way indicate acceptance or approval of the RMP as a whole.

Respectfully
Daryle R. Murphy
Chair
Yellowstone Basin Group
Sierra Club

Letter No. 118 — Daryle R. Murphy, Sierra Club, Billings, Montana

Response No. 118 — Thank you for your comment.

119-1

MINERALS EXPLORATION COALITION

Minerals Advocate
Public Policy

4200 West Cedar Drive
P.O. Box 15638
Denver, Colorado 80215
303/989-5567

DEPT OF INTERIOR
BUR. OF LAND MANAGEMENT
1983 JUL 19 AM 9 08
MONTANA STATE OFFICE
BILLINGS, MONTANA

July 14, 1983

RECEIVED
BILLINGS RA
JUL 20 '83
USDI BLM
AM___ RANGE___ MIN___
RES. T (OFS)___ REC___
RES. T ___ LANDS___
ENV. ED___ WLDLF___
ADM___ FILE___ ACTION___
PLAN ___ ___

Mr. Michael J. Penford
State Director
Bureau of Land Management
P.O. Box 30157
Billings, MT 59107

Dear Sir:

This letter constitutes the written comments of the Minerals Exploration Coalition (MEC) on the Billings Resource Area Draft Environmental Impact Statement and Resource Management Plan. The MEC represents mineral exploration companies and individuals conducting hard minerals exploration on federal land.

A

In view of the fact that wilderness areas designated after December 31, 1983, will be withdrawn from appropriation under the mining and leasing laws, we believe that all areas with mineral and energy potential should be excluded from wilderness designation, even though no economic deposit is now known. The withdrawal limitations will preclude the collection of new data, and new areas of mineral potential will not be found. With new discoveries effectively stopped, the policy of excluding all currently known mineral potential from wilderness should be followed, so that exploration of these areas will not be restricted and minerals might yet be produced. Explorationists tend to look at the long term because the lead time of discovery may be ten to fifteen years. The impact of wilderness on minerals should be assessed over the long term (a century or more). We believe that land use decisions should be in conformity with the policy statements made in the National Minerals Program Plan and Report to Congress released by the President in April, 1982.

The preparers of the DEIS/RMP have identified the major minerals to be found in the area. The coal and oil and gas production

Letter No. 119 — John D. Wells, Mineral Exploration Coalition, Denver, Colorado

Response No. 119A — It is true that designated wilderness areas will be withdrawn from mineral appropriation, subject to valid existing rights. However, the USGS/BM mineral report (USGS Bulletin No. 1723) summarized potential as follows:

> The USBM (U.S. Bureau of Mines) and the USGS (U.S. Geological Survey) assessed the identified mineral resources (known) and the mineral resource potential (undiscovered) of the Pryor Mountain (MT-067-206), Burnt Timber Canyon (MT-067-205), and Big Horn Tack-On (MT-067-207) Wilderness Study Areas in Montana and Wyoming. There are no identified resources in the study areas. The mineral resource potential for uranium and vanadium is high or moderate in parts of the Pryor Mountain Wilderness Study Area, high in part of the Burnt Timber Canyon Wilderness Study Area, and moderate in the entire Big Horn Tack-On Wilderness Study Area. The mineral resource potential for uranium and vanadium is low in the remainder of the wilderness study areas. The southern part of the Pryor Mountain Wilderness Study Area has moderate mineral resource potential for bentonite. All three wilderness study areas have low potential for all metals (other than uranium and vanadium), oil and gas, geothermal sources, and high-purity limestone. There is no potential for sand and gravel in the wilderness study areas.

For further discussion, please see the mineral discussion in Chapters 2, 3, and 4 of this FEIS.

The USGS/BM will not prepare a mineral report for the Twin Coulee WSA, because the proposed action is nonsuitable for wilderness. Within the Twin Coulee WSA, there are no known mineral deposits other than limestone. The Heath formation ("oil"

119-2

figures and descriptive data adequately summarize exploration and development potential for these commodities. The Industrial Minerals section summarizes the known and probable mineral occurences in the area.

The Preferred Level Management appears to provide the natural resource industry with the flexibility required to permit exploration and development. However,

B the portion of the Pryor Mountains WSA and Burnt Timber Canyon WSA covered by mineral claims and other areas with mineral or energy potential, should be excluded from the proposed wilderness areas.

C The Burnt Timber Canyon and Big Horn Tack-On areas, which are less than 5,000 acres, are listed as ineligible for consideration as wilderness in the Federal Register of December 31, 1982, p.58372. These areas should not be considered further for wilderness designation.

Thank you for the opportunity to comment on the plan and the DEIS.

Sincerely,

John D. Wells

John D. Wells
President
MINERALS EXPLORATION COALITION

JDW/th

and metalliferous shales) is south of the WSA. The potential for discovery of a valuable mineral deposit within the area is very low.

Response No. 119B — Only the Pryor Mountain WSA contains mining claims. Since these claims were located before the passage of FLPMA, and recorded under 43 CFR 38331, the claimant may impair wilderness suitability, if necessary, within the claim areas, if they are determined to be valid. The development potential for all three wilderness study areas proposed for wilderness designation is considered low and mineral development is not anticipated.

Response No. 119C — The *Federal Register* of December 31, 1982 listed those areas that did not contain 5,000 acres of public land and had been improperly identified for wilderness study under Section 603 of FLPMA. However, the BLM has authority to study areas of less than 5,000 acres with identified wilderness values under the resource planning authority of Section 202 of FLPMA. The Montana State BLM Director chose to conduct wilderness studies for both Burnt Timber Canyon and Big Horn Tack-On. The authority under which these areas were to be studied and a listing of affected study units was published in the *Federal Register* of Tuesday, May 10, 1983; Volume 48, No. 91, pages 21000-21002.

120-1

Hope Ryden
345 East 81at Street
New York City 10028
July 9, 1983

RECEIVED
BILLINGS RA
JUL 12 '83

USDI BLM
AM____ RANGE____ MIN____
RES. T (OFS)____ REC____
RES. T____ LANDS____
ENV. ED____ WLDLF____
ADM____ FILE____ ACTION____
PLAN ____ ____

Mr Jerry Jack
Bureau of Land Management
Billings, Montana
59101

Dear Mr Jack,

Have just returned from my atint in northern Minnesota at an eagle nest and have quickly turned my attention toward putting my thoughts on paper regarding the alternatives proposed in the draft EIS. Please include the material enclosed in the official record. I also will be sending a photograph of "Scarbottom" along for the record to illustrate my objection to seven miles of fencing.

I want to thank you for attending to the wire cut injuries incurred by the above stallion "Scarbottom." I hope the treatments put him on the road to recovery. I would be most interested in learning of the outcome of your efforts to treat him.

My wild horse count turned up 128 horses, 16 of which were foals of the year. I expect a limited number of foals may yet be born, but likely the majority had come into this world by the date I left (June 9). I cannot see any good purpose will be served by conducting a roundup this year. Surely it ought not be necessary to roundup 7 excess horses at great cost to the taxpayer and to the horses themselves. The earlier plan to roundup 30 to 40 horses was obviously based on expectation of a large foal crop which did not occur. Nature does some managing, believe it or not. I suggest you wait a year before taking off more horses. It is interesting that nearly all of the foals born this year happened to be male--a stroke of good fortune. I would not eliminate foals in this year's class at all. What few females have been born will be important to future breeding and the males will help to solve the problem of a skewed sex ratio.

Yours truly,

Hope Ryden

120-2

STATEMENT BY HOPE RYDEN ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE BILLINGS MONTANA RESOURCE AREA

JULY 1983

120-3

I am the author of three books on wild mustangs, including AMERICA'S LAST WILD HORSES, which received the Oppenheimer Award for the best book published in 1970 in the category of Americana. This book was also listed by the Library Journal in its roundup of best books published in 1970 on science and technology. My comments on the proposed management alternatives for the Pryor Mountains reflect my longstanding interest in the horses that inhabit the area. Over the past fifteen years, I have returned repeatedly to observe, study and census the herd.

I appreciate the opportunity to review the draft EIS and have found a number of sound ideas are contained in it. I regret , however, that the statement fails to present options which recognize the primacy of wild horses in this area that has been specifically set aside for their use by special act of the Secretary of the Interior in 1969. In fact, in all four alternatives explored, horse numbers have been limited to 121 animals---a figure I regard to be arbitrary for several reasons. In the first place, it does not take into account the fluctuating age and sex structure of a herd. Moreover, the figure does not take into account the fluctuating state of the range during wet and dry years. In fact, this figure was computed on the basis of a one-time assessment of range conditions conducted after a lengthy period of virtually no rainfall.

I do not, however, intend to base mycase for increasing the limit placed on horse numbers on these lapses. Instead, I wish to call your attention to the fact that the conversion rate used (of 1.25 AUMs) to calculate the number of horses the range can support is no longer supported by scientific findings. (see attached reference to study made by Rittenhouse, et al, in 1982 at Colorado State University and reported by the National Academy of Science Committee in its FINAL REPORT on WILD AND FREE-ROAMING HORSES AND BURROS.

Rittenhouse has found that within the range of mature animals, weight is not a significant factor in determining how much forage an individual will consume. Lactation, on the other hand, is a determining factor. A lactating mare, on average, consumes 14% more forage than does a lactating cow. A non-lactating mare consumes 7% more forage than does a non-lactating cow. A lactating cow consumes 17% more forage than does a non-lactating horse (12.2 kg per day and 10.4 kg per day respectively). Since a herd of cattle is normally composed for the most part of lactating animals (ranchers artfully manipulate their herds to obtain this condition by selling off males and non-breeding females)------and since wild horse herds are normally made up of a majority of non-lactating animals (even in the Pryor Mountains where females outnumber males, annual foaling does not exceed 25%)---it is likely that a herd of cattle and a herd of wild horses consume the same amount of forage. Certainly, the evidence does not support the use of a 1.25% conversion rate cows to horses.

Given this new information, the Pryor Mountains Wild Horse Range ought to be able to support 152 wild horses based on the range study upon which forage availability was determined (notwithstanding my opinion that this range study was biased and underestimated the forage production of the area). I call your attention to the fact that other BLM districts are assigning 1 AUM per wild horse head as a result of this finding (see Southern Malheur District draft EIS from Southeastern Oregon).

A second point I would like to comment on is that of the cost of rounding up a single horse---listed as $700 in the BLM's draft EIS. If, as I have been told, salaries of staff personnel are being projected into this assessment, I would like to say that it will not save the taxpayer much money whether horses are rounded up for adoption, shot, or left alone. A more realistic way of viewing possible economies would require that these ongoing costs be excluded. Dr Frederic Wagner of Utah State University, who is chairman of the National Academy of Science Committee to study Wild and Free-Roaming Horses and Burros, noted that "removal costs decline as roundup and adoption procedures become more standardized and efficient." He also has asked why the government makes such an issue over supporting the wild horse program while willingly paying the way of animals in national parks and refuges.

120-6

Rounding up horses too frequently is obviously an extravagence. The NAS Committee recommended, among other things, that herds be ro unded up every few years rather than annually or semi-annually.

Amother proposal made in the draft EIS---to correct the current imbalance of mares to stallions in the Pryor Mountain herd--is one with which I concur. As a consequence of the misguided disposition of 60 stallions in the early 1970s, the sex ratio of this herd is now skewed to favor mares by 2:1. Normally, a herd would consist of roughly the same number of males and females. Obviously,. by removing some breeding females and retaining males , rate of annual increase will be slowed down. Making this correction will also give a boost to the gene flow, allowing more exchange of mares among a greater number of stallions.

My only concern on this proposal is that the BLM may carry the idea too far and create a herd that is too "heavy to studs," as suggested by language on page 35. Not only would this disrupt normal social interactions in a species that has evolved a polygamous pattern of association, it might even threaten the long range survival of the Pryor Mountain herd. Skewing the sex ratio to favor studs---were this to be done in a limited way---would require that the BLM pay strict attention to the preservation of young age classes of females in order to safeguard future breeding. In any case, balancing the herd ought to be done and will pay off in many ways. It can be accomplished gradually through the disposition of females and the retention of males when reductions must be made.

120-7

A related point made in the draft EIS is the suggestion that unique characteristics of the Pryor Mountain horses be preserved. I agree. I believe this can also be accomplished gradually through the disposition of less characteristic animals when reductions are necessary. Moving stallions about to promote breeding, on the other hand, ought not be done. Any such manipulation for above stated purpose would be counter to nature's greater purpose, which is to perpetuate the genes of the strongest males.

This raises the question of how much manipulation of horses ought to be done at all. On page 149 of the EIS the "high level management" alternative contemplates a degree of grazing regulation and other manipulation to which I object. While I concede that on occasion it may be necessary to relocate a particular band due to unusual circumstances, I oppose this as standard practice. The high level management alternative also would authorize such activities as mineral exploration and timbering. These would be most intrusive and harmful to the herd. The point which seems to have been missed in this draft EIS is that the area has been specifically set aside for the wild horses that live here by an act of the Secretary of the Interior in 1969. This herd of mustangs ought not be managed under the multiple-use commitment designated for BLM lands in general. This herd of horses was protected prior to the passage of the Wild and Free-Roaming Horse and Burro Act and ought not be regulated in the same manner and to the same degree as horses that occur elsewhere.

A question arises whether a "wilderness" designation might not conflict with the present desgnation of the area as a wild horse range. Implicit in the draft EIS language is a hint thet such might be the case. (page 160) For this reason I oppose any such a designation which could "reduce management options". At the same time I have conferred with Senator Henry Jackson's staff on this question and been assured that the horses' status will not be threatened by a wilderness classification. But since the question might have to be thrashed out and would invite the involvement of conflicting interests who might oppose the wild horse range, I oppose this plan.. Moreover, I believe the horses and other fauna in the Pryor Mountains would be increasingly disturbed by reereation seekers were the area to be proclaimed "wilderness." A

The draft EIS also proposes that seven miles of fencing be constructed. Where? And why? Fencing is extremely dangerous to wild animals. They become hung up or cut on the barbed wire. A Pryor Mountain stallion was severely wounded on an existing fence this spring and required help from the BLM as a result. Surely seven miles of fencing is not in the best interest of the herd. I am submitting a photograph of the injured stallion to underscore the hazards posed by fences.

A further request for 5 new water cachements amazes me. During the many years I have censused the wild Horses, I have yet

Letter No. 120 — Hope Ryden, New York, N.Y.

Response No. 120A — A reference to long-term significant impacts on wild horse management as a result of wilderness designation was made in the third paragraph on page 160 of the RMP/DEIS. This reference to impacts was overstated. The proposed actions presented in this document recommend wilderness designation for the Pryor Mountain, Burnt Timber Canyon, and Big Horn Tack-On WSAs. The only potential impacts on wild horse management would be the location and type of new range developments which might be allowed. Facilities would have to be installed so as not to impair wilderness characteristics. The proposed action for these three WSAs would ensure continuation of a healthy wild horse herd, which BLM construes as a major supplemental value of wilderness. In addition, wilderness designation would prohibit any major surface disturbing activity that could adversely impact wild horses.

Our estimates of increased use under wilderness designation is a one decade "jump" in use followed by a return to current trends. Our judgment is that this would not impact the wild horse or other resources. The Pryor Mountain Wild Horse Range designation and management is to be maintained under the proposed action and all alternatives.

to see the two existing water cachements put to use. I should think thst taxpayers would object to financing the construction of five more of these expensive devices which, heretofore, have only served to tesse the horses with the smell of wster that has been shut off to them. Moreover, water stored under the tarpaulin covers is not even svailsble to the surrounding vegetation. I would need evidence thst the BLM is putting existing water cachements to use before advocating that more money be spent for the construction of sdditional ones.

On the other hsnd, I firmly support the draft EIS proposal to purchase 2,240 scres of stste snd private land to be incorporated into the horse rsnge. This lsnd, I understand, is currently under lesse by the BLM and is being used by the wild horses. I would hope that purchsse of the land, which is being offered for sale, will be made promptly before it is sold to some other buyer.

Thank you for this opportunity to comment on the drsft EIS. I look forwsrd to receiving s response to seversl of the questions I have rsised snd hope thst the points I made will prove useful.

(1) enclosure

A photograph of the Pryor Mountain stallion injured by a wire fence will follow under separate msil.

vegetation type of southeastern Oregon are fundamentally grass eaters.

Forage Consumption Rates and Animal Unit Equivalents Knowledge of the daily quantity of forage dry matter consumed by an animal of given size and physiological status (i.e., lactating, nonlactating) is a fundamental starting point for calculations of grazing capacity and is a factor in decisions for allocating the common forage reserve among various sympatric animal species. By virtue of anatomical differences in the configuration of tne gastrointestinal tracts of horses and cattle, numerous researchers have tneorized that a horse of a given size or body weight can consume more forage than a comparable-sized cow. Therefore, suspicion has existed that the standard procedure for calculating animal unit equivalents may be inappropriate for horses. This is discussed at length in the Phase I Report.

The accepted definition of an animal unit (AU) is a 455 kg (1,000 lb) cow or her equivalent (Society for Range Management, 1974). To convert among animal species, one merely divides the body weight (kg) of the animal in question by a factor of 455. The sophistication of this approach may be enhanced by using metabolic body weights, i.e., body weight (kg) raised to the fractional exponent of 0.75, divided by 455 also raised to the 0.75 power. However, the additional accuracy achieved by this procedure is open to question, and the use of simple body weights (i.e., weight to the power of 1) is the usual convention.

Since there is virtually no available literature concerning forage intake rates by the wild horses, the Colorado work by Rittenhouse and his associates (1982) was initiated during Phase II. These studies were conducted on a 400-ha tract of rangeland located some 8 km southwest of Durango, Colorado. Plant communities on the area included sagebrush-grass associations, open grassland parks, ponderosa pine woodlands, mountain meadows, and dense stands of gambel oak. Although no populations of feral equids are known in the general area, vegetation and topographic features are similar to those found on some of the other areas of the West where wild horses occur. Thus, some of the vegetation-related findings should be directly applicable to such areas. The more important question is the differences or similarities between horses and cattle occupying a common range, and results relating to this should be broadly applicable.

Findings were based on total fecal output measurements from animals equipped with fecal collection devices. These indicated that mares, on the average, consumed about 14 percent more forage dry matter (12.5 kg per head per day) than did cows (11.0 kg per head per day). However, a substantial difference of about 20 percent was noted between lactating mares (14.6 kg per head per day) and lactating cows (12.2 kg per head per day). Nonlactating mares and cows consumed 10.4 and 9.7 kg per head per day, respectively.

A surprising result of the Colorado research was that forage consumption by horses was not related to animal body size (weight), within the range of mature animal weights studied (367 kg to 578 kg

per head). This led the researchers (Rittenhouse et al., 1982) to conclude ". . . when comparing intake for horses and cows of approximately the same body sizes, reporting intake on a per body size basis may be more confusing than helpful."

Utilization of nutrients (as measured by apparent digestion coefficients) was higher in cows than in mares, with the exception of protein that was digested more thoroughly by mares (44 percent versus 36 percent). Cows digested (cell wall constituents) much more extensively (65 percent) than did mares (53 percent). The rate of passage of food material through the alimentary tract of cows was considerably slower than through mares, hence the longer residence time of ingesta in cows partially accounted for the higher fiber digestion. Theoretical concepts relating to consumption rates in equids and ruminants are discussed in considerable detail in the Phase I Report.

Although some need further research, results from this study carry potentially important implications for wild horse management. Findings on consumption rates add support to the practice noted in the Phase I Report (see p. 97) of attributing an animal unit equivalent of 1.25 to mature horses. Although this value appears high in light of the current Colorado results (i.e., an average 14 percent greater forage consumption by mares), unreported evidence suggested that the 14 percent difference was conservative (L. R. Rittenhouse, personal communication, 1982). The difference appeared to hold over a fairly wide range of forage quality conditions.

The findings also raise the temptation to speculate on relative adaptive strategies of horses and cows. Differences in passage rates of ingesta would appear to confer an advantage on horses over cattle under poor forage conditions. For example, horses would appear to be able to consume more forage per day to compensate for the low nutrient concentrations, whereas cows (and other ruminants) would not. Horses are well equipped to extract the scarce quantities of dietary protein that are usually nutritionally limiting under such conditions. Behavioral attributes, such as the greater mobility of horses would also appear advantageous; they could quickly move to alternate areas when forage became scarce. However, the appropriate data to test hypotheses relating to competition definitively are still insufficient. This statement is not intended to detract in any way from the major contribution made by the Colorado researchers to our knowledge of nutrition and grazing ecology of horses and cows. The reader is encouraged to refer to their original report (Rittenhouse et al., 1982) for details.

Habitat Preference and Use The problem of making decisions on forage allocations to combined populations of horses and livestock, and of assessing competition between the two, is a more complex one than can be solved with measurements of dietary overlap alone. For, in an oversimplified case, if horses and cattle chose very different habitats on the basis of topography or vegetation type, there would obviously be no chance for interspecific competition even though they fed on the same plant species. And all of the allowable forage offtake

GLOSSARY

ACCELERATED EROSION — Erosion processes increased by the activities of man. See "EROSION".

ALLOTMENT — An area of land where one or more livestock operators graze their livestock. Allotments generally consist of BLM lands but may also include state owned and private lands. An allotment may include one or more separate pastures. Livestock numbers and seasons of use are specified for each allotment.

ALLUVIUM — Soil and rock debris deposited by streams.

ANIMAL UNIT MONTH (AUM) — A standardized measurement of the amount of forage necessary for the complete sustenance of one animal for 1 month; also, the measurement of the privilege of grazing one animal for 1 month.

AQUATIC — Living or growing in or on the water.

AQUIFER — A rock formation, group of rock formations or part of a rock formation that contains enough water-saturated permeable material to yield water to a spring or well.

BROWSE — To browse is to graze a plant; also, browse (noun) is the tender shoots, twigs and leaves of trees and shrubs often used as food by cattle, deer, elk and other animals.

CANOPY COVER — The percentage of ground covered when a polygon drawn around the extremities of the undisturbed canopy of each plant is projected on the ground and all such projections on a given area are added together.

CATCHMENT — A structure built to collect and retain water.

CHANNEL — An open conduit either naturally or artificially created which periodically or continuously contains moving water or forms a connecting link between two bodies of water.

CHANNEL STABILITY — A relative term describing erosion or movement of the channel walls or bottom due to waterflow.

CHARACTERISTIC LANDSCAPE — The established landscape in an area, not necessarily a natural area. It could refer to a farming community, urban area or any other landscape which has an identifiable character.

CHERRY-STEMMED ROAD — A road that enters but doesn't pass completely through a wilderness study area.

CLASSIFICATION AND MULTIPLE USE ACT (C&MU ACT) — An act to authorize and direct that certain lands exclusively administered by the Secretary of the Interior be classified in order to provide for their disposal or interim management under principles of multiple use and to produce a sustained yield of products and services, and for other purposes.

CLAYEY — A soil containing more than 35% clay. The textural classes are sandy clay, silty clay, clay and clay loam and silty clay loam.

CLAYPAN — A dense, compact layer in the subsoil having a much higher clay content than the overlying material from which it is separated by a sharply defined boundary.

CLIMAX — The highest ecological development of a plant community capable of perpetuation under the prevailing climatic and soil conditions.

COMPACTION — The process of packing firmly and closely together; the state of being so packed, e.g., mechanical compaction of soil by livestock or vehicular activity. Soil compaction results from particles being pressed together so that the volume of the soil is reduced. It is influenced by the physical properties of the soil, moisture content and the type and amount of compactive effort.

CORRIDOR — A strip of land usually a few to many times the width of a right-of-way through which one or more existing or potential facilities may be located.

CRITICAL WILDLIFE HABITAT — The area of land, water and airspace required for the normal needs and survival of an endangered species.

CRUCIAL WILDLIFE HABITAT — Parts of the habitat necessary to sustain a wildlife population at critical periods of its life cycle. This is often a limiting factor on the population, such as breeding habitat, winter habitat, etc.

CULTURAL RESOURCES — A term that includes items of historical, archeological or architectural significance which are fragile, limited and nonrenewable portions of the human environment.

CULTURAL SITE — Any location that includes prehistoric and/or historic evidence of human use.

DESIGNATED CORRIDOR — A linear area of land with legally defined and recognized boundaries and capacities having ecological, technical, economic, social or similar advantages over other areas for the present or future location of transportation or utility rights-of-way, and which have been identified and designated by legal public notice.

DRAINAGE (INTERNAL SOIL) — The property of a soil that permits the downward flow of excess water. Drainage is reflected in the number of times and in the length of time water stays in soil.

ECOLOGICAL RANGE CONDITION CLASSES — Four classes used to express the degree to which the composition of the present plant community reflects that of climax. They are:

Range Condition Class	Percentage of Present Plant Community That is Climax for the Range Site
Excellent	76-100
Good	51-75
Fair	26-50
Poor	0-25
High Good Condition	65-75% of climax. A condition score of 65-75.
Low Good Condition	51-64% of climax. A condition score of 51-64

ENDANGERED OR THREATENED SPECIES — Determined for plants and animals by one or a combination of the following factors:

1. The present threatened destruction, modification or curtailment of a species habitat or range.

2. Over-utiliztion of a species for commercial sporting, scientific or educational purposes.

3. Disease or predation of the species.

4. The inadequacy of existing regulatory mechanisms.

5. Other natural or human caused factors affecting a species' continued existence.

ENVIRONMENTAL IMPACT STATEMENT (EIS) — A written analysis of the impacts on the environment of a proposed project or action.

EPHEMERAL STREAM — A stream that flows only after rains or during snowmelt.

EROSION — The wearing away of the land surface by running water, wind, ice or other geological agents.

EROSION SUSCEPTIBILITY — The susceptibility of a soil to erosion when no cover is present. The rate of soil displacement depends on the physical properties of the soil, rainfall intensity and slope gradient.

EXCLUSION AREAS — Land areas determined to be unavailable for corridor allocation or facility siting for reasons of unsuitability, legislative classification or prior, unalterable allocation to uses in incompatible with facility siting.

EXPOSURE — Direction of a slope in respect to points of the compass.

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLPMA) — Public Law 94-579. October 21, 1976, often referred to as the BLM's "Organic Act", which provides the majority of the BLM's legislated authority, direction, policy and basic management guidance.

FLOODPLAIN — The relatively flat area or lowlands adjoining a body of standing or flowing water which has been or might be covered by floodwater.

FORB — A broad-leafed herb that is not grass, sedge or rush.

FOREST LAND — Land which is now, or is capable of being at least 10% stocked by forest trees, and is not currently developed for nontimber use.

FORMATION — A sequence of rock strata which are recongnizable over a large area.

GEOMORPHIC — Pertaining to the form of the earth or its surface features.

GROUND COVER — Vegetation, mulch, litter, rock, etc.

GROUNDWATER — Water contained in pore spaces of consolidated and unconsolidated surface material.

HABITAT — A specific set of physical conditions that surround a species group of species or a large community. In wildlife management, the major constituents of habitat are considered to be food, water, cover and living space.

HUNTER DAY — One person hunting during any part of one day.

HYDROLOGY — The science dealing with the behavior of water as it occurs in the atmosphere, on the surface of the ground and underground.

IGNEOUS ROCKS — Rocks formed by solidification of molten earth materials. Intrusive igneous rocks are those solidified beneath the surface of the earth; extrusive igneous rocks emerged at the surface as molten material before solidifying (e.g., lava).

INFILTRATION — The penetration of water into the soil surface through pores of the soil. The rate and amount of infiltration is limited by the size and abundance of pores, organic matter content and the water absorption capacity of the soil.

INHOLDINGS — State or privately-owned lands inside a wilderness study area.

INTERIM MANAGEMENT POLICY AND GUIDELINES FOR LANDS UNDER WILDERNESS REVIEW (IMP) — A BLM document, dated December 12, 1979, which defines the policy for management of Wilderness Study Areas until a final determination on wilderness designation is made by Congress.

INTERMITTENT STREAM — A stream which flows most of the time but occasionally is dry or reduced to pool stage.

KEY SPECIES — Major forage species on which range and wildhorse management should be based.

KNOWN GEOLOGIC STRUCTURE (KGS) — Areas known to contain producible oil and gas deposits.

LEASABLE MINERALS — Minerals subject to lease by the Federal Government including oil, gas and coal.

LOCATABLE MINERALS — Generally the metallic minerals subject to development specified in the Federal Mining Law of 1872.

MANAGEMENT FRAMEWORK PLAN (MFP) — A planning decision document that establishes for a given area, land use allocations, coordination guidelines for multiple use or protection. It is the BLM's land use plan. An MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development and (3) decision making.

MINERAL ENTRY — The location of mining claims by an individual to protect his right to a valuable mineral.

MITIGATION MEASURES — Methods or procedures committed to by BLM for the purpose of reducing or lessening the impacts of an action.

MULTIPLE USE — Balanced management of the various surface and subsurface resources, with permanent impairment of the productivity of the land, that will best meet present and future needs.

NATURAL GEOLOGIC EROSION — The wearing away of the land's surface by running water, wind, ice or other geological agents, unaffected by human activities.

OFF-ROAD VEHICLE (ORV) — Any motorized track or wheeled vehicle designed for cross-country travel over any type of natural terrain.

OFF-ROAD VEHICLE DESIGNATIONS —

OPEN — Designated areas and trails where off-road vehicles may be operated (subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343).

LIMITED — Designated areas and trails where the use of off-road vehicles is subject to restrictions such as limiting the number or types or vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and trails, or limiting use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use.

Combinations of restrictions are possible such as limiting use to certain types of vehicles during certain times of the year.

CLOSED — Designated areas and trails where the use of off-road vehicles is permantently or temporarily prohibited. Emergency use of vehicles is allowed.

OUTSTANDING — Standing out among others of its kind; conspicuous, prominent or, superior to others of its kind, distinguished, excellent as used in the description of wilderness characteristics.

PEAK DISCHARGE — The highest stage or channel flow attained by a flood, usually expressed as the volume of water in cubic feet passing a given point in a one second time period, hence, cubic feet/second.

PERENNIAL (PERMANENT) STREAM — A stream which flows 9 or more months out of a year.

PERMIT (GRAZING) — An authorization that permits the grazing of a specified number and kind of livestock on a designated area of BLM lands for a period of time, usually not more than 1 year.

PLANT SUCCESSION — The process of vegetative development whereby an area becomes successively occupied by different plant communities of higher ecological orders.

POST-FLPMA LEASES — Mineral leases issued after passage of the Federal Land Policy and Management Act of October 21, 1976.

PRE-FLPMA LEASES — Mineral leases issued pryor to passage of the Federal Land Policy and Management Act of October 21, 1976.

PRIMITIVE RECREATION — Nonmotorized outdoor recreation that requires undeveloped areas in which to take place as used in describing wilderness opportunities.

PRODUCTIVE FOREST LAND — Forest land that is capable of yielding at least 20 cubic feet of wood per acre per year of any tree species.

PROPER USE — The degree and time of use of the current year's plant growth which, if continued, will either maintain or improve the range condition consistent with conservation of other natural resources.

PUBLIC LANDS — Any land and interest in land (outside of Alaska) owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management.

PUBLIC PARTICIPATION — Part of BLM's planning system that provides the opportunity for citizens as individuals or groups to express local, regional and national perspectives and concerns in the rule making, decision making, inventory and planning processes for public lands. This includes public meetings, hearings or advisory boards or panels that may review resource management proposals and offer suggestions or criticisms for the various alternatives considered.

RANGE CONDITION — The present state of vegetation of a range site in relation to the climax plant community of that site. It is an expression of the relative degree to which the kinds, proportions and amounts of plants in a plant community resemble that of the climax plant community for that site. Range condition is basically an ecological rating of the plant community. Air-dry weight is the unit of measure used in comparing the composition and production of the present plant community with that of the climax community.

RANGE DEVELOPMENT — A structure, excavation, treatment or development to rehabilitate, protect or improve public lands to advance range betterment. "Range Development" is synonymous with "Range Improvement."

RANGE FACILITIES — Any structure or excavation such as water sources, shade sources, oilers, etc., designed to facilitate range management.

RANGE IMPROVEMENT — The same as "Range Development."

RANGE SITE — A distinctive kind of rangeland in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differs from that of other range sites in the kind or proportion of species or in total production.

RANGE TREND — The direction of change in range condition and soil.

RECREATIONAL OPPORTUNITY — Those outdoor recreation activities which offer satisfaction in a particular physical, social and management setting in the EIS areas, these activities are primarily hunting, fishing, wildlife viewing, photography, boating and camping.

RESIDUAL GROUND COVER — That portion of the total vegetative ground cover that remains after the livestock grazing season.

RIPARIAN AREA — A specialized form of wetland with characteristic vegetation restricted to areas along, adjacent to or contiguous with rivers and streams, also, periodically, flooded lake and reservoir shore areas, as well as lakes with stable water levels.

RUNOFF — The water that flows on the land surface from an area in response to rainfall or snowmelt. As used in this RMP runoff from an area becomes streamflow when it reaches a channel.

SALEABLE MINERALS — High volume, low value mineral resources including common varieties of rock, clay, decorative stone, sand and gravel.

SALINITY — A measure of the mineral substances dissolved in water.

SANDY — A soil containing a large amount of sand. Textural classes are sands and loamy sands.

SCENIC QUALITY — The degree of harmony, contrast and variety within a landscape.

SEDIMENT — Soil, rock particles and organic or other debris carried from one place to another by wind, water or gravity.

SEDIMENTATION — The action or process of deposition of material borne by water, wind or glacier.

SHRUB — A low woody plant, usually with several stems, that my provide food and/or cover for animals.

SOIL SERIES — The basic unit of soil classification, being a subdivision of a family and consisting of soils which are essentially alike in all major profile characteristics except in the texture of the "A" horizon (for surface layer).

SOLITUDE — The state of being alone or remote from habitations; isolation or a lonely, unfrequented or secluded place as used in describing wilderness opportunities.

STREAMBANK (and CHANNEL) EROSION — This is the removal, transport, deposition, recutting and bedload movement of material by concentrated flows.

TACK-ON — Public lands with wilderness characteristics but less than 5,000 acres in size adjacent to other public lands designated as wilderness or being studied for designation.

THREATENED SPECIES — A species that the Secretary of Interior has determined to be likely to become endangered within the foreseeable future through-out all or most of its range. See also "Endangered or Threatened Species."

TOPOGRAPHY — The exact physical features and configuration of a place or region; the detailed and accurate description of the landforms of a place or region.

VEGETATION (GROUND) COVER — The percent of land surface covered by all living vegetation (and remnant vegetation yet to decompose) within 20 feet of the ground.

VISUAL RESOURCE(S) — The land, water, vegetation and animals that comprise the scenery of an area.

WATER QUALITY — The chemical, physical and biological characteristics of water with respect to its suitability for a particular use.

WATERSHED — All lands which are enclosed by a continuous hydrologic drainage divide and lie upslope from a specified point on a stream.

WATERSHED COVER — The material (vegetation, litter, rock) covering the soil and providing protection from, or resistance to, the impact of raindrops and that energy of overland flow, and expressed in percent of the area covered.

WETLANDS — Permanently wet or intermittently flooded areas where the water table (fresh, saline or brackish) is at, near or above the soil surface for extended intervals, where hydric wet soil conditions are normally exhibited and where water depths generally do not exceed two meters.

WILDERNESS — An area formally designated by Congress as a part of the Nation Wilderness Preservation System.

WILDERNESS CHARACTERISTICS — The definition contained in Section 2(c) of the Wilderness Act (78 Stat. 891).

WILDERNESS STUDY AREA (WSA) — An area determined to have wilderness characteristics.

INDEX

Bear 15, 17, 20-21, 24, 26-27, 30, 41, 47, 53-54, 59, 63-65, 68, 71, 74, 77, 80, 83
Bighorn Sheep 20-21, 27, 30, 47, 59, 68, 71-72, 75, 77-78, 80-81, 83
Cultural Resources 9, 20, 22, 24, 26, 29, 31, 41, 47-48, 54, 60, 69, 72-73, 75-76, 78, 81, 84
Economic Conditions 41-42
Elk 15, 17, 41, 63-65
Fisheries 11, 53
Livestock Grazing 8, 10, 12-13
Minerals 15, 17, 19, 20, 25, 27, 29, 40, 45-46, 52-53, 58, 62-63, 65, 67, 70, 74, 76-77, 79-80, 82
Mule Deer 15, 17, 20-21, 24, 26-27, 30, 41, 47, 53-54, 59, 63-65, 68, 71, 74, 77, 80, 83
Nongame Species Habitat 8, 10, 12-13
Oil and Gas Development 7, 10-11, 13
Peregrine Falcon 8, 20-21, 24, 26, 47, 54, 59-60, 68-69, 72, 75, 78, 81, 83
Recreation 17, 20, 22, 24, 26, 29, 31, 41, 47, 60, 64-66, 69, 72, 75, 78, 81, 84
Soils 40, 45, 52, 54, 57
Timber 10, 12-13, 15, 17, 39-40, 61, 64-65
Threatened & Endangered Species (see Peregrine Falcon)
Turkey 15, 17, 41, 63-65
Watershed 15, 17, 20, 22, 25, 27, 29, 40, 45, 51, 57, 62, 65-67, 70, 73-74, 76, 79, 81, 82
Wilderness Resources 37, 39, 44-45, 50-51, 56-57, 61, 64, 66, 69, 73, 76, 79
Wild Horse Management 19, 21-22, 25, 27, 29, 30, 46, 53, 58-59, 67-68, 71, 74, 77, 80, 82, 83
Wild Horse Range Improvements 19, 21, 24, 25, 27, 30, 66-83
Utility Corridors 48

☆U.S. GOVERNMENT PRINTING OFFICE: 1988-573-065/60130