U.S. Department of the Interior
Bureau of Land Management
Billings Field Office

U.S. Department of the Interior
National Park Service
Bighorn Canyon National Recreation Area

U.S. Department of Agriculture
Forest Service
Custer National Forest

PRYOR MOUNTAIN WILD HORSE RANGE EVALUATION

FEBRUARY 2008

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PRYOR MOUNTAIN WILD HORSE RANGE EVALUATION

I. INTRODUCTION

A. Evaluation/Decision and Planning Process

The purpose of this evaluation is to determine if existing uses within the PMWHR are meeting specific land use plan objectives as described in the Resource Management Plan/Environmental Impact Statement and Record of Decision for the Billings Resource Area and the interagency Pryor Mountain Wild Horse Range (PMWHR) Herd Management Area Plan (HMAP). This evaluation will also assess if existing uses on the Custer National Forest portion of the PMWHR are meeting policy and the 1987 Custer National Forest Plan goals and objectives. More specifically, the evaluation will determine if the current carrying capacity and current Appropriate Management Level (AML) is valid or an adjustment to the AML needs to be made. The evaluation will also serve to determine habitat limitations and opportunities for improvement as well as impacts from other uses. Discussion and analysis of population management objectives, reproductive health, and herd structure will occur during the subsequent HMAP revision.

The Resource Management Plan/Environmental Impact Statement and Record of Decision for the Billings Resource Area were issued in April, 1983 and September 1984, respectively. June 1987, a Record of Decision was issued for the Custer Forest Plan. It outlined management area direction for the Pryor Mountain Wild Horse Territory and reaffirms BLM as the lead administrating agency (Forest Plan Management Area Q, p. 89, Forest Plan FEIS, pp. xi and 125 and 338; Forest Plan Appendix C, pp. 194, 196; Forest Plan Record of Decision, pp. 21 and 31). The June 1984 PMWHR HMAP was developed jointly by BLM, Forest Service, and Park Service and subsequently amended in July of 1992. These documents guide the management of public lands within the PMWHR.

1. The 1984 Billings Resource Area Record of Decision states in pertinent part:

> ***WILD HORSE MANAGEMENT***
> *This action will balance population levels with the forage available for horses by herd area. The population of a herd area will be held at a level that provides opportunity for improvement of range condition, herd health and viability, wildlife habitat, and watershed condition, or maintain these in good balance."*
>
> ***Resource Objectives and Planned Actions***
> *"The resource objectives in this action will be to maintain a viable breeding herd which could perpetuate the characteristics of the Pryor Mountain wild horses; maintain 2,775 acres that are currently in good range condition; prevent further deterioration of range sites in less than satisfactory condition and to achieve an upward trend in range condition on those sites. The primary benefit will be a healthier, more viable horse herd."*

"Under this action the initial stocking level will be 121 adult horses1; 46 on Tillet Ridge, 44 on Sykes Ridge and 31 on the Dryhead herd area. These numbers are based on current estimates of grazing capacity for each herd area. These numbers are also dependent on the continuation of current agreements which allow wild horses to graze areas outside the designated wild horse range boundary."

The initial target allocation for wild horses will be 121 head (it is estimated that 80 percent of this number would be 2 years old or older). Actual numbers may vary from year to year due to variations in foal crops, natural death loss, forage productivity and other factors including budgetary constraints."

"During the short term period (8 years), monitoring studies will be conducted to confirm or modify the initial estimates of grazing capacities and trends in habitat conditions. Data from these studies will be used to modify the initial target allocation, either upward or downward."

"During the long term (25 years), the number of wild horses in a herd area will be permitted to increase if monitoring shows that additional forage is available. Ultimately, the Pryor Mountain Wild Horse Range (PMWHR) has the potential to support up to 179 wild horses yearlong. This assumes all areas now grazed by wild horses will continue to be available. However, the projected long-term population increase in this action is considerably less than the potential level of 179 head since no rotational grazing systems will be in effect."

"Improved wild horse grazing habits and distribution will be attempted by controlling their access to water sources. When the average utilization on important grasses within the area serviced by water sources reaches 45 percent by weight, access to that water source will be denied. This would stimulate the horses to move to another watered area."

*To assure that non-public lands remain available for grazing by wild horses, the Unite*d *States will attempt to acquire 1,467 acres from the State of Montana, and 632 acres of private land.*

The emphasis in herd management will be to limit the reproduction rate and perpetuate the characteristics of the Pryor Mountain Wild Horses. This will necessitate beginning a selection program to retain only those wild horses with confirmation, color and breeding (genetic) characteristics typical of the Pryor Mountain wild horses."

"This action will require altering the current sex ratio so that it is heavier to studs than the current population. This will reduce the foal crop and minimize the need for excessing wild horses."

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1 As amended in the 1992 HMAP revision, the 121 AML was adjusted to 95 in response to BCNRA decision to not authorize further use of the Sorensen Extension due to resource concerns.

"When it becomes necessary to reduce the number of horses within a herd area, the excess horses will, if possible, be relocated to one of the other herd areas. If this option is not available, the excess horses will be disposed of through the adoption program or other legal processes."

A Wild Horse Herd Management Area Plan (WHHMAP) is being developed jointly between the National Park Service, Forest Service and BLM, with the BLM as the lead agency, and will incorporate the management direction provided by this plan. This WHHMAP will be released in September 1984.

Proposed Range Improvements

This action requires minimal additional man-made improvements or facilities. Five water catch-ments will be required to improve grazing distribution by bands of horses. About 2 miles of fence will be needed for improving the efficiency of capturing horses. The estimated cost to implement this action is $50,500. In the short term, the annual excessing of horses will continue, requiring an estimated $18,000 to $21,000 annually to gather and excess an average of 30 horses. In the long term, altering the sex ratio will reduce the foal crop, but some level of annual excessing may still be required. Costs in the long-term cannot be estimated because the timing of the sex ratio reversal and its impacts to horse numbers has not been established.

Rationale

"The primary objective will be to maintain a healthy, viable herd that displays the characteristics typical of the Pryor Mountain wild horses. In order to accomplish this, the range must be kept at a condition that will provide both the quantity and quality of forage needed to sustain the herd. The Bureau has an obligation to other agencies as well as private individuals who own land within the horse use areas to ensure that basic soil and vegetative resources are not degraded."

The 1981 Ecological Site Inventory determined what stocking level the range could support in its current condition. This is a target allocation and monitoring studies will be established to determine what, if any, adjustments are needed."

The proposed water catchments are to improve wild horse distribution through the availability of water. The BLM is currently exploring new designs for catchments to improve their efficiency, aesthetics, and lower the initial cost and maintenance costs.

Two miles of fencing will be constructed to facilitate the capture of the horses and is designed to reduce the stress horses are subject to.

Monitoring

"Management progress will be evaluated to assure the level applied and the decisions made are compatible with multiple use objectives for the PMWHR. Vegetation monitoring will focus on utilization levels, movement toward reaching the stated objective of the Herd Management Area Plan (HMAP) and long term trend (change in

condition)."

"Studies on the wild horses will include population size, animal distribution, foraging habits and population characteristics. The studies on population characteristics will include sex ratio, age structure, social structure, animal condition and special characteristics identified in the HMAP such as selection of color, a more detailed discussion on monitoring techniques can be found in the HMAP."

WILDLIFE MANAGEMENT

"The Federal Land Policy and Management Act (FLPMA) of 1976 chartered BLM with the responsibility of maintaining or enhancing the fish and wildlife habitats that occur on the public lands."

Resource Objectives and Planned Actions

"The Billings Resource Area operates under a number of general wildlife habitat management objectives which are utilized Bureauwide. Each objective is mandated and/or supported by specific Federal regulation or legislation. The BLM wildlife habitat management program places special emphasis on, but is not limited to the protection, maintenance and enhancement of:

Crucial habitats for big game, upland game birds and waterfowl.

Crucial habitats for non-game species of special interest and concern to state and other Federal agencies.

Wetland and riparian habitats.

Existing or potential fisheries habitat

Habitat for state or federally listed threatened and/or endangered species."

TIMBER MANAGEMENT

Resource Objectives and Planned Actions

"A total of 9,500 acres of forest land will be protected from cutting, except where needed for other resource value or concern such as watershed, safety or wildlife. The protection area includes the Pryor Mountains WSA's……."

OFF-ROAD VEHICLE USE

Resource Objectives and Planned Actions

"The BLM will attempt to meet the demand for off-road vehicle (ORV) use on public land, while protecting watershed, visual resources and other conflicts which may occur between ORV users, adjacent landowners and permittees."

WILD HORSE INTERPRETATION

Resource Objectives and Planned Actions
Interpretation of the Pryor Mountain wild horses and their management will be pursued as a cooperative venture between the BLM; the U.S. Forest Service, and the NPS.…..…some additional interpretation is possible dependent upon the outcome of the Pryor Mountain Wild Horse Herd management Area Plan.…..…..…..…"

2. The Custer Forest Plan and Record of Decision states in pertinent part:

Wild Horse Management
The goal for the Wild Horse Territory *(Management Area Q)* is to, *"provide for improved habitat conditions, including range and watershed, and for a healthy viable wild horse population. "*

Management Standards (Management Area Q)

Wildlife and Fish
a. The Forest Service will coordinate with the BLM, and other Federal/state agencies to maintain or enhance wildlife habitat and population numbers in a manner which is compatible with wild horses and overall habitat conditions.

Range
a. No grazing of domestic livestock will be permitted in the area.
b. The Forest Service will cooperate with the BLM on scheduled monitoring items to determine carrying capacity and/or vegetative conditions and trends. Vegetation and climatological data will be collected to refine carrying capacity estimates and document vegetative condition and trends.
c. New range improvements may be constructed provided they do not attract horses into the proposed Lost Water Canyon Wilderness. However, the horse trap on Tillett Ridge and the two enclosures will be retained.

Fire Management
b. Prescribed Fire
Planned ignitions may be used with an approved plan coordinated with the Bureau of Land Management to enhance range conditions for wild horses. Unplanned ignitions may be used as prescribed fire under an approved plan coordinated with the Bureau of Land Management and National Park Service to enhance range conditions for wild horses.

Forest Service Policy

It is Forest Service Policy (FSM 2260.3) to "*Confine wild free-roaming horses and burros to managed Horse and Burro Territories as established in 1971, to the extent possible."*

3. Bighorn Canyon National Recreation Area

The National Park Service manages land in accordance with the 1916 Organic Act which necessitates management which will *" conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations*." The 1969 MOU between the BLM and NPS provides for BLM management of horses, and asserts that if such management effects land used options, then recreational use shall have priority. The National Park Service is deeply concerned about the poor and deteriorating condition of the range. NPS is working to improve range condition, prohibiting grazing by domestic stock, and using an active restoration program which includes the use of prescribed fire.

B. NEPA Compliance and Conformance

Proposed actions associated with the evaluation process are analyzed through the NEPA process. Management actions or practices developed through the evaluation process are reviewed to determine if they are in conformance with the land use plan decisions and to determine if the actions fall within the scope of the range of alternatives identified in the resource management plans, Forest Plans, and environmental impact statements. In cases when a proposed action is not covered by an existing NEPA document then an environmental assessment would be conducted. If necessary, NEPA compliance would be conducted prior to the development of management actions. In coordination with the public consultation process, development of management actions may occur up to the point of incorporation into a Wild Horse Decision/ HMAP revision.

C. Section 106 Consultation

C. National Historic Preservation Act Compliance
Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their actions on historic properties. The purpose of Section 106 is to avoid unnecessary harm to historic properties from Federal actions. The Section 106 process is initiated early in the planning (NEPA) process so that a broad range of alternatives may be considered. If the area surrounding the proposed action is covered by an existing cultural inventory and there is no effect to historic properties by the proposed action, then the 106 requirements have been met. If the area surrounding the proposed action is covered by an existing cultural inventory and there is an effect to historic properties by the proposed action, consultation with the State Historic Preservation Office (SHPO) would occur. Upon successful completion of the consultation with the SHPO, the Section 106 requirements have been met. If the area surrounding the proposed project has not been inventoried for cultural resources, a cultural inventory would be conducted, any cultural resources located during the inventory would be evaluated for eligibility to the National Register of Historic Places and effects to the historic property by the proposed action would be assessed, and consultation with the SHPO would occur. If necessary, Section 106 compliance may be conducted during and upon completion of the proposed action.

D. Evaluation Area: Pryor Mountain Wild Horse Range

E. User: Wild Horses, Wildlife, Recreation, Commercial Activities

F. Evaluation Period: 1995-2007

II. INITIAL STOCKING LEVEL

A. Wild Horse Use

1. Land Use Plan Objectives (RMP)

a. 1984	Appropriate Management Level	121 Wild Horses
b. 1992	HMAP Downward Adjustment2	26 Wild Horses
c. Present	Current AML	95 Wild Horses

The current appropriate management level (AML) is established at 95 wild horses. This AML was established in July 1992 through an amendment to the PMWHR HMAP and subsequent Decision Record.

2. Percentage of the PMWHR in various Land Ownerships

a.	Bureau of Land Management	70%
b.	National Park Service	21%
c.	United States Forest Service	7%
d.	Private Property(leased)	2%

III. PMWHR PROFILE

A. Description

The PMWHR is located in the southeastern portion of Carbon County Montana, and north portion of Big Horn County Wyoming. The area is approximately fifty miles south of Billings Montana, and ten miles north of Lovell Wyoming. The area is high in diversity and complex in nature. Elevations range from 3850 feet to 8750 feet above sea level. Annual precipitation varies with elevation with six inches of precipitation in the lower elevations to upwards of twenty seven inches in the alpine high elevation. Plant communities also vary with elevation and precipitation from cold desert shrub to sub-alpine forests and meadows. Soils vary in depth from shallow (less than ten inches) to 20-40 inches deep depending on site locations and position on the landscape.

The PMWHR was originally created by order of the Secretary of the Interior, Stewart L. Udall on September 9, 1968. At the time the PMWHR encompassed 33,600 acres of public land in Montana and Wyoming. In 1969 another adjustment occurred, adding lands administered within the Bighorn Canyon National Recreation Area. In December 1971 The Wild Free-Roaming Horse and Burro Act was signed into law. The management and protection of all unclaimed wild

2 Adjustment based on NPS removal of leased lands (Sorenson Extension).

horses and burros was delegated to the Secretaries of the Interior and Agriculture through their agencies of the Bureau of Land Management and Forest Service as outlined in said Act. In 1974 the range was expanded once more to facilitate management pursuant to authority contained in the Wild and Free-Roaming Horse and Burro Act. A joint Forest Service and BLM decision was reached in the 1974 *Pryor Mountain Complex Land Use Decisions,* which allowed horses to use the Lost Water Canyon area (Forest Plan Management Area Q), and the Mystic Allotment area (BLM). The last adjustment to the range occurred in 1984 with the temporary inclusion of the Sorenson Extension, (using two five year special use permits) from the BCNRA, and the Mystic (Kruger) Allotment and land lease. In 1990 the last adjustment occurred when the Sorenson Extension was not re-authorized by BCNRA and resulted in present boundary encompassing over 38,000 acres of lands.

Currently, **143** wild horses and **34 foals** (information provide by **Mathew Dillon)** inhabit the PMWHR. Generally wild horse use tends to shift with forage availability and elevation accessibility. Wild horses tend to live in family groups or bands. Bands are primarily composed of one dominate stallion with several mares depending on the stallions capability of maintaining these mares. A band can range in size from one mare and one stud to 6 or 7 mares and one stud with their progeny. A bachelor band is made of young studs that are not yet mature enough to build a band and defeat rival stallions for mares or steal a mare. These young studs tend to be displaced from the family band typically but not exclusively upon reaching breeding age. The typical band is led by one dominant mare that controls the day to day activities, unless the stallion feels threatened and moves the band out of an area. Each band typically has a small home range they like to occupy with seasonal shifts in their roaming patterns.

There are five perennial water sources within the PMWHR and an additional eight that are available on a seasonal basis dependent upon meteoric capture of water. One "catch ment" was renovated at Burnt Timber and the other on Sykes Ridge was turned on in order to provide additional water at mid-slope areas of the range. There are 11 miles of fence around the majority of the range that are maintained periodically.

B. Specific Applicable BLM Land Use Plan (RMP) Objectives:

"This action will balance population levels with the forage available for horses by herd area. The population of a herd area will be held at a level that provides opportunity for improvement of range condition, herd health and viability, wildlife habitat, and watershed condition, or maintain these in good balance."

"The resource objectives in this action will be to maintain a viable breeding herd which could perpetuate the characteristics of the Pryor Mountain wild horses; maintain 2,775 acres that are currently in good range condition; prevent further deterioration of range sites in less than satisfactory condition and to achieve an upward trend in range condition on those sites. The primary benefit will be a healthier, more viable horse herd."

"During the short term period (8 years), monitoring studies will be conducted to confirm or modify the initial estimates of grazing capacities and trends in habitat conditions.

Data from these studies will be used to modify the initial target allocation, either upward or downward."

"During the long term (25 years), the number of wild horses in a herd area will be permitted to increase if monitoring shows that additional forage is available. Ultimately, the Pryor Mountain Wild Horse Range (PMWHR) has the potential to support up to 179 wild horses yearlong. This assumes all areas now grazed by wild horses will continue to be available. However, the projected long-term population increase in this action is considerably less than the potential level of 179 head since no rotational grazing systems will be in effect."

"Improved wild horse grazing habits and distribution will be attempted by controlling their access to water sources. When the average utilization on important grasses within the area serviced by water sources reaches 45 percent by weight, access to that water source will be denied. This would stimulate the horses to move to another watered area."

The emphasis in herd management will be to limit the reproduction rate and perpetuate the characteristics of the Pryor Mountain Wild Horses. This will necessitate beginning a selection program to retain only those wild horses with confirmation, color and breeding (genetic) characteristics typical of the Pryor Mountain wild horses."

"This action will require altering the current sex ratio so that it is heavier to studs than the current population. This will reduce the foal crop and minimize the need for excessing wild horses."

"Management progress will be evaluated to assure the level applied and the decisions made are compatible with multiple use objectives for the PMWHR. Vegetation monitoring will focus on utilization levels, movement toward reaching the stated objective of the Herd Management Area Plan (HMAP) and long term trend (change in condition)."

"Studies on the wild horses will include population size, animal distribution, foraging habits and population characteristics. The studies on population characteristics will include sex ratio, age structure, social structure, animal condition and special characteristics identified in the HMAP such as selection of color, a more detailed discussion on monitoring techniques can be found in the HMAP."

WILDLIFE MANAGEMENT

"The Federal Land Policy and Management Act (FLPMA) of 1976 chartered BLM with the responsibility of maintaining or enhancing the fish and wildlife habitats that occur on the public lands."

Resource Objectives and Planned Actions

"The Billings Resource Area operates under a number of general wildlife habitat

management objectives which are utilized Bureauwide. Each objective is mandated and/or supported by specific Federal regulation or legislation. The BLM wildlife habitat management program places special emphasis on, but is not limited to the protection, maintenance and enhancement of:

Crucial habitats for big game, upland game birds and waterfowl.

Crucial habitats for non game species of special interest and concern to state and other Federal agencies.

Wetland and riparian habitats.

Existing or potential fisheries habitat

Habitat for state or federally listed threatened and/or endangered species."

TIMBER MANAGEMENT

Resource Objectives and Planned Actions
"A total of 9,500 acres of forest land will be protected from cutting, except where needed for other resource value or concern such as watershed, safety or wildlife. The protection area includes the Pryor Mountains WSA's……."

OFF-ROAD VEHICLE USE

Resource Objectives and Planned Actions
"The BLM will attempt to meet the demand for off-road vehicle (ORV) use on public land, while protecting watershed, visual resources and other conflicts which may occur between ORV users, adjacent landowners and permittees."

WILD HORSE INTERPRETATION

Resource Objectives and Planned Actions
Interpretation of the Pryor Mountain wild horses and their management will be pursued as a cooperative venture between the BLM; the U.S. Forest Service, and the NPS……some additional interpretation is possible dependent upon the outcome of the Pryor Mountain Wild Horse Herd management Area Plan……."

C. Specific Applicable USFS Forest Plan Direction and Policy:

"Provide for improved habitat conditions, including range and watershed, and for a healthy, viable wild horse population."

It is Forest Service Policy (FSM 2260.3) to "*Confine wild free-roaming horses and burros to managed Horse and Burro Territories as established in 1971, to the extent possible."*

D. Specific Applicable Herd Management Area Plan Objectives

1992 *HMAP Revision*:

The initial stocking rate for the Pryor Mountain Wild Horse Herd will be reduced from 121 head to an appropriate management level (AML) of 95 head of wild horses.

There will be no designation of a specific number of horses by herd area.

HMAP Chapter 4:

HABITAT OBJECTIVES

Range
Objective: Improve Range Condition on 7900 acres of the horse range which are currently in poor condition, 12,498 acres which are in fair condition, and maintain 2,775 acres presently in good condition.

Timber
Objective: Maintain the heavily timbered areas within the horse range in their current state.

Mountain Mahogany
Objective: Improve the condition and vigor of the Mountain Mahogany Zones within the horse range.

Other Vegetation
Objective: Maintain a diverse community of grasses, forbs, shrubs, and trees.

ANIMAL OBJECTIVES (WILD HORSES)

Herd
Revised see 1992 HMAP Revision Objectives

Color and Conformation
Objective: Maintain the various colors within the herd and retain those horses with better conformation so as to gradually improve the quality of horses.

Sex Ratio
Objective: Maintain a sex ratio between 50% and the present 62% females.

Age Structure
Objective: Maintain a herd with the age structure weighed to young horses.

Carrying Capacity
Revised see 1992 HMAP Revision Objectives

Protection
Objective: Provide for the protection of wild horses from capture, branding, harassment and undue stress.

Free-Roaming Behavior
Objective: Maintain the Wild free roaming behavior of the individual bands of wild horses. (Rest of the objective was Revised see 1992 HMAP Revision Objectives)

ANIMAL OBJECTIVES (WILDLIFE)

Rocky Mountain Bighorn Sheep
Objective: Assess the potential for the reintroduction of additional Rocky Mountain Bighorn Sheep on the wild horse range. This objective will be closely coordinated between BLM, USFS, NPS, and the Montana Department of Fish, Wildlife and Parks. The NPS is pursuing the possibility of obtaining a research contract to study the resident bighorn population. The study is geared toward obtaining information on seasonal distribution, sex and age class structure, general health and total habitat potential of the population. It may also address competition with wild horses and mule deer.

Peregrine Falcon
Objective: Assess the potential for introduction of the peregrine falcon into the Bighorn Canyon, Sykes Ridge, and Crooked Creek Canyon areas. This objective will be closely coordinated between the BLM, USFS, NPS, F&WS, and MDFW&P.

Predator Control
Objective: Predator control actions within the boundaries of the PMWHR will not be taken at this time.

OTHER OBJECTIVES

Livestock Trailing
Objective: Strive to minimize forage loss along the Bad Pass Trail from livestock which are strayed or left unattended.

Supplemental Feeding
Objective: Supplemental feeding of the Pryor Mountain wild horse herd is a management tool which can be utilized in emergency situations in order to maintain a viable breeding population. (Rest of the objective was Revised see 1992 HMAP Revision Objectives)

Sorenson Extension
Objective: Improve range conditions on the officially authorized portion of the Dryhead Herd Area by providing limited, temporary use of the Sorenson Extension as a winter

range.

Land Acquisition
Objective: Acquire, through exchange, 1,467 acres of State of Montana lands and 632 acres of land in private ownership which lie within the boundaries of the designated wild horse range. Additionally, seek BLM/USFS exchange or boundary adjustment along the western edge of the horse range in the Lost Water Canyon Area.

Wild Horse Interpretation
Objective: Provide the user public with general information about the Pryor Mountain wild horses and keep them informed as to the boundaries of the horse range.

HMAP Chapter 8
Specific Criteria for Revision

VEGETATION STUDIES

Trend
Objective: Determine and monitor changes in range condition. If monitoring indicates a decrease in range condition on areas currently in good condition or no improvement on areas in poor condition, it may be necessary to adjust the number of horses or the seasons of use where feasible

Utilization
Objective: Determine the amount of utilization by herd area and the period of year which it occurs.

Climate
Objective: To monitor climatological changes within the horse range in an attempt to relate this data to the response of the vegetative community to the proposed management actions.

WILD HORSE STUDIES

Population Counts
Objective: To have an updated and accurate count of wild horse numbers in each of the three herd areas. Excess operations will be based upon the results of theses counts and will be conducted in such a manner that numbers of horses within each herd area will remain within 5% of the estimated carrying capacity of each herd area.

Condition of Herd
Objective: To maintain a healthy viable herd of horses in relationship to the range condition.

Wild Horse Movements

Objective: To manipulate the grazing use made by horses so that a higher degree of use is made in those portions of the range in better condition and to limit spring/summer use in those areas considered essential for winter range.

WILDLIFE STUDIES

Population Inventory and Monitoring

Mule Deer

Objective: To evaluate the response of mule deer population levels in key areas as they relate to the management actions being implemented. Significant increases or decreases in the population levels could dictate the need to revise certain management actions.

Black Bear

Objective: Establish a more complete data base as to black bear densities and denning locations. This information would provide a basis for evaluating the effects of implemented management actions as well as wild horse populations on the black bear population and annual movements. Should the black bear population become large enough to display adverse impacts to the natural behavior of the wild horse herd, a revision to this plan may be necessary.

Rocky Mountain Bighorn Sheep

Objective: To identify the bighorn sheep habitat and define the extent of their summer and winter ranges. Due to dietary overlap of Bighorn Sheep and wild horses, a revision to this plan may be necessary should the Bighorn sheep population become so large that they were significantly competing for forage on key wild horse use areas.

Peregrine Falcon

Objective: Inventory for the occurrence of peregrine falcons and assess the potential for reintroduction sites. Should peregrine falcons be located or reintroduced, some revisions to the plan may be necessary in order to fully protect the birds from harassment.

Browse Studies

Objective: To monitor plant composition, density, vigor, and utilization of key wildlife browse species such as mountain mahogany, black sagebrush and juniper. Emphasis will be placed on monitoring crucial winter ranges for mule deer. Should monitoring effort indicate a significant downward trend in the key areas, it may be necessary to revise the management methods being used in this plan.

RECREATION

Should recreation use of the PMWHR increase to the point that facilities such as Penn's cabin are being destroyed, upland bird or big game species of wildlife are being over harvested, or the wild horses are being unnecessarily harassed on BLM land, a revision to limit recreational use

of the area may be needed.

MINERAL DEVELOPMENT
Should the demand for mineral development significantly increase, either locally or nationally, a revision to this plan may be necessary. The primary minerals of concern are uranium and oil and gas. Exploration for these mineral deposits will be tolerated as long as no significant ground disturbing activity occurs. Should exploration activities increase to the point of creating adverse impacts to other resource values or the wild horse herd, measures will be taken to control such activities and/or amend the HMAP.

FORESTRY DEVELOPMENT
Should one of the following scenarios evolve a revision to lift the protective withdrawal on heavily timbered area and allow harvest may be necessary.

1. *The demand for timber products significantly increase either locally or nationally*
2. *The stands are in threat of a significant die-off due to insect infestation or disease.*
3. *A catastrophic wildfire burn occurs.*

LAND ACQUISITION
If the BLM is unable to acquire the private and state lands identified for acquisition, and the wild horse grazing use of these areas is revoked, a revision to adjust the rangeland carrying capacity will be necessary. The total acreages involved are:

State Lands	*1,467 acres*
Private Lands	*632 acres*
Total Acreage	*2,099 acres*

Additionally, should the BLM/USFS boundary adjustment in the Lost Water Canyon area ultimately take place, a revision to incorporate management direction for this area may also be necessary.

WILDERNESS DESIGNATION
If congress accepts BLM's recommendation to designate portions of the PMWHR as Wilderness, a revision as to the number and types of improvements proposed may be needed as well as a revision to methods utilized to roundup and move wild horses.

OFF-ROAD VEHICLE USE
If the limited closure to off-road vehicles becomes severely abused and range condition begins to decrease, a revision to close additional roads and strict enforcement procedures may be necessary.

E. Standards for Rangeland Health (see Appendix I)

IV. MANAGEMENT EVALUATION

A. Purpose

The purpose of the management evaluation is to assess whether current management practices are meeting the use objectives for the PMWHR and to determine the appropriate management level based upon forage carrying capacity.

B. Summary of Studies Data

1. Actual Use Data
Actual use for Wild Horses was reported for the years 1995 through 2007. Results are shown in Table 1 and reported by adult wild horses only.

Table 1. Actual Use Data

PMWHR wild horse actual use during the evaluation period

Year	Wild Horse Numbers	Animal Unit Months used*
1995	146	1752
1996	175	2100
1997	147	1764
1998	158	1896
1999	173	2076
2000	188	2256
2001	160	1920
2002	170	2040
2003	161	1932
2004	142	1704
2005	160	1920
2006	145	1740

*Actual use was reported for the year as adult wild horses as of March 1st of each year. The number of adult horses multiplied by 12 months equate to AUMs in this evaluation. AUMs are displayed for purposes of showing forage off take by wild horses.

2. **Utilization**
Utilization was completed for the PMWHR in 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, and 2006. See map #2. A use pattern map was completed for the summer use in 2007 see map 3.

a. Utilization values are:

Year	Utilization
1995	81%
1996	89%
1997	66%

1998	82%
1999	81%
2000	89%
2001	53%
2002	86%
2003	89%
2004	90%
2005	85%
2006	66%

b. Key forage plants for wild horses for the PMWHR are as follows:

- Indian ricegrass (*Oryzopsis hymenoides*)

- Idaho fescue (*Festuca idahoensis*)

- Bluebunch wheatgrass (*Psuedoregenia spicatum*)

Needle and thread grass (*Stipa comata*)

Western wheatgrass (*Agropyron smithii*)

Sedge (*Carex* Spp.)

Sand dropseed (*Sporobolus cryptandrus*)

Green needlegrass (*Stipa viridula*)

Alkali sacaton (*Sporobolus airoides*)

Since measured utilization is within the heavy category for the lower and higher elevation areas of the PMWHR this use will be analyzed as one figure throughout the evaluation.

3. Precipitation Data

Data from the National Oceanic and Atmospheric Administration Weather Station located at Lovell, Wyoming and Pryor, Montana along with RAWS station data from Britton Springs, and Pryor stations is being used for this evaluation. Data from Lovell, Wyoming will be used to analyze precipitation in the PMWHR, since it is the most complete. Data from Pryor, Montana, Bridger, Montana and RAWS is incomplete over the evaluation period and was used as supplemental precipitation data to correlate precipitation patterns against the Lovell Wyoming data. Precipitation data was used to calculate a yield index for each year (Sneva et al. 1983). The yield index was used to adjust the utilization levels for above or below normal precipitation (compared to long term average). In calculating the yield index the first step is to calculate the crop yield (effective precipitation). For the PMWHR this includes precipitation falling from October through September. The crop yield is then divided by the normal crop yield (long term

average) to determine the precipitation index for each year. The yield index is then calculated using the linear regression equation Y= -23 + 1.23x, where Y is the yield index and x is the precipitation index. Table 2 shows the yield indices for Lovell, Wyoming for the analysis years.

Table 2. Yield Indices,

Lovell, Wyoming

Year	Crop Yield	Precip. Index	Yield Index
1995	6.67*	98%	97.5%
1996	5.48*	80%	75%
1997	6.71*	99%	99%
1998	8.08*	119%	123%
1999	4.96*	73%	68%
2000	4.73*	70%	63%
2001	5.82*	86%	83%
2002	4.72*	70%	63%
2003	4.29*	63%	54%
2004	4.49*	66%	58%
2005	8.33*	122%	127%
2006	3.41*	50%	38%

*30 year crop year average for Lovell, Wyoming is 6.79 inches

4. Condition/Production

Similarity Index (S.I.)* estimates the state of succession at a given site by measuring composition and comparing it to the composition of the historic climax plant community (HCPC). This is estimated as a percentage of the HCPC, from 1% to 100% with 100% representing the plant community as though it has climaxed without substantial disturbance. The S.I. provides a quantitative measure of health in terms of species diversity and productivity. It gives a relative idea of where the ecological sites plant community is ecologically, and where it can potentially go.

Table 3. Condition based on S.I. for site index units.

Overall Site Index Unit	Percentage of HCPC
Britton Springs	21 percent
National Park	44 percent
Big Coulee	29 percent
Burnt Timber	27 percent
Forest Service	45 percent
Penn's Cabin	18 percent

*refer to NRCS report page 23 Pryor Mountain Wild Horse Range Survey and Assessment April 2004 as well as the report in its entirety.

5. Trend

Daubenmire Plots were re-read for six key areas in 2007. The plots compare the readings from 1996. The comparison is based on the number of plants or frequency of each species that occurred in 1996 compared to 2007. Comparison of cover data was not used to determine trend as cover changes can occur on a yearly basis due to precipitation. Daubenmire transect plots results are shown in Table 4. See map number 2.

Table 4. Trend

Trend Plot	Years Read	Changes Detected	Indicated Trend
C-17 Burnt Timber F.S. Boundary	1996, 2007	Bluebunch wheatgrass increased, mainly seedlings Bluegrass and June grass have decreased almost gone from the plot Black sagebrush has increased.	Steady to Slightly downward
C-18 Burnt Timber Catchment	1996, 2007	400% increase in Bluebunch wheatgrass Indian rice grass now present with a 700% increase Black sage brush has decreased	Upward
C-19 Lone Pine Basin	2007	No change detected	One point in time
C-20 Turkey Flat	1996, 2007	Bluebunch wheatgrass and June grass are no longer present Needle and Thread grass 50% decrease Threeawn now present on site at a 900% increase	Downward
C-21 Sykes Catchment	1996, 2007	50% increase in Bluebunch wheatgrass 50% increase in Junegrass Slight increase in winterfat	Upward
C-23 Mustang Flat	1996, 2007	50% decrease in Bluebunch wheatgrass 50% increase in	Downward

		Needle and Thread grass increase in three-awn increase in snakeweed	

6. Range Survey Data

NRCS report Pryor Mountain Wild Horse Range Survey and Assessment April 2004. This survey documents the normalized production and forage availability at the time of the survey. Although on its own this survey cannot be used to establish AML the survey indicates a range of 45 to 142 wild horses is appropriate depending upon varying minimal to intensified management scenarios as well as variations in distance to water and slope usage.

*refer to NRCS report page 35 Pryor Mountain Wild Horse Range Survey and Assessment April 2004, as well as the report in its entirety.

7. Rangeland Health Assessment

NRCS report Pryor Mountain Wild Horse Range Survey and Assessment April 2004 pages 15, 28, pages 62-67 describes average rangeland health ratings. Worksheet scores of 4 or 5 are considered healthy rangelands, scores of 2.6 to 3.9 are considered at risk with a score of 2.5 or less as unhealthy.

Table 5 Rangeland Health Rating for Site Index Units

Overall Site Index Unit	Rangeland Health Rating out of 5
Britton Springs	2
National Park	2.25
Big Coulee	3
Burnt Timber	2.5
Forest Service	3.25
Penn's Cabin	3.75

8. Riparian Areas

Proper Functioning Condition (PFC) assessments are a tool to classify riparian systems in order to determine how the system is functioning in its current state and current management. A Proper Functioning Condition assessment was conducted along three reaches (segments) of Crooked Creek in August 2005. No other riparian areas within or adjacent to the PMWHR have had any assessments completed

Table 6 Proper Functioning Rating Condition Rating for three reaches.

Overall Record Number	PFC Rating
2021616	Vegetation: Functional at Risk Soil/Hydrology: Proper Functioning Condition Overall: Proper Functioning Condition

2021615	Vegetation: Functional at Risk Soil/Hydrology: Proper Functioning Condition Overall: Proper Functioning Condition
2021614	Vegetation: Proper Functioning Condition Soil/Hydrology: Proper Functioning Condition Overall: Proper Functioning Condition

9. Fuels

A fuel loading classification survey was conducted on BLM administered lands on the PMWHR in 2001. The purpose of the survey was to asses the conditions of the forests in respect to fuels loading and the potential for catastrophic fire. The table's indicates the higher the fuel loading and insect infestation within a habitat type the greater risk of catastrophic fire.

Table 7 Fuels Loading Classification measured in tons per Acre

Dead Down Woody Summary Analysis - Habitat Types 1-6

Habitat Type	**Total Needle Loading**	**Total Needle and Dead Down Loading**
1-Subalpine fir/Heartleaf arnica	0.6 tons per acre	58.22 tons per acre
2- Subalpine fir/virgins bower/Whortleberry	0.2 tons per acre	27.81 tons per acre
3-Limber pine/Idaho fescue/Common juniper	0.52 tons per acre	11.78 tons per acre
4-Engleman spruce/Sweet scented bedstraw	0.3 tons per acre	23.62 tons per acre
5-Douglas fir/Idaho fescue/Common juniper	0.66 tons per acre	12.28 tons per acre
6-Limber pine/Douglas fir/Scree	1.42 tons per acre	19.89 tons per acre

Table 8 Insect Infestation Intensities

Level of Insect Infestation	**Acreage**
Severe	671
Moderate	183
Low	159
Total Affected Acres	1013

*acreages of moderate and low level infestations represent observed areas only, not entire PMWHR.

10. Recreation

An independent survey was completed in 2003 to assess the visitor use of the PMWHR as well as to correlate this use to resource impacts. Approximately 277 people participated in the survey regarding use on the PMWHR. This survey indicated the PMWHR has become a destination for local, national and international visitors. Recreation use has been monitored and documented from 2003 to the present. Since 2003 use has been steady or increasing.

11. Wildlife

Numerous wildlife studies were conducted which did not provide data directly applicable to meeting Land Use Plan or HMAP objectives.

A browse study was completed in 1999 for curleaf mountain mahogany (*Cercocarpus ledifolius)* by Colorado State University. The purpose of the study was to evaluate the condition and vigor of the mountain mahogany as well as its reaction to browsing by mule deer and Rocky Mountain bighorn sheep. The study indicated that curleaf mountain mahogany was not adversely impacted by current management actions and that "reproduction rates appear to be high, as evidenced by seedling density." "Browsing does not appear to have had negative effects on current annual growth production levels, and this result may be due to the ability of *Cercocarpus* to exactly compensate for tissues lost to herbivory (Wandera et al. 1992) (Peterson et al. 1999).

12. Erosion

A gully survey has been compiled by Clayton McCracken and provided to the BLM during the Draft phase of this Evaluation. The purpose of the gully project photo sites is to document the condition of the meadow near to but away from the gully system on Penns' Cabin Meadow. The project is one point in time and documents the gully erosion created 18 Sept 2005. There is no determination from this project, the data is provided below.

Table 9

GULLY PROJECT

Description of sites in the Gully Project. This document created 18 Sept 2005

Distances have been stepped off.

The purpose of the photo site is to document the condition of the meadow near to but away from the gully system.

PG01 No stake	0711165 5001352	This is a broad gully system 100 ft across at one point. There are scattered individual whitebark pines around the site. Look for two dead pines together, the site is northwest of these pines. Gully flows to 190°. Where eroded this site is light red clay, possibly Amsden. Just above PG01A there is a pine with a 3 ft 2x6 between the stems. Upslope of that pine is a second one under which the horses have stood. Slope outside of gully aver 12° to 195°S.
PG01A	0711165	Placed in the main gully. Photo when placed. Photo 17

Stake	5001352	Sep 05.
PG01B Stake		Downslope and to west of A. Photo when placed. Photo 17 Sep 05.
PG01C Stake		Downslope and to east of A. Photo when placed. Photo 17 Sep 05.
PP01Photo PG01PHOTO-A	0711173 5001392	up slope of P01 plus 30 ft upslope from whitebark pine. Photo 17 Sep 05 – 3x3 ft. Stake then removed. At SW corner of Study plot. Placed a rock with lichens on both ends at left lower corner.
PG01STDY		17 Sep 05 set up a study plot to the east of PG01. No stakes placed to indicate corners. A quadangle.
PG01STDYSW	0711139 5001409	There is a 3 ft pine with dead top in gully. SW is on the E edge of the gully about 30 ft upslope of the pine. 117 fr SE.
PG01STDYSE	071185 5001385	17 Sep 05. Go 30°NE to NW???. SE is to the W of a broad shallow gully. The rebar exclosure is est 40 ft to E.
PG01STDYNE	0711198 5001423	17 Sep 05 – West end of a weathered 4x4 lying on ground.. 134 ft fr SE corner.
PG01STDYNW	0711158 5001442	17 Sep 05 –. E of a shallow bowl of erosion with > 20 cobbles.
PG01PHOTO-B		This a 3x3 plot at NE corner of study plot. The West end of the 4x4 is the right lower corner of the photo plot.
PG03 No stake		A healed gully. Upslope lupines are in full bloom. Grasses among the lupines are heading out. 30June2005.
PG04 No stake		This is the long inactive old gully. The gully starts from a depression then flows down to a horse path. For some time the path may have diverted water from continuing down the old gully. Now the downslope side of the path is breaking down and water may be again flowing down the gully.
PG04 LWR No stake		This is the lower end of the gully where it flows into the canyon. A faint horse path crosses the gully at this point. Water flows through here during the springtime. Estimated heights of the gully walls are 8 feet on the west side and 12 feet on the east.

		Need the UMT coordinates.
PG04A Stake	0710835 5001615	Placed at midpoint (?) in the gully. Labeled PG04A.
PG04B No stake	0710863 5001756	No stake. No photo taken on 30 Jun 05. This is the point where the horse path crosses the gully. Point is downslope from the horse path.
PP04photo Photo site relocated	0710835 5001597	Labeled PP04A. Ten feet east of the gully and 35 ft. downslope of PG04A. On 18 Sep 2005 stake removed and photo site moved to new SE corner of PG04STDY.
PPO4PHOTO - NEW		18 Sep 2005 created study site PG04STDY with the new photo site PP04 at the SE corner. Site is 3x3 ft. See below precise location.
PG04STDY -SW	0710837 5001600	Mislabelled in photo as SE.. This is immediately east of the gully. On the east side of the gully are 5 limestone blocks in a quarter circle and on the west side of the gully are sandstone/siltstone sedimentary rocks. This corner and the photo site are bounded on the west with cushion plants probably phlox, on the south by erosion with gravel and on the east with small bare area of erosion.

PG04STDY - NW	0710830 5001621	From SW corner go 83 ft 352° N to PG04A stake in gully. This corner is to the east out of the gully.. The photo of this corner is mislabbelled NE in 18Sep05 photo.
PG04STDY - NE	0710893 5001614	From the NW corner site on the big pine at 112°SE. This corner is on a small ridge with extensive gopher diggings and marked by two rocks side by side. One is a limestone hexagon with chert etching. The other smaller smooth with purple marbling. From NW to NE is 198 feet.
PG04STDY - SE	0710866 5001593	From the NE corner go 114 ft toward the ~ 4 ft pine in the gully. Stop when opposite the SW corner. At this corner is an embeded 7x4 in rock with face slanted to the south and a number of orange lichens. The distance from SE to SW is 103 feet. The distance from SE to SW is 103 feet.
PG04STDY		Slopes within the study area are 9° and along the gully 10°. Within the study area the slope is from the NE corner to the SW corner.

PG05 No stake		This gully system is a major water drainage to the east of Penn's Cabin Exclosure. It starts under a series of low limestone cliffs. No stakes placed in this system.
PG06 No stake		This is a system of gullies and water erosion between P05 and the Penn's Cabin exclosure (Penn-X) and immediately to the east of the southeast corner of Penn-X.
PG06 - SE corner Penn-X No stake	0710227 5002199	The southeast corner of the Penn's Cabin Exclosure. Elevation: 8400 ft
PG06 photo – planned No stake		I could not find healthy turf in the immediate area. Remember I want a place upslope from any erosion to demonstrate the condition of the meadow. This might need to be near the road.

PG06A ??? Stake	0710282 5002175	165 ft and 150° from the SE corner of Penn-X. 60 feet upslope from P06B. There are dinner plate sized sculpted out erosions with no vegetation. [Are these terracetes?] Margins of the sculpted places have 1 to 2 inches of pedestalling. These lie within a long shallow depression. Predict that this is start of gully erosion.
PG06B Stake	0710284 5002153	Focus upon a tight group of four Doug fir trees about 15 ft high. Stake is 65 feet north of the tree group and 130° from the SE corner of Penn-X. The stake is in a healed gully, with well-established vegetation within the depression. There is evidence (?) that erosion is beginning.
PG06C Stake	0710300 5002136	Located at 55° and 30 ft from the tree group. Placed on the side of a gully where the turf is being undercut.
PG06D – no stakes		The stake would have been placed beside small boulders within in a gully that is immediately east of the SE Penn-X. The site is well marked by the exclosure corner post so no stake is needed. The observation proceeds upslope from that point within a gully system parallel to the east fence of Penn-X. Photos taken.

PG06E- planned. Stake planned		On next visit to the site place a stake where there is active gully formation with ledges greater than 12 inches. This would be about 150 feet downslope and somewhat SE of P06C.
PRebarExc No stake	0711244 5001370	A 3x3 ft exclosure of rebar without any wire about it. List of plants within exclosure is in journal notes of 30Jun2005.
Downslope of Penn's Cabin Exclosure	Coordinates not taken	Downslope of the southern boundary of the exclosure is rebar holding a limestone rock from falling into the gully. About two feet downslope of that is a red angle iron about 1 and a half inches from the edge of the gully. I do not know who placed these stakes or when. Light was fading when I photographed these stakes.

Table 10

East Pryor Exclosure or Penn's Cabin Exclosure, Constructed in 1963.

Table of gullies crossing the fence line, 18 Sep 2005. Gullies numbered in counterclockwise direction from the steps. Photos are available - CHMc

Feature	GPS	Comment
NE corner and steps	0710222 5002299	location, no gully
N 1	0710120 5002298	gully crossing
N 2		~ 20 ft W of N 1
N 3	0710120 5002291	Gully cuts across the NW corner
NW corner	0710120 5002291	location, no gully
W 1	0710122 5002246	Appears healed within Ex but erroded outside
W 2	0710125 5002205	Fresh errosion inside Ex
SW corner	0710127 5002193	Corner post pulled in ~ 2 ft. Location, no gully. [Fence has since been repaired.]
S 1	0710127 5002193	A broad gully exiting at the SE corner
S 2	0710154	Broad gully exiting

	5002192	
S 3	0710167 5002194	Small gully exiting.
S 4	0710182 5002194	Stony area within Ex leading to a broad gully outside. Exiting.
S 5	Across SE corner.	A shallow stony area exists diverted to the W by a horse path then continues as a shallow gully.
SE corner	0710228 5002200	location, no gully
E 1	Across SE corner	Same gully as S 5
E 2	0710227 5002224	A broad eroded area.
E 3	0710224 5002203	A gully.

V. CONCLUSIONS

A. Each applicable Land Use Plan Decision/Objective Determination is rated as met or not met the objective for management within the PMWHR:

WILD HORSES

Applicable BLM Land Use Plan Decision #1
"This action will balance population levels with the forage available for horses by herd area. The population of a herd area will be held at a level that provides opportunity for improvement of range condition, herd health and viability, wildlife habitat, and watershed condition, or maintain these in good balance."

1. Conclusion: Partially Met

2. Rationale: Over-utilization of Key forage species has occurred and continues to occur, which has resulted in a reduction of the forage base and subsequent range conditions. The site index in relation to range condition is less than 50% for the entire range and as low as 18% in the Penn's cabin unit. Large areas of the PMWHR have experienced a downward trend yet mid-elevation areas have experienced an upward trend.

The high elevation areas of the Penn's Cabin and Forest Service units have the highest rangeland health ratings. Although the HCPC of Penn's Cabin is at 18%, the rangeland health rating is 3.75 out of 5. This appears to be in conflict, but is most likely due to the amount of ground cover present is nearly appropriate for the site despite the plant species

composition being at 18% of the HCPC.

Applicable BLM Land Use Plan Decision #2
"The resource objectives in this action will be to maintain a viable breeding herd which could perpetuate the characteristics of the Pryor Mountain wild horses; maintain 2,775 acres that are currently in good range condition; prevent further deterioration of range sites in less than satisfactory condition and to achieve an upward trend in range condition on those sites. The primary benefit will be a healthier, more viable horse herd."

1. Conclusion: Not Met

2. Rationale: Over-utilization of Key forage species has occurred and continues to occur, which has resulted in a reduction of the forage base and subsequent range conditions. The site index in relation to range condition is less than 50% for the entire range and as low as 18% in the Penn's cabin unit.

Applicable BLM Land Use Plan Decision #3
"During the short term period (8 years), monitoring studies will be conducted to confirm or modify the initial estimates of grazing capacities and trends in habitat conditions. Data from these studies will be used to modify the initial target allocation, either upward or downward."

1. Conclusion: Met
2 Rationale: The AML was previously adjusted based upon available forage and resources.

Applicable BLM Land Use Plan Decision #4
"During the long term (25 years), the number of wild horses in a herd area will be permitted to increase if monitoring shows that additional forage is available. Ultimately, the Pryor Mountain Wild Horse Range (PMWHR) has the potential to support up to 179 wild horses yearlong. This assumes all areas now grazed by wild horses will continue to be available. However, the projected long-term population increase in this action is considerably less than the potential level of 179 head since no rotational grazing systems will be in effect."

1. Conclusion: Partially met

2. Rationale: The population has been allowed to increase, but not necessarily because additional forage is available for the expansion. The site index in relation to range condition is less than 50% for the entire range and as low as 18% in the Penn's cabin unit.

Applicable BLM Land Use Plan Decision #5
"Improved wild horse grazing habits and distribution will be attempted by controlling

their access to water sources. When the average utilization on important grasses within the area serviced by water sources reaches 45 percent by weight, access to that water source will be denied. This would stimulate the horses to move to another watered area."

1. Conclusion: Not Met

2. Rationale: Over-utilization of Key forage species has occurred and continues to occur, which has resulted in a reduction of the forage base and subsequent range conditions. Water sources have not been consistently maintained or used for management purposes.

Applicable BLM Land Use Plan Decision #6
The emphasis in herd management will be to limit the reproduction rate and perpetuate the characteristics of the Pryor Mountain Wild Horses. This will necessitate beginning a selection program to retain only those wild horses with confirmation, color and breeding (genetic) characteristics typical of the Pryor Mountain wild horses."

1. Conclusion: Partially Met

2. Rationale: The selection criterion for selecting wild horses for removal has maintained "Pryor Wild Horses". Emphasis for removal has focused on sex ratios and age structures.

Applicable BLM Land Use Plan Decision #7
"This action will require altering the current sex ratio so that it is heavier to studs than the current population. This will reduce the foal crop and minimize the need for excessing wild horses."

1. Conclusion: Not Met

2. Rationale: The sex ratio is heavier towards mares, further the HMAP has a decision to manage for a sex ratio between 50% to 62% females to males conflicts with the LUP decision.

Applicable BLM Land Use Plan Decision #8
"Management progress will be evaluated to assure the level applied and the decisions made are compatible with multiple use objectives for the PMWHR. Vegetation monitoring will focus on utilization levels, movement toward reaching the stated objective of the Herd Management Area Plan (HMAP) and long term trend (change in condition)."

1. Conclusion: Not Met

2. Rationale: Over-utilization of Key forage species has occurred and continues to occur, which has resulted in a reduction of the forage base and subsequent healthy range

conditions. Water sources have not been consistently maintained or used for management purposes. The site index in relation to range condition is less than 50% for the entire range and as low as 18% in the Penn's cabin unit.

Applicable BLM Land Use Plan Decision #9
"Studies on the wild horses will include population size, animal distribution, foraging habits and population characteristics. The studies on population characteristics will include sex ratio, age structure, social structure, animal condition and special characteristics identified in the HMAP such as selection of color, a more detailed discussion on monitoring techniques can be found in the HMAP."

1. Conclusion: Met

2. Rationale: The management emphasis over the evaluation period has focused on implementation of this objective and has fully implemented the action.

Applicable BLM Land Use Plan Decision #10

WILDLIFE
The Billings Resource Area operates under a number of general wildlife habitat management objectives which are utilized Bureauwide. Each objective is mandated and/or supported by specific Federal regulation or legislation. The BLM wildlife habitat management program places special emphasis on, but is not limited to the protection, maintenance and enhancement of:

Crucial habitats for big game, upland game birds and waterfowl.

Crucial habitats for non game species of special interest and concern to state and other federal agencies.

Wetland and riparian habitats.

Existing or potential fisheries habitat

Habitat for state or federally listed threatened and/or endangered species.

1. Conclusion: Partially Met

***2. Rationale*:** Over-utilization of Key forage species has occurred and continues to occur, which has resulted in a reduction of the forage base and subsequent range conditions and degraded wildlife habitat. Water sources have not been consistently maintained or used for management purposes. The site index in relation to range condition is less than 50% for the entire range and as low as 18% in the Penn's cabin unit. Mountain Mahogany sites are in good vigor and meet wildlife needs. Sensitive species: The Yellowstone cutthroat trout is being protected along Crooked Creek and management action has been

taken through construction of a fish barrier to ensure their existence. Further, Crooked Creek is rated as Proper Functioning Condition (PFC) using Montana Riparian Association evaluation.

Applicable BLM Land Use Plan Decision #11

TIMBER MANAGEMENT

Resource Objectives and Planned Actions
"A total of 9,500 acres of forest land will be protected from cutting, except where needed for other resource value or concern such as watershed, safety or wildlife. The protection area includes the Pryor Mountains WSA's……"

***1. Conclusion*:** Partially Met

***2. Rationale*:** The PMWHR has been protected from tree removal, but a situation has been created with heavy fuel loading, unhealthy forest stands and habitat confinement for wildlife and wild horses. The situation has been exacerbated by the infestation of tree stands by insects within the PMWHR.

Applicable BLM Land Use Plan Decision #12

OFF-ROAD VEHICLE USE

Resource Objectives and Planned Actions
"The BLM will attempt to meet the demand for off-road vehicle (ORV) use on public land, while protecting watershed, visual resources and other conflicts which may occur between ORV users, adjacent landowners and permittees."

1. Conclusion: Partially Met

2. Rationale: Management of off road vehicle use has been mostly successful on the PMWHR by limiting vehicles to specified roads. Seasonal obstructions, such as mud, snow, deep ruts and dead fall have led to users traveling off roads on upper elevations to access wild horses.

Applicable BLM Land Use Plan Decision #13

WILD HORSE INTERPRETATION

Resource Objectives and Planned Actions
Interpretation of the Pryor Mountain wild horses and their management will be pursued as a cooperative venture between the BLM; the U.S. Forest Service, and the NPS……some additional interpretation is possible dependent upon the outcome of the Pryor Mountain Wild Horse Herd Management Area Plan……"

1. Conclusion: Partially Met

2. Rationale: Interpretation is ongoing and highly implemented when funding allows for adequate facility development. Interpretation has been emphasized on the NPS portion of the range due to access and existing infrastructure. Visitor use has increased in all areas of the horse range where interpretative opportunities are limited.

B. Applicable USFS Forest Plan Direction

"Provide for improved habitat conditions, including range and watershed, and for a healthy, viable wild horse population."

1. Conclusion: Not Met

2. Rationale: Over-utilization of key forage species has occurred and continues to occur, which has resulted in a reduction of the forage base and subsequent healthy range conditions. Water sources have not been consistently maintained or used for management purposes. The site index in relation to range condition is less than 50% for the entire range and as low as 18% in the Penn's cabin unit. Large areas of the PMWHR have experienced a downward trend, yet mid-elevation areas have experienced an upward trend.

The high elevation areas of the Penn's Cabin and Forest Service units have the highest rangeland health ratings. However, the HCPC of Penn's Cabin is at 18% the rangeland and health rating is at 3.75 out of 5. This appears to be a conflict but is most likely due to the amount of ground cover present which is nearly appropriate for the site despite the plant species composition being at 18% of the HCPC.

Applicable USFS Policy

It is Forest Service Policy (FSM 2260.3) to "*Confine wild free-roaming horses and burros to managed Horse and Burro Territories as established in 1971, to the extent possible."*

1. Conclusion: Not Met

2. Rationale: Adjacent areas outside of the USFS wild horse designated territory, are receiving wild horse use beyond the incidental "spill over" that might occur.

Wild horse use in adjacent Management Areas H (USFS Recommended Wilderness), L/H (Research Natural Area and USFS Recommended Wilderness), and D (Wildlife Habitat) has increased due to re-distribution pressure from the mid-1980s' low to high elevation hazing, shutting off some lower range water sources, and removal of Sorenson Extension. Poor condition boundary fence is not "confining" the horses to their designated territory. Reconstruction of the existing north boundary fence and an extension (~1/2 mile) is necessary for a more effective barrier. The designated territory is

where the Forest Service has the authority for management of wild horses. The Forest Plan acknowledges Management Area Q as the wild horse territory, pursuant to the 1971 Wild Horse and Burro Act, as do other previous decisions.

C. Each specific applicable HMAP Decisions objective is rated as met or not met the objective for management actions within the PMWHR:

1992 *HMAP Revision*:

Applicable HMAP Objective #1
The initial stocking rate for the Pryor Mountain Wild Horse Herd will be reduced from 121 head to an appropriate management level (AML) of 95 head of wild horses.

Conclusion: Not Met

Rationale: Over the evaluation period the AML has not been maintained. The current population is 160 adult wild horses.

Applicable HMAP Objective #2
There will be no designation of a specific number of horses by herd area.

Conclusion: Met

Rationale: Over the evaluation period the population has been managed as one herd.

HMAP Chapter 4:

HABITAT OBJECTIVES
Applicable HMAP Objective #3

Range
Objective: Improve Range Condition on 7,900 acres of the horse range which are currently in poor condition, 12,498 acres which are in fair condition, and maintain 2,775 acres presently in good condition.

Conclusion: Partially Met

Rationale: Over the evaluation period the AML has not been maintained. The range condition has not improved, although at mid elevation the trend indicates that it is upward. Adjustments to wild horse numbers has not occurred to the level of maintaining the AML. Utilization has been determined and climatological change has been tracked within the horse range in an attempt to relate this data to the response of the vegetative community to the proposed management actions, but the proposed management action has not been implemented.

Applicable HMAP Objective #4

Timber
Objective: Maintain the heavily timbered areas within the horse range in their current state.

Conclusion: Partially Met

Rationale: No management actions have occurred to treat timbered areas within the PMWHR. This action has allowed insect infestation to impact approximately 1013 acres of timber.

Applicable HMAP Objective #5

Mountain Mahogany
Objective: Improve the condition and vigor of the Mountain Mahogany Zones within the horse range.
Conclusion: Met

Rationale: Based upon information provided by Colorado State University mountain mahogany is in good condition and good vigor.

Applicable HMAP Objective #6

Other Vegetation
Objective: Maintain a diverse community of grasses, forbs, shrubs, and trees.
Conclusion: Not Met

Rationale: The frequency data indicates there are fewer occurrences in the number and diversity of species as compared to 1996.

ANIMAL OBJECTIVES (WILD HORSES)

Applicable HMAP Objective #7

Herd
Revised see 1992 HMAP Revision Objectives

Conclusion: Not Met

Rationale: Over the evaluation period the AML has not been maintained. The current population is 160 adult wild horses

Applicable HMAP Objective #8

Color and Conformation
Objective: Maintain the various colors within the herd and retain those horses with better conformation so as to gradually improve the quality of horses.

Conclusion: Met

Rationale: Maintaining wild horses that exhibit "Pryor Horses Characteristics" has occurred.

Applicable HMAP Objective #9

Sex Ratio
Objective: Maintain a sex ratio between 50% and the present 62% females.

Conclusion: Met

Rationale: The sex ratio has not fallen below 50% mares or exceeded 62% females.

Applicable HMAP Objective #10

Age Structure
Objective: Maintain a herd with the age structure weighed to young horses.

Conclusion: Not Met

Rationale: Nearly 70% of the animals are over the age of five and half are over the age of ten.

Applicable HMAP Objective #11

Carrying Capacity
Revised see 1992 HMAP Revision Objectives

Conclusion: Not Met

Rationale: Over the evaluation period the AML has not been maintained. The current population is 160 adult wild horses.

Applicable HMAP Objective #12

Protection
Objective: Provide for the protection of wild horses from capture, branding, harassment and undue stress.

Conclusion: Partially Met

Rationale: No cases of wild horse cruelty have been documented due to illegal capture and branding. Harassment and undue stress do occur due to the amount of people that visit the PMWHR, cases of feeding horses and getting into the middle of bands. This occurs on an almost daily basis during the summer by people wishing to interact with the horses.

Applicable HMAP Objective #13

Free-Roaming Behavior
Objective: Maintain the Wild free roaming behavior of the individual bands of wild horses. (Rest of the objective was Revised see 1992 HMAP Revision Objectives)

Conclusion: Met

Rationale: The wild horses are not impeded from using the entirety of the PMWHR. Old cross fences within the range have been removed.

ANIMAL OBJECTIVES (WILDLIFE)

Applicable HMAP Objective #14

Rocky Mountain Bighorn Sheep
Objective: Assess the potential for the reintroduction of additional Rocky Mountain Bighorn Sheep on the wild horse range. This objective will be closely coordinated between BLM, USFS, NPS, and the Montana Department of Fish, Wildlife and Parks. The NPS is pursuing the possibility of obtaining a research contract to study the resident bighorn population. The study is geared toward obtaining information on seasonal distribution, sex and age class structure, general health and total habitat potential of the population. It may also address competition with wild horses and mule deer.

Conclusion: Met

Rationale: Rocky Mountain Bighorn Sheep have migrated from releases in the Big Horn Mountains. No conflicts with wild horses or mule deer have been documented.

Applicable HMAP Objective #15

Peregrine Falcon
Objective: Assess the potential for introduction of the peregrine falcon into the Bighorn Canyon, Sykes Ridge, and Crooked Creek Canyon areas. This objective will be closely coordinated between the BLM, USFS, NPS, F&WS, and MDFW&P.

Conclusion: Met

Rationale: Peregrine Falcons have successfully re-colonized the PMWHR.

Applicable HMAP Objective #16

Predator Control
Objective: Predator control actions within the boundaries of the PMWHR will not be taken at this time.

Conclusion: Met

Rationale: Wildlife Services (formerly known as Animal Damage Control) does not operate within the PMWHR. The only take of predators is incidental use made by sportsmen through hunting license's and quotas issued by the State of Montana.

OTHER OBJECTIVES

Applicable HMAP Objective #17

Livestock Trailing
Objective: Strive to minimize forage loss along the Bad Pass Trail from livestock which are strayed or left unattended.

Conclusion: Partially Met

Rationale: Most livestock move quickly through the PMWHR and consumption of forage is minimal, however occasional unauthorized use does occur. 50 AUMs are adjudicated for trailing livestock, but have not been allocated between various livestock operators.

Applicable HMAP Objective #18

Supplemental Feeding
Objective: Supplemental feeding of the Pryor Mountain wild horse herd is a management tool which can be utilized in emergency situations in order to maintain a viable breeding population. (Rest of the objective was Revised see 1992 HMAP Revision Objectives)

Conclusion: Met

Rational: Supplemental feed has been used on emergency basis during rescue of stranded horses.

Applicable HMAP Objective #19

Sorenson Extension

Objective: Improve range conditions on the officially authorized portion of the Dryhead Herd Area by providing limited, temporary use of the Sorenson Extension as a winter range.

Conclusion: Partially Met

Rationale: Wild Horses were allowed to use the Sorenson Extension but no measured improvement in range condition in the Dryhead was ever documented. The area was withdrawn from use in 1990 due to resource concerns.

Applicable HMAP Objective #20

Land Acquisition
Objective: Acquire, through exchange, 1,467 acres of State of Montana lands and 632 acres of land in private ownership which lie within the boundaries of the designated wild horse range. Additionally, seek BLM/USFS exchange or boundary adjustment along the western edge of the horse range in the Lost Water Canyon Area.

Conclusion: Met

Rationale: The BLM has acquired the state parcels and also leases the Krueger family parcel.

Applicable HMAP Objective #21

Wild Horse Interpretation
Objective: Provide the user public with general information about the Pryor Mountain wild horses and keep them informed as to the boundaries of the horse range.

Conclusion: Partially Met

Rationale: General information about the PMWHR is provided to the public on a daily basis through telephone, internet, visitor center, brochures, etc. The BLM has only been partially successful in helping the public understand the PMWHR boundaries, planning limitations, legal requirements and motorized use restrictions.

D. Each specific applicable HMAP Revision Criteria objective or statement is rated as met or not met and determination for meeting criteria for revision of the PMWHR HMAP. These conclusions are based on the same data information and analysis described in previous sections as well as the criteria themselves:

HMAP Chapter 8
Specific Criteria for Revision

VEGETATION STUDIES

Trend
Objective: Determine and monitor changes in range condition. If monitoring indicates a decrease in range condition on areas currently in good condition or no improvement on areas in poor condition, it may be necessary to adjust the number of horses or the seasons of use where feasible

Utilization
Objective: Determine the amount of utilization by herd area and the period of year which it occurs.

Climate
Objective: To monitor climatological changes within the horse range in an attempt to relate this data to the response of the vegetative community to the proposed management actions.

Conclusion: Vegetation objectives have not been met or have only been partially realized. Therefore, the criteria for a revision of the PMWHR HMAP have been met.

WILD HORSE STUDIES

Population Counts
Objective: To have an updated and accurate count of wild horse numbers in each of the three herd areas. Excess operations will be based upon the results of theses counts and will be conducted in such a manner that numbers of horses within each herd area will remain within 5% of the estimated carrying capacity of each herd area.

Condition of Herd
Objective: To maintain a healthy viable herd of horses in relationship to the range condition.

Wild Horse Movements
Objective: To manipulate the grazing use made by horses so that a higher degree of use is made in those portions of the range in better condition and to limit spring/summer use in those areas considered essential for winter range.

Conclusion: Objectives for wild horses have not been or only partially met therefore, criteria for a revision for the PMWHR HMAP have been met.

WILDLIFE STUDIES

Population Inventory and Monitoring

Mule Deer
Objective: To evaluate the response of mule deer population levels in key areas as they

relate to the management actions being implemented. Significant increases or decreases in the population levels could dictate the need to revise certain management actions.

Black Bear
Objective: Establish a more complete data base as to black bear densities and denning locations. This information would provide a basis for evaluating the effects of implemented management actions as well as wild horse populations on the black bear population and annual movements. Should the black bear population become large enough to display adverse impacts to the natural behavior of the wild horse herd, a revision to this plan may be necessary.

Rocky Mountain Bighorn Sheep
Objective: To identify the bighorn sheep habitat and define the extent of their summer and winter ranges. Due to dietary overlap of Bighorn Sheep and wild horses, a revision to this plan may be necessary should the Bighorn sheep population become so large that they were significantly competing for forage on key wild horse use areas.

Peregrine Falcon
Objective: Inventory for the occurrence of peregrine falcons and assess the potential for reintroduction sites. Should peregrine falcons be located or reintroduced, some revisions to the plan may be necessary in order to fully protect the birds from harassment.

Browse Studies
Objective: To monitor plant composition, density, vigor, and utilization of key wildlife browse species such as mountain mahogany, black sagebrush and juniper. Emphasis will be placed on monitoring crucial winter ranges for mule deer. Should monitoring effort indicate a significant downward trend in the key areas, it may be necessary to revise the management methods being used in this plan.

Conclusion: Wildlife objectives appear to have been met therefore, criteria for revision has not been met.

RECREATION
Should recreation use of the PMWHR increase to the point that facilities such as Penn's cabin are being destroyed, upland bird or big game species of wildlife are being over harvested, or the wild horses are being unnecessarily harassed on BLM land, a revision to limit recreational use of the area may be needed as well as development of facilities to manage recreation.

Conclusion: Criteria for revision have been met. Recreation use has increased to the point that harassment of wild horses is occurring. Special recreation activities (dude ranching) has been observed chasing wild horses, people are observed feeding wild horses, chasing wild horses and petting foals. Seasonal closures to public may be needed to allow wild horse to foal without pressure from humans. Recreation site

development may be needed to manage use by recreation users.

MINERAL DEVELOPMENT
Should the demand for mineral development significantly increase, either locally or nationally, a revision to this plan may be necessary. The primary minerals of concern are uranium and oil and gas. Exploration for these mineral deposits will be tolerated as long as no significant ground disturbing activity occurs. Should exploration activities increase to the point of creating adverse impacts to other resource values or the wild horse herd, measures will be taken to control such activities and/or amend the HMAP.

Conclusion*:* Not Applicable

FORESTRY DEVELOPMENT
Should one of the following scenarios evolve a revision to lift the protective withdrawal on heavily timbered area and allow harvest may be necessary.

1. *The demand for timber products significantly increase either locally or nationally*
2. *The stands are in threat of a significant die-off due to insect infestation or disease.*
3. *A catastrophic wildfire burn occurs.*

Conclusion: The Criteria for revision has been met since stands already have suffered die off due to insect infestation. In addition, the 2001 survey indicates fuel loading levels and stand densities are high creating a high potential for a stand replacement wild land fire event. The PMWHR has the similar potential to react like the Red Waffle Fire on Red Pryor.

LAND ACQUISITION
If the BLM is unable to acquire the private and state lands identified for acquisition, and the wild horse grazing use of these areas is revoked, a revision to adjust the rangeland carrying capacity will be necessary. The total acreages involved are:

State Lands	*1,467 acres*
Private Lands	*632 acres*
Total Acreage	*2,099 acres*

Additionally, should the BLM/USFS boundary adjustment in the Lost Water Canyon area ultimately take place, a revision to incorporate management direction for this area may also be necessary.

Conclusion*:* Not Applicable

WILDERNESS DESIGNATION
If congress accepts BLM's recommendation to designate portions of the PMWHR as Wilderness, a revision as to the number and types of improvements proposed may be needed as well as a

revision to methods utilized to roundup and move wild horses.

Conclusion: Not Applicable

OFF-ROAD VEHICLE USE
If the limited closure to off-road vehicles becomes severely abused and range condition begins to decrease, a revision to close additional roads and strict enforcement procedures may be necessary.

Conclusion: Criteria for revision have been partially met: Off highway vehicle use to avoid seasonal obstacles is causing resource damage which may require seasonal closures of roads. Signing and enforcement procedures for resource damage are needed to protect PMWHR from expanding roads (width) associated with seasonal access.

VI. FINDINGS

A. Identified Findings

1. Long term drought has reduced forage production

Over the twelve years of the evaluation period, only four years had near average or above average precipitation. The lack of precipitation undoubtedly had an effect on the forage production and resulted in stress to numerous plant species. Key forage plants require rest from grazing in drought years in order to maintain their energy stores, root mass for future growth and to persist within the ecosystem. Also, the drought appears to have affected the species composition. Many of the trend plots have seen a noticeable reduction in the sagebrush frequency.

2. Forage demand exceeds forage availability

The AML has not been maintained over the time of the evaluation. An average of 160 wild horses has existed on the range over the evaluation period. This has resulted in nearly 800 additional AUMs of forage removed per annum. The extra forage consumed has resulted in heavy use on key forage plants. This has resulted in a loss of vigor as well as the key forage plants ability to maintain itself. The continuation of over-grazing of the PMWHR continues to result in lower forage production over the long-term.

3. Allowable use levels for key forage species exceeded

Heavy to severe utilization is occurring within the PMWHR. Even with utilization adjusted for precipitation, objectives still remain unattained. The over-utilization is resulting in a loss of plant diversity, plant health, and reduced forage production. Drought and over-utilization have resulted in an overall loss to the forage base. Because the AML has not been maintained over the last twelve years, attaining moderate utilization levels on key forage species is impossible.

4. Inadequate Distribution

Not all portions of the PMWHR are being utilized evenly. Due to a lack of water sources, as well as reduced forage availability, heavy use continues to occur in the same areas annually.

5. Nearly the entire area is far below the HCPC

Ecological condition is far below the historic climax plant community. The site index for each inventory unit is as low as 18% with highest at only 47%. This indicates a lack of diversity and production for the plant communities within the PMWHR. The low values of the HCPC are indicative of rangeland health and indicate these rangelands within the PMWHR are neither healthy nor functioning properly.

6. Trend data indicates both upward and downward trend is occurring

Low elevation areas of the PMWHR are experiencing a downward trend. Cool season perennial grass species are disappearing from range sites and less palatable, less nutritious warm season grasses are increasing. This shift in species composition is resulting in poor ecological condition as well as reduction in the forage base. Mid-elevation areas of the PMWHR are experiencing an upward trend despite persistent drought. Due to a lack of perennial water in these portions of the range the forage use at mid-elevation has not resulted in deleterious effects on species composition. The high elevation areas of the PMWHR do not have data collected from two points in time in order to determine an actual trend.

7. Wild Horses residing outside the designated range

Wild horses residing outside the PMWHR indicates lack of habitat for the current population. When forced to compete for limited resources, coupled with behavioral patterns (living space needs) wild horses are compelled to seek new territories to sustain themselves. Wild horses moving into new areas are also an indicator of an over-population beyond the capabilities of the resource to sustain themselves.

8. Rangeland Health

Page 29 of the Pryor Mountain Wild Horse Range Survey and Assessment, April 2004 identifies that half of the PMWHR is at risk for site deterioration and the other half is unhealthy. The average rangeland health rating for the PMWHR is 2.75 out of 5. The Britton Springs, Lower Burnt Timber, and the north and south ends of the National Park units have crossed a threshold they may not be able to recover from due to cumulative historic grazing patterns.

9. Land Use Plan and HMAP objectives for the PMWHR are not being fully realized.

Twenty four out of thirty six objectives for the Management of the PMWHR are not being fully met. Twelve objectives are being fully realized at this time. The criteria for a revision of the HMAP have been met for Vegetation, Wild Horses, Recreation, Forestry Development, and Off

Road Vehicle Use. Adjustments to management practices need to occur in order to be in conformance with current LUP guidance therefore a revision or complete re-write of the HMAP needs to occur.

10. Recreation

Recreational use of the PMWHR is having negative effects on the resource as well as the wild horses. Human pressure to view and be among wild horses has increased to the point that wild horses have lost their fear of humans. People are in a race to be the first to the top of the mountain to photograph newborn foals. This limits mares' opportunity to recover from foaling without harassment. Roads and rangelands are being damaged by vehicle use during the wet season.

11. Fuel loads excessive for forested sites

Fuel loading in the PMWHR has occurred to a point that it has created a dangerous situation, threatening public and firefighter safety. Fuel loads are documented to be higher than appropriate for the site. The fuels condition could lead to stand replacement fires, especially in heavily timbered drainages.

12. Wildlife

Objectives for the management of curleaf mountain mahogany (*Cercocarpus ledifolius)* appear to be met. Current management actions do not appear to be having a negative effect on browse. Over-utilization of forage species does appear to be having a negative effect on wildlife habitat due to lack of cover. Limited amount of water sources limits the seasonal use of areas by wildlife and full use of wildlife habitat cannot be realized.

Wildlife (Bighorn sheep) and wild horse habitat is being negatively affected by the dense tree growth. The tree density does not allow for a higher level of wildlife and wild horses to be maintained within the PMWHR.

13. Season of use

Due to a lack of water wild horses are forced to follow the snow-line up the mountain each spring. When horses follow the receding snow line the forage species are being used prior to range readiness. Key forage species are not allowed to begin and finish their growth cycle prior to being grazed.

VII. STAFF TECHNICAL RECOMMENDATIONS

A. Short Term Solutions: Short term solutions are actions that could be taken immediately or with little subsequent planning to meet land use plan objectives.

- Calculate the appropriate management level
- Maintain the current AML
- Increase water availability to encourage use in other areas and limit early season use on higher elevations (see maps)
- Repair defunct catchments to distribute use (see maps)
- Repair/Reconstruct North Boundary fence with ½ mile extension for a more effective barrier
- Move/remove those animals which are residing outside the PMWHR
- Sign and conduct regular maintenance on designated roads
- Allow for fuel reductions to meet resource management objectives
- Develop Cottonwood Spring, seep off of Bad Pass, provide water from Britton Spring, and institute a system of guzzlers (see maps)
- Seek water use agreement with Krueger's to pipe pond water to other portions of the range (see map)
- Seek local patrol volunteers for travel management education, wild horse education, and reporting violations

B. Calculate the appropriate management level based on monitoring information using the following formulas:

$$\frac{\text{Actual Use}}{\text{Measured Utilization (\%)}} = \frac{\text{Proper Stocking Level}}{\text{Desired Utilization (\%) **}}$$

$$\frac{\text{Actual Use}}{\text{Adjusted Utilization (\%) *}} = \frac{\text{Proper Stocking Level}}{\text{Desired Utilization (\%) **}}$$

* Value from utilization, adjusted using yield index
** Value from the PMWHR HMAP

1. Carrying Capacity Calculation with Measured Utilization

$$\frac{\text{Actual Use}}{\text{Measured Utilization}} = \frac{\text{Desired Use}}{\text{Desired Utilization}}$$

Year	Utilization	Wild Horse Actual Use	* Proper** Carrying Capacity
1995	81%	146	81
1996	89%	175	88
1997	66%	147	100
1998	82%	158	87
1999	81%	173	96
2000	89%	188	95
2001	53%	160	134
2002	86%	170	86
2003	89%	161	81
2004	90%	142	71

2005	85%	160	84
2006	66%	145	99

*Actual use is most likely underestimated due to wild horses using portions of the F.S. outside the PMWHR
**Calculated using 45% as desired utilization

The average proper stocking level is 92 wild horses.

a. Findings

Wild Horse AML = 92 adult wild horses year round.

2. Carrying Capacity Calculation with Adjusted Utilization

$$\frac{\text{Actual Use}}{\text{Adjusted Utilization}^*} = \frac{\text{Desired Use}}{\text{Desired Utilization}}$$

*From measured utilization, adjusted as per yield index from precipitation

Year	Utilization	Yield Index	Corrected Utilization	Wild Horse Actual Use	*Proper** Carrying Capacity
1995	81%	97.5%	79%	146	83
1996	89%	75%	67%	175	117
1997	66%	99%	65%	147	102
1998	82%	123%	100%	158	71
1999	81%	68%	55%	173	142
2000	89%	63%	56%	188	151
2001	53%	83%	47%	160	103
2002	86%	63%	54%	170	142
2003	89%	54%	48%	161	151
2004	90%	58%	52%	142	123
2005	85%	127%	100%	160	72
2006	66%	39%	26%	145	218

**Actual use is most likely underestimated due to wild horses using portions of the F.S. outside the PMWHR
**Calculated using 45% as desired utilization

The average proper stocking level is 117 Wild Horses.

b. Findings

Wild Horse AML = 117 adult wild horses year round.

Based upon monitoring data adjusted for precipitation an AML of 117 adult wild horses is the maximum numbers that can be maintained without damage to the range or additional range improvements to distribute use.

3. Conclusion: The AML should be maintained at a level between 92 to 117 adult wild horses. *109 IBLA 118 & 119 determined: "We interpret the term AML within the context of the statute to mean that "optimum number" of wild horses which results in a thriving, natural ecological balance on the public lands. Further 118 IBLA 75 determined "proper range management dictates removal of horses before the herd size causes damage to the rangeland. Thus, the*

optimum number of horses is somewhere below the number that would cause damage."

IBLA 2005-41 determined: *Nothing in the WFRHBA of 1971 or implementing regulations in 43 CFR 4700 prohibits BLM from establishing an appropriate management level for wild horses based on rangeland monitoring data, climate, and wild horse health that anticipates herd augmentation to maintain the herd's genetic diversity. A BLM decision establishing an appropriate management level for wild horses will be affirmed on appeal when the decision is based upon a reasoned analysis of rangeland monitoring data, climate, and wild horse health conditions and the appellant fails to show that BLM committed an error in ascertaining, collecting or interpreting such data.*

IBLA 2006-91 determined-- BLM does not violate the Act by establishing an AML that necessitates herd augmentation to maintain genetic diversity BLM is entitled to rely on the professional opinion of its technical experts, concerning matters within the realm of their expertise, where it is reasonable and supported by record evidence.

C. Long Term Solutions: Long term solutions are actions that would need additional planning, HMAP revision or take several years to implement in order to meet land use plan objectives.

- Increase forage availability through vegetation treatments, including prescribed fire where applicable and or in identified areas if ever released from wilderness study
- Implement a procedure for fire use to limit catastrophic fire and benefit habitat
- Limit management practices for wild horse use to areas within the designated PMWHR
- Ensure wild horses stay on the PMWHR
- Invest in more permanent water developments (if private lands are acquired)
- Seek legal opportunities for additional areas for wild horses to use.
- Implement seasonal closures of specified roads within the PMWHR during the main foaling season
- Institute fee collection for recreational use within the PMWHR
- Develop recreation site(s) to manage use
- Improve habitat conditions for Bighorn sheep and other wildlife
- Provide periodic augmentations of wild horses to maintain genetic health
- Seek partnerships for establishing satellite herds

1. Conclusion: Long term solutions may require site specific NEPA in order to implement. These actions may require analysis either through an HMAP revision or through individual site specific NEPA documents.

C. Additional Monitoring

1. Collect use pattern maps at the end of each use period per horse use.

2. Establish Permanent Trend Study Sites within each site index unit.

3. Establish range utilization cages within close proximity to all enclosures or in areas as needed.

4. Establish key areas and use the key management area KMAs concept for rangeland and wild horse management actions.

5. Continue to monitor for noxious weeds.

6. Continue to monitor recreation use.

7. Conduct browse studies for wildlife on an annual basis.

8. Conduct Proper Functioning Condition Assessments on all riparian areas

VIII. INTERESTED PUBLIC TECHNICAL RECOMMENDATIONS

- Repair the boundary fence and limit wild horse use to the PMHWR and reduce the herd to the appropriatte management level. –**Buzz Tuell**
- Develop water to control horse use, develop signage to help people know where to go and how to conduct themselves, use the word please on all signs, maintain existing roads, seasonal closures on roads, involve the public more often. – **Wiliam Lee Hill**
- The effects of trampling on soils and on *Lesquerella lesicii* populations must be addressed in future plans for managing wild horses. –**Peter Lesica**
- Maintain horse numbers below AML until range conditions improve.- **John Emmerich Deputy Director, Wyoming Game and Fish Department**
- Seek regulations that deal with the PMWHR, not Bureau wide, cooperate fully with USFS and NPS and Fish and Game departments, secure boundaries and keep up required maintenance, Manage horse populations to areas you have available, keep up public relations and don't stretch the truth, limit actions to keep the horses wild and free-roaming. –**Lowell K Brown**
- Break the herd down into individuals, identify each animal with a transponder chip and perform a complete physical examination of each animal with DNA analysis, fecal, hair exams, blood testing and photographs. Develop a detailed data base of individual animals and develop a herd health, breeding and culling plan for the herd based on facts and science. Assemble a team of range management experts from the ranks of the BLM, Custer National Forest, MSU and private industry to develop a rest and restoration plan. Assemble a team of wildlife experts from other agencies and private sources to give recommendations to improve habitat. Recreation must be managed. Campgrounds must be built, managed and maintained, roads must be designated with rocks, berms, barriers and signs, ATV use in areas with horses must be prohibited. Use of the range by private and domestic horses must be prohibited to protect the herd from exposure to parasites and disease. People must be educated and managed, seasonal closures, interpretive center must be built and staffed, specail foaling demonstration project, enforcement of rules and laws. More public-private partnerships. –**Marty Connell DVM CAC**
- HMAP objective's # 8 and #10 have little value in management of wildlife populations or ensuring the success of the population (paraphrased). –**Jay F. Kirkpatrick, PHD**

- Expand the wild horse range, develop new and more waters, strict regulation of motorized vehicles. –**Bettye Dominick FOAL**
- Eliminate Cattle, no removal of older horses, utilize birth control to control numbers,no augmentation of outside horses, no sattelite herds, more water developments, volunteer program for law enforcement, range expansion onto the Custer National Forest, no construction of fences to restrict horses from moving off the horse range, work with Montana and Wyoming Departments of Wildlife.- **Betty Pritchard, Sandra Cook**
- Spend Money on range improvement including reseeding when necessary, maintain and create new water catchmentsto distribute use of the range by horses, retain the herd at a genetically viable number of 150-200 breeding age adults, manage the herd as wildlife not as part of a selective breeding operatio based on color and confirmation. BLM should make every effort to reclaim the land from the Forest Service for the horses. Limit harrassment and undo stress, institute a permit fee, no introductions of outside horses. – **Lynne Pomeranz**
- HMAP objective's # 8 and #10 have little value in management of wildlife populations or ensuring the success of the population, supplemental feeding should continue as needed, no introductions of outside horses, recreation should take a backseat to wild horses, Sorenson extension should become a permanent part of the PMWHR, maintain a buffer population within the range (paraphrased).- **Pat Fazio Ph. D Wyoming animal Welfare Network**
- Don't build any fences, allow for more predation, no introductions of outside animals.- **Vanessa Register**
- Manage for at least 218 animals, develop new water sources, allow for greater predation, no relocation of black bears, no imported horses from other herds (paraphrased). -**Craig C. Downer**
- Allow for natural management of the wild horses and do not allow motorized travel on the PMWHR. -**Sandra Leggit, Kathleen Martin**
- Range expansion into the Custer National Forest, no construction of fences that will restrict wild horse movement into designated or undesignated areas, implement a natural management strategy allowing predators to manage populations, voulunteers report vilolations, BLM work with game and fish departments to suspend all hunting of mountain lions, no periodic augmentations of outside horses, no creation of satellite herds, develop more water developments and water sources, manage for at least 150 wild horses. -**, Cindy MacDonald, Jean Hennen, Michael Collie, Roxanne Cheney, Darynne Jessler, Pam Stoddard, Lynn Huffstutler, Kathy Weigend, Robert M. Fleck, Steph Franklin, Christine Sterpetti, Tamela Roberson, William Roberson, Kathy Pike, Doug Taylor, Deb Little, Julianne French, Christina Madlener, Kathleen Martin, Terri Goon, Pamela Maanum, Judy Cassario, Joe Cassario, Shirley Parish, Carl Pivonka, Laura Pivonka, Terry Watt, Marilyn Wilson, Nancy Drews, Sandra S. Inselman, Sandra Church, Carol Walker, Aleta Pahl, Vaughn Judson,Carol Wolbers, Nona Van Damme, Janice Douma, Ed Berkeley, Dorrell-Jo MacWhinnie, W.H.O.A. of Honey Creek Middle School, Lindsay Rising, Linda Crafis, Larry Kuster, Mary Kuster, Judy Tomlinson, Mike Rudovsky, Ann MacAdam, Valerie Williams, Sandy Alexander, Jennifer Glick, Susan Sutherland,**

David Richards, Mike Rudovsky, Susan Meckes, Ann McAdam, Alessandro Trimboli, Vaughn Judson, Cindy Stuart

- No seasonal road closures during foaling season.- **Darryne Jessler, Lynn Huffstutler, Cindy MacDonald, Deb Little, Julianne French, Christina Madlener, Sandra Cook, Judy Cassario, Joe Cassario, Shirley Parish, Terry Watt, Marilyn Wilson, Carol Walker, Vaughn Judson, Ed Berkeley, Dorrell-Jo MacWhinnie, Judy Tomlinson, Mike Rudovsky, Ann MacAdam, Valerie Williams, David Richards, Mike Rudovsky, Susan Meckes, Ann AcAdam, Alessandro Trimboli, Vaughn Judson, Cindy Stuart**
- Place rain gauges at crucial locations on the PMWHR, BLM should be responding to drought by reducing the size of the horse herd, BLM should reduce the herd to 45 to 50 horses, after their habits have changed and diet has shifted the herd could be increased. Entice horses to graze mid-slope through water development and mineral supplementation, fence and close water sources in sub-alpine with drift fences across Sykes Ridge and Burndt Timber Ridge, place GPS locators on a few lead mares to monitor locations to determine grazing use. –**Clayton McCracken, MD, MPH**
- Range expansion into more areas of the Custer National Forest, implement a natural management strategy allowing predators to manage populations, no periodic augmentations of outside horses, no creation of satellite herds, BLM work with game and fish departments to suspend all hunting of mountain lions, population controlbe limited to periodic helicopter gathers only when wild horses pose a threat to themselves and their environment, all gathered animals be offered for adoption at Britton Springs through competitive bid process, eliminate the use of PZP,no construction of fences that will restrict wild horse movement into designated or undesignated areas, develop more water developments and water sources, remove interior barb wire fencing, rehabilitate the bait trap site above Krueger Pond, ban off-road vehicle use, license all ATVs entering the horse range, implement self-pay stations at all entrances to the horse range, implement a speed limit within the horse range, no main roads be closed to the horse range, conduct road maintenance, use more volunteer's on the mountain, manage for at least 150 horses and as many as 300.-**Ginger Kathrens The Cloud Foundation, Makendra Silverman**
- Seed areas of th range that are overused, install onsite weather guages within the PMWHR, signage within the horse range, signage should be more definitive for on off road use and littering, and getting close to the horses and show possible penalties, include "Spanish background or type", no change of the sex ratio, plant species in Penn's cabin area.-**John T. Nickle**
- Expansion should be allowed into the Custer Natiuonal Forest, state of Montana should purchase land for the horses, no fences that would restrict movement of horses within the range or to restrict movement off of the range onto the custer national forest, allow for a natural management strategy stop all mountain lion hunting, no augemtation of animals from outside herds, allow a minimum of 150 horses, no creation of sattellite herds, develop more water sources, restrict the use of ATV's and prosecute anyone harrassing horses, no prescribed fire or vegetation treatments, sowing of native seeds,- **Barbara Warner, Secretary American Horse Defense Fund**
- The range comes first,eight more years of range study, 80% of herd needs to be over two years old if a low AML is in place, more water catchments, increase the size of the range,

BLM should have more "say" in managing of all wildlife on the horse range, PZP should be used differently, removal of older horses that do not have spanish characteristics, look carefully at past HMAP objectives look to the future instead of the past.-**Dale Hartman, President Pryor Mtn. Mustang Breeders Assoc**

- Due to the unique genetics of the herd, if managed, it should be managed to best preserve the genetics within the herd to ensure long term genetic health. Management should not cause the unnecessary promotion or extinction of genetic lines. The herd should never come to the point where augmentation is proposed, and augmentation should never occur. If managed, the herd should be managed to promote and preserve the Spanish-type genetic based on observations of the phenotypes of individual horses. The herd should be allowed to stabilize, and there should be no removals until this occurs. Older horses should never be removed. Accurate and detailed censuses should accompany any discussion of the herds population. The Bureau of Land Management should continue to work with others in establishing up to date censuses. There has been an increase in visitors to the Pryor Mountain Wild Horse Range, and this trend is likely to continue. As such, proper enforcement and education must be provided to ensure visitors know how to find and view the Pryor horses.-**Matthew Dillon**
- Further evaluation of the overall wild horse program in conjunction with the PMWHR evaluation. Ecotourism shouldbe encouraged, open up zeroed out wild horse territories and use them for holding excess horses. Encourages the use of PZP.-**Patience O'Doud, Wild Horse Observers Association**
- I suggest you revise your whole plan to place a much greater emphasis on supporting natural controls rather than the expensive controls of periodic round-ups, etc**.** I strongly recommend you include a study of the natural wildfire regimes for the area including grassland nutrient cycling and develop a comprehensive fire management plan based on this. Last but not least I oppose the fencing you recommend to help capture horses. This is an infringement on the wildness of the area and may also block the natural movement patterns of other wild animals such as mule deer and black bears.-**Wayne P. McCrory, R.P.Bio.**
- Make improvements to the range, maintain the AML based upon retention of certain allelic frequencies, ammend the Land Use Plan, and expand the horse range.-**Michael Priolo**
- Proceed with caution if any changes are undertaken.-**Lin Sherman**
- The BLM has interpreted their data incorrectly. The AML should be no higher than 71 wild horses and set in a range between 43-71 animals. No water besides natural water should be developed for wild horses. Water should not be fenced off for management purposes. BLM Montana should adopt the Mojave-Southern Great Basin Resource Advisory Councils Standrds and Guideelines for wild horse management. PZP use should end as it is not "congruent" with the act. Adjusted utilization used in the carrying capacity calculation is in error and should be discounted.-**Craig Stevenson**
- Conclusion for Land Use Plan Decision # 4 should be not met instead of partially met, the fence between the PMWHR and the Lost Water Canyon area of Custer National Forest needs to be reconstructed promptly and the horses removed from west of the fence.-**Dick Walton**

- Endorse the prompt reduction of the herd size to the AML of 95 adult horses or probably fewer, do not attempt to maximize the number of horses until improvement of the range can be demonstrated, conduct regular and frequent gathers and imuno-contraception as methods of reducing and maintaining the appropriate herd size, endorse the suggested approach of establishing a sattelite herd and periodically augmenting the PMWHR horses by introductions from the satellite herd any such herd be established on less rugged, fragile and arid land, prompt reconstruction of the north boundary fence, endorse appropriate seasonal road closures, all plants need monitoring not just forage plants, continuing studies by botanists, ecologists, and conservation biologists of the entire diversity of the truly unique Pryor Mountain ecosystem.**-Jeff Hunnes, President Eastern Wildlands Chapter Montana Wilderness Association**

APPENDIX I

Standards for Rangeland Health for Public Lands Administered by the Bureau of Land Management for Montana and the Dakotas

Miles City STANDARD #1: Uplands are in proper functioning condition.

This means that soils are stable and provide for the capture, storage and safe release of water appropriate to soil type, climate and landform. The amount and distribution of ground cover (i.e., litter, live and standing dead vegetation, microbiotic crusts, and rocks/gravel) for identified ecological site(s) or soil plant associations is appropriate for soil stability. Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface sealing and compaction layers below the soil surface is minimal. Ecological processes including hydrologic cycle, nutrient cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site.

- As indicated by:

Physical Environment

- erosional flow patterns; - surface litter; - soil movement by water and wind; - infiltration; - soil crusting and surface sealing; - compaction layer; - rills; - gullies; - cover amount; and - cover distribution.

Biotic Environment

- community diversity; - community structure; - exotic plants; - photosynthesis activity; - plant status; - seed production; - recruitment; and - nutrient cycle.

Miles City STANDARD #2: Riparian areas and wetlands are in proper functioning condition.

This means that the functioning condition of riparian-wetland areas is a result of the interaction among geology, soil, water, and vegetation. Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid flood plain development; improve flood water retention and ground water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity.

The riparian/wetland vegetation is controlling erosion, stabilizing streambanks, shading water to reduce stream temperature in the summer and provide thermal protection in the winter, stabilizing shorelines, filtering sediment, aiding flood plain development, dissipating energy, delaying floodwater, and increasing recharge of ground water where appropriate to landform. The stream channels and flood plain dissipate the energy of high water flows and transport sediment appropriate for the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity), climate, and landform. Soils support appropriate riparian-wetland vegetation, allowing water movement, filtering sediment, and storing water for later release. Stream channels are not entrenching and water levels maintain appropriate riparian/wetland species.

Riparian Areas are defined as an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and streambanks are typical riparian areas. Excluded are such sites a ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil.

- Proper functioning condition of riparian areas are Indicated by:

Hydrologic

- flood plain inundated in relatively frequent events; - amount of altered streambanks; - sinuosity, width/depth ratio, and gradient are in-balance with the landscape setting (i.e., landform, geology, and bioclimatic region); - riparian zone width; and - upland watershed not contributing to riparian degradation.

Erosion Deposition

- flood plain and channel characteristics, i.e., rocks, coarse and/or woody debris adequate to dissipate energy; - point bars are vegetating; - lateral stream movement is associated with natural sinuosity; - system is vertically stable; - stream is in-balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition); and - bare ground.

Vegetation

- reproduction and diverse age structure of vegetation; - diverse composition of vegetation; - species present indicate maintenance of riparian soil moisture characteristics; - streambank vegetation is comprised of those plants or plant communities that have deep binding root masses capable of withstanding high streamflow events; - utilization of trees and shrubs; - healthy riparian plants; and - adequate vegetative cover present to protect banks and dissipate energy during high flows.

Miles City STANDARD #3: Water quality meets Montana State standards.
This means that surface and ground water on public lands fully support designated beneficial uses described in the Montana Water Quality Standards.
• As indicated by:
- dissolved oxygen concentration; - pH; - turbidity; - temperature; - fecal coliform; - sediment; - color; - toxins; and - others: ammonia, barium, boron, chlorides, chromium, cyanide, endosulfan, lindane, nitrates, phenols, phosphorus, sodium, sulfates, etc.

Miles City STANDARD #4: Air quality meets Montana State standards.
This means that air quality on public lands helps meet the goals set out in the State of Montana Air Quality Control Implementation Plan. Efforts will be made to limit unnecessary emissions from existing and new point or non-point sources.
Bureau of Land Management management actions or use authorizations do not contribute to air pollution that violates the quantitative or narrative Montana Air Quality Standards or contributes to deterioration of air quality in selected class areas.
• As indicated by:
Section 176(c) Clean Air Act which states that activities of all Federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:
- cause or contribute to any violations of ambient air quality standards; - increase the frequency of any existing violations; and - impede the State's progress in meeting their air quality goals.

Miles City STANDARD #5: Habitats are provided for healthy, productive, and diverse native plant and animal populations and communities. Habitats are improved or maintained for special status species (federally threatened, endangered, candidate or Montana species of special concern).
This means that native plant communities will be maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant life forms. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Management for native vegetation is a management priority. Ecological processes including hydrologic cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site. The environment contains all the necessary components to support viable populations of a sensitive/threatened and endangered species in a given area relative to site potential. Viable populations are wildlife or plant populations that contain an adequate number of reproductive individuals distributed on the landscape to ensure the long-term existence of the species.
• As indicated by:
- plants and animals are diverse, vigorous and reproducing satisfactorily, noxious weeds are absent or insignificant in the overall plant community; - an effective weed management program is in place; - spatial distribution of species is suitable to ensure reproductive capability and recovery; - a variety of age classes are present (at least two age classes); - connectivity of habitat or presence of corridors prevents habitat fragmentation - diversity of species (including plants, animals, insects and microbes) are represented; and - plant communities in a variety of successional stages are represented across the landscape.

APPENDIX II

PUBLIC CONSULTATION PROCESS

STEP ONE
The annual mailing list for wild horse actions is developed either through a letter sent out to solicit interested publics participation or through the request of interested publics to participate.

STEP TWO
Draft evaluation is developed and sent out for a thirty day public review.

STEP THREE
BLM, USFS, and NPS address comments incorporate any data, information or analysis from interested publics and finalizes technical recommendations to be incorporated in the Final Management Evaluation Report.

STEP FOUR
BLM, USFS, and NPS meet with interested public in an effort to address and try to resolve issues prior to the finalization of the Final Management Evaluation Report.

STEP FIVE
The Draft Herd Management Area Plan incorporates Management Evaluation Report as well as Population Management (non AML) objectives, other multiple use objectives, and a Preliminary Environmental Assessment. The Draft HMAP/Preliminary Environmental Assessment is sent out for 30 days to the public for review asking for comments and/or additional analysis or additional alternatives for consideration.

STEP SIX
The HMAP/EA is finalized after consideration of public participation.

For the Bureau of Land Management the Herd Management Area Plan is issued with a signed decision record for a 30 day appeal and stay period. If the decision is appealed for BLM it goes to the Interior Board of Land Appeals (IBLA) for a hearing. After 30 days the decision is in place unless IBLA remands the decision back to the BLM or IBLA rules in favor of plaintiff.

For the Forest Service the Herd Management Area Plan is issued with a signed decision notice for a 45 day appeal filing period. When no appeal is filed within the 45-day time period, implementation of the decision may begin on, but not before, the 5th business day following the close of the appeal filing period. If an appeal is filed, there is a 45-day appeal resolution period. At the end of the appeal resolution period, an appeal decision is issued. The decision may be implemented on but not before the 15th business day following the date of appeal disposition.

Bighorn Canyon, and the Intermountain Region of the National Park Service will review the EA/HMAP. If approved, the HMAP can be immediately implemented, and no formal appeals process exists.

APPENDIX III

ADJUSTMENTS TO APPROPRIATE MANAGEMENT LEVEL

The appropriate management level is determined based on the amount of available forage, water, cover, and space as established in the land use plans, activity plans or decisions by the Bureau of Land Management (BLM), United States Forest Service (USFS), and National Park Service (NPS). This is referred to as AML and is specified in management of wild horses. It includes all use made by wild horses. Use may vary by year and could be less than the AML. Any changes required to the AML are made from actual use. Changes could include an increase or decrease in the number of wild horses use and/or modification to management practices.

The BLM, National Park Service, and Forest Service periodically reviews the wild horse use identified as the AML to determine if wild horse use is in conformance with the land use plan. The evaluation process is the process used to determine if existing uses for Herd Management Area including wild horse grazing are meeting or making progress towards meeting land use plan objectives, Herd Management Area Plan objectives and land use plan decisions, in addition to the standards for rangeland health. (Refer to Appendix II Public Consultation Process). If changes are needed to the current wild horse use or management practices they are made based on consistency with management objectives. The evaluation presents the standards and land use plan objectives which are evaluated. The Technical Recommendations section of the evaluation presents management practices which if implemented could assist in meeting or making progress towards the land use plan objectives in addition to the standards for rangeland health. The guideline(s) that apply to each recommendation are also identified for each technical recommendation.

Changes or adjustments to AML are implemented through a decision. Consultation is conducted with interested publics prior to making changes to AML. (Refer to Appendix II Public Consultation Process). Any changes made to wild horse use will be based on meeting or making progress toward meeting land use plan objectives and the standards for rangeland health.

Monitoring information is used to determine if specific objectives and standards are being met. Any changes in AML are supported by monitoring, field observations, inventory or other data acceptable to the authorized officer. Monitoring is conducted in accordance with procedures and methodologies identified in BLM and Interagency Technical References.

APPENDIX IV

Glossary

Act means the Wild and Free-Roaming Horse and Burro Act of December 15, 1971, as amended (16 U.S.C. 1331-1340), commonly referred to as the Wild Free-Roaming Horse and Burro Act

Activity plan means a plan for managing a resource use or value to achieve specific objectives. For example, a herd management area management plan (HMAP) is an activity plan for managing wild horses use to improve or maintain rangeland conditions, and wild horse health.

Actual use means where, how many, what kind of wild horses, and how long grazing on the PMWHR, or on a portion or pasture of the PMWHR.

Animal unit month (AUM) means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of 1 month (one horse, five sheep). It is recognized that there are differing agency definitions for AUMs and associated animal conversion factors. For purposes of this evalution, an AUM equates to one adult horse for a period of 1 month.

Appropriate Management Level **means the maximum number of wild horses or burros excluding the current years foal crop that can be maintained within an area without causing deterioration of rangeland resources.**

Authorized Officer means any employee of the Bureau of Land Management to whom has been delegated the authority to perform the duties described therein.

Authorized officer means any person authorized by the Secretary to administer regulations in this part.

Carrying Capacity means the maximum stocking rate possible without inducing damage to vegetation or related resources. It may vary from year to year on the same area due to fluctuating forage production.

Commercial exploitation means using a wild horse or burro because of its characteristics of wildness for direct or indirect financial gain. Characteristics of wildness include the rebellious and feisty nature of such animals and their defiance of man as exhibited in their undomesticated and untamed state.

Crop Yield means the effective precipitation that is utilized by forage plants in order to produce biomass.

District means the specific area of public lands administered by a Field Manager.

Executive Order means a directive given to employee's of the executive branch in order to fulfill the wishes of the President or their authorized delegated representative

Herd Area means the geographic area identified as having been used by a herd as its habitat in December 1971 at the passage of the Wild Free Roaming Horse and Burro Act (PL 92-195) as amended.

Herd Management Area means an area established for the maintenance of wild horse and burro herds.

Herd Management Area Management Plan (HMAP)" means a documented program developed as an activity plan, that focuses on, and contains the necessary instructions for the management of wild horses on specified public lands to meet, wild horse health, resource condition, sustained yield, multiple use, economic and other objectives.

Interested public means an individual, group or organization that has submitted a written request to the authorized officer to be provided an opportunity to be involved in the decision making process for the management of wild horses or other public lands or has submitted written comments to the authorized officer regarding the management of public land on a specific area.

Land use plan means a resource management plan, developed under the provisions of 43 CFR part 1600, 36 CFR part 219, or management framework plan. These plans are developed through public participation in accordance with the provisions of from the Federal Land Policy and Management Act of 1976 public land laws, rules, regulations, and policies, and establish management direction for resource uses of public lands.

Monitoring means the periodic observation and orderly collection of data to evaluate:
(1) Effects of management actions; and
(2) Effectiveness of actions in meeting management objectives.

Precipitation Index the amount of precipitation that is proportional to the long term average.

Public lands means 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, except lands held for the benefit of American Indians.

Range improvement means an authorized physical modification or treatment which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes, but is not limited to, structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means.

Rangeland studies means any study methods accepted by the authorized officer for collecting data on actual use, utilization, climatic conditions, other special events, and trend to determine if management objectives are being met.

Range Readiness means the timing in a forage plants growth cycle when it is “ready” for grazing use without causing deleterious effects.

Secretary means the Secretary of the Interior, **Secretary of Agriculture** or his authorized officer.

Service area means the area that can be properly grazed by watering at a certain water source.

State Director means the State Director, Bureau of Land Management, or his or her authorized representative.

Trend means the direction of change over time, either toward or away from desired management objectives.

Utilization means the percentage of forage that has been consumed by livestock, wild horses and burros, wildlife and insects during a specified period. The term is also used to refer to the pattern of such use.

Use means the current use, including wild horse grazing.

Wild Horse Range means an area of land designated from a herd management area to be managed principally but not necessarily exclusively, for wild horse or burro herds

Yield Index The amount of forage that is actually produced in any given year.

APPENDIX V

Summary of Monitoring Data

The following is a list of data collected by various resource specialists, Natural Resource Conservation Service, United States Geological Survey-Branch of Research and Development, Colorado State University, Montana State University-Billings as well as date data was collected on the PMWHR.

Field data and worksheets are available for review at the Billings Field Office.

Type of Data	**Worksheet(s)**	**Date**	**Location**	**Specialist/Tech**
Utilization	Key Forage Plant Method	1995	PMWHR wide	Larry Padden
		1996	PMWHR wide	Larry Padden
		1997	PMWHR wide	Larry Padden
		1998	PMWHR wide	Larry Padden
		1999	PMWHR wide	Larry Padden
		2000	PMWHR wide	Larry Padden
		2001	PMWHR wide	Larry Padden
		2002	PMWHR wide	Larry Padden
		2003	PMWHR wide	Larry Padden
		2004	PMWHR wide	Larry Padden
		2005	PMWHR wide	Larry Padden
		2006	PMWHR	Larry Padden
Ecological Condition (site index)		2004	PMWHR wide	NRCS
Production		2004	PMWHR wide	NRCS
Rangeland Health Assessment		2004	PMWHR wide	NRCS
Trend	Daubenmire Method (Modified)	1996	PMWHR C-17,C-18,C-20,C-21, C23	Larry Padden
Trend	Daubenmire Method (Modified)	2007	PMWHR C-17,C-18,C-19 C-20,C-21, C23	Jared Bybee
Actual use and Distribution	Field Observation /Helicopter census	1995	PMWHR wide	Linda Coates-Markle, David Jaynes, Rick Ekwortzal
		1996	PMWHR wide	Linda Coates-Markle, David Jaynes, Rick Ekwortzal

				USGS
		1997	PMWHR wide	Linda Coates-Markle, Rick Ekwortzal USGS, Troy Cattoor
		1998	PMWHR wide	Linda Coates-Markle, Rick Ekwortzal USGS, Aaron Swallow
		1999	PMWHR wide	Linda Coates-Markle, Rick Ekwortzal USGS,
		2000	PMWHR wide	USGS
		2001	PMWHR wide	USGS-BRD Susan Hahn
		2002	PMWHR wide	USGS-BRD
		2003	PMWHR wide	USGS-BRD
		2004	PMWHR wide	USGS-BRD
		2005	PMWHR wide	USGS-BRD
		2006	PMWHR wide	USGS-BRD
Cover		2004	PMWHR wide	NRCS
PFC	PFC	2005	Crooked Creek (BLM)	Max Thompson
Use Pattern Mapping	Maps, Use Pattern Map	2007	PMWHR wide	Jared Bybee,
Fuels Classification		2001	BLM portion of PMWHR	Erin Riley
Ungulate Vegetation Dynamics Study	Dissertation	1999	Mahogany Belt PMWHR	Jan Peterson CSU
Recreation Visitor Study	Reports/Survey	2003	PMWHR wide	Don Galvin MSU-B
Visitor Monitoring	Reports	2005	PMWHR wide	Don Galvin
Gully Project	Survey	2005	Penns Cabin Meadow	Clayton McCracken
Wild Horse Demographics	Table	2007	PMWHR wide	Mathew Dillon

APPENDIX VI

PRECIPITATION DATA

LOVELL, WYOMING

Monthly Total Precipitation (inches)

(485770)

File last updated on Apr 12, 2007
*** Note *** Provisional Data *** After Year/Month 200612
a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,
z = 26 or more days missing, A = Accumulations present
Long-term means based on columns; thus, the monthly row may not
sum (or average) to the long-term annual value.
MAXIMUM ALLOWABLE NUMBER OF MISSING DAYS : 5
Individual Months not used for annual or monthly statistics if more than 5 days are missing.
Individual Years not used for annual statistics if any month in that year has more than 5 days missing.

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1948	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.48	0.49	0.07	0.09	0.12	1.25
1949	0.45	0.14	0.55	0.19	1.84	2.18	0.82	0.00	0.71	1.22	0.17	0.41	8.68
1950	0.45	0.01	0.25	0.19	0.71	1.10	0.62g	0.08f	1.37	0.02	0.32	0.03a	4.45
1951	0.09	0.00	0.10	0.91	0.59	0.98	1.85	0.45	0.35	1.09	0.12	0.39	6.92
1952	0.22	0.17	0.41	0.56	0.93	0.65	0.63	0.19	0.10	0.00	0.19	0.11	4.16
1953	0.12	0.18	0.30	0.47	1.43	1.09	0.10	0.24	0.55	0.57	0.34	0.12	5.51
1954	0.22	0.08	1.13	0.30	1.31	1.37	0.31	0.27	0.00	0.09	0.00	0.00	5.08
1955	0.06	0.31	0.35	0.35	1.51	1.49	0.00	0.31	0.66	0.58	0.18	0.39	6.19
1956	0.16	0.03	0.37	0.82	0.82	1.62	0.00z	0.71	0.08	0.03	0.20	0.09	4.93
1957	0.09	0.23	0.22	0.46	1.42	1.28	0.00	0.46	0.74	0.72	0.11	0.03	5.76
1958	0.15	0.50	0.13	0.34	0.32	1.71	2.25	0.69	0.15	0.70	0.42	0.20	7.56
1959	0.19	0.41	0.13	1.23	0.75	0.83	0.20	0.12	0.77	0.88	0.58	0.36	6.45
1960	0.00	0.14	0.13	0.18	0.44	0.39	0.00	1.04	0.21	0.21	0.43	0.32	3.49
1961	0.00	0.08	0.14	0.56	1.66	0.05	0.75	0.19	2.17	0.37	0.04	0.00	6.01
1962	0.55	0.04	0.11	0.53	1.81	1.76	1.04	1.04	0.66	0.03	0.88	0.11	8.56
1963	0.63	0.21	0.00	0.87	1.24	0.54	0.87	0.03	1.16	0.05	0.24	0.27	6.11
1964	0.06	0.11	0.14	1.82	2.30	2.64	0.02	1.97	0.00	0.35	0.18	0.43	10.02
1965	0.31	0.13	0.28	0.23	1.82	1.91	0.50	1.28	1.01	0.35	0.00	0.07	7.89
1966	0.05	0.00	0.03	0.41	0.19	0.77	0.00	0.61	0.48	0.04	0.32	0.10	3.00
1967	0.18	0.37	0.57	0.76	0.89	3.29	0.33	0.74	0.28	0.32	0.14	0.76	8.63
1968	0.15	0.10	0.07	0.05	1.07	2.49	1.01	1.68	0.78	0.12	0.05	0.35	7.92
1969	0.41	0.00	0.03	1.32	0.78	3.97	0.28	0.08	0.42	0.74	0.28	0.00	8.31
1970	0.12	0.05	0.26	1.08	0.98	0.68	0.18	0.00	1.53	0.20	0.32	0.11	5.51

1971	0.38	0.56	0.44	0.59	1.21	0.42	0.23	1.00	0.83	1.49	0.23	0.69	8.07
1972	0.76	0.00	0.28	0.24	0.96	1.13	0.48	2.08	0.15	0.56	0.14	0.19	6.97
1973	0.09	0.03	0.17	0.58	0.03	1.19	1.22	0.21	2.56	0.14	0.40	0.06	6.68
1974	0.08	0.00	0.00	0.15	0.46	1.81	1.30	0.73	0.00 z	0.95	0.68	0.00	6.16
1975	0.61	0.10	0.32 b	1.32	0.73	0.87	0.83	0.00	0.15	1.52	0.17	0.07	6.69
1976	0.10	0.12	0.06	1.33	0.08	1.22	0.12	1.75	1.05	0.39	0.40	0.00	6.62
1977	0.36	0.00	0.56	0.52	0.93	1.02	0.63	1.27	0.53	0.42	0.06 a	0.43	6.73
1978	0.31	0.87	0.00 z	1.70	2.61	0.18	0.72	0.18	2.32	0.00	0.40	0.30	9.59
1979	0.45	0.00	0.00	0.25	1.55	0.88	0.30	0.78	0.00	0.57	0.35	0.00	5.13
1980	0.09	0.00	0.13	0.02	2.60	0.95	0.47	0.97	0.86	0.40	0.30	0.10	6.89
1981	0.12	0.34	0.66	0.64	3.60	0.60	0.26	0.16	0.20	1.01	0.01	0.08	7.68
1982	0.09 a	0.10	0.17	0.15	0.74	2.23	0.96	1.01	0.65	0.67	0.09	0.48	7.34
1983	0.00	0.00	0.36	0.00	0.91	1.01	0.66	0.36	0.49	1.02	0.21 i	0.00 z	4.81
1984	0.15	0.12	0.49	1.01	0.80	0.54	0.69	0.11	0.41	0.00 z	0.10	0.19	4.61
1985	0.22	0.03	0.33	0.13	0.64	1.23	0.78	0.65	1.28	0.18	0.26	0.22	5.95
1986	0.10	0.32	0.05	0.92	0.66	0.98	0.41	1.25	2.26	0.25	0.37	0.00	7.57
1987	0.00	0.21	0.18	0.16	2.08	0.60	2.05	0.67	0.55	0.00	0.37	0.00	6.87
1988	0.10 a	0.32	0.13	0.26	2.38	0.26	0.00	0.17	0.61	0.43	0.42	0.28	5.36
1989	0.40	0.12	0.73	0.40	1.90	0.11	0.54	0.81	0.25	0.88	0.16	0.71	7.01
1990	0.15	0.04	0.93	0.71	0.81	0.35	1.25	0.76	0.25	0.54	0.14	0.19	6.12
1991	0.10	0.14	0.49	1.28	1.62	2.32	0.18	0.07	1.84	0.35	0.37	0.18	8.94
1992	0.00	0.00	0.11	0.68	1.36	2.64	0.91	0.44	0.09	0.28	0.22	0.43	7.16
1993	0.34	0.12	0.05	1.12	1.13	0.78	2.37	0.33	0.03	1.38	0.10	0.00	7.75
1994	0.13	0.20	0.50	0.19	0.59	0.21	0.42	0.05	0.92	1.75	0.05	0.00	5.01
1995	0.06	0.00	1.14	0.84	1.33	0.60	1.47	0.07	1.23	0.27	0.16	0.15	7.32
1996	0.57	0.56	0.38	0.56	1.33	0.28	0.00	0.07	1.15	0.00	0.24	0.53	5.67
1997	0.00 z	0.00 z	0.00 z	0.40	0.76	2.64	1.90	0.22 a	0.02	1.78	0.12	0.00 z	7.84
1998	0.70 b	0.10	0.00 z	0.18	0.32	1.47	1.03	1.68	0.70	1.13	0.42	0.21	7.94
1999	0.08 a	0.12	0.00	0.87	0.82	0.73	0.01	0.12	0.45	0.29	0.09	0.50	4.08
2000	0.33	0.25	0.24	0.60	1.29	0.33	0.41	0.08	0.32	0.57	0.11	0.41	4.94
2001	0.04	0.16	0.06	0.68	0.24	2.31	0.00	0.06	1.18	0.41	0.28	0.32	5.74
2002	0.18	0.05	0.31	1.33	0.57	0.72	0.25	0.01	0.29	0.44	0.66	0.05	4.86
2003	0.29	0.35	0.42	0.44	0.65	0.81	0.06	0.06	0.06	0.34	0.07	0.25	3.80
2004	0.09	0.11	0.02	0.26	0.26	0.54	1.74	0.16	0.65	0.51	0.00	0.16	4.50
2005	0.14	0.17	0.43	2.73	2.33	0.75	0.14	0.46	0.51	0.62	0.23	0.07	8.58
2006	0.01	0.01	0.57	0.18	0.92	0.25 a	0.11	0.02	0.42 a	1.13	0.03	0.16	3.81

Period of Record Statistics

MEAN	0.22	0.16	0.30	0.64	1.14	1.17	0.64	0.54	0.69	0.54	0.24	0.21	6.43
S.D.	0.19	0.17	0.27	0.52	0.71	0.85	0.62	0.54	0.62	0.46	0.18	0.20	1.58
SKEW	1.12	1.83	1.35	1.53	1.02	1.14	1.13	1.16	1.34	0.97	1.17	0.95	-0.12
MAX	0.76	0.87	1.14	2.73	3.60	3.97	2.37	2.08	2.56	1.78	0.88	0.76	10.02
MIN	0.00	0.00	0.00	0.00	0.03	0.05	0.00	0.00	0.00	0.00	0.00	0.00	3.00
NO YRS	57	57	55	58	58	58	56	58	58	58	58	57	50

BRIDGER, MONTANA

Monthly Total Precipitation (inches)

(241102)

File last updated on Apr 12, 2007
*** Note *** Provisional Data *** After Year/Month 200612
a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,
z = 26 or more days missing, A = Accumulations present
Long-term means based on columns; thus, the monthly row may not
sum (or average) to the long-term annual value.
MAXIMUM ALLOWABLE NUMBER OF MISSING DAYS : 5
Individual Months not used for annual or monthly statistics if more than 5 days are missing.
Individual Years not used for annual statistics if any month in that year has more than 5 days missing.

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1900	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.05d	0.00z	0.00z	0.00z	0.05
1901	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1902	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1903	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1904	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1905	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1906	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1907	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1908	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.02	0.55a	0.57
1909	0.14a	0.03	0.75a	0.91a	1.65b	1.33	1.34	0.43a	1.28i	0.52f	0.24	0.63	7.45
1910	0.25a	0.05a	0.11c	0.60b	2.21b	0.00w	0.23	0.27c	2.20a	2.02a	0.33	0.09a	8.36
1911	0.46c	0.01a	0.00a	1.43	1.81a	1.51a	1.27	0.71a	0.39a	0.27	0.37a	0.04b	8.27
1912	0.78	0.32v	0.04a	0.35c	0.81	0.86	0.86b	3.47	2.60	2.20a	0.03c	0.00a	12.00
1913	0.29b	0.00	0.11c	0.02c	0.76a	2.23	0.77	0.60b	0.79	1.41	0.15c	0.06a	7.19
1914	0.00	0.00	0.16	1.36b	2.13a	2.71	0.15	0.08b	0.97	0.69	0.00b	0.46	8.71
1915	0.45	0.00a	0.19d	0.58	2.66a	4.24	0.51g	1.02	3.31	0.23a	0.20b	0.74	13.62
1916	0.72	0.48a	0.32c	0.00z	0.00z	2.00w	0.18	1.02	0.50	2.14	0.54	0.59a	6.49

1917	0.18 a	0.22 a	0.92	1.23	3.06	0.97 a	0.00	0.11	2.10	1.31	0.27	0.69	11.06
1918	0.00 z	0.50 b	0.93	1.54	1.58	0.22 j	1.34 e	0.44	3.04	0.69 z	0.14	0.02	9.53
1919	0.00	0.30	0.00	0.09	0.59	0.40	0.30	1.24	0.90	2.94	1.16	0.27 a	8.19
1920	0.62	0.88	0.24 f	1.55	2.51	0.86 a	0.84	0.31	0.37	0.47	0.00	0.37	8.78
1921	0.03 f	0.16	0.39	0.30	2.33	1.67	0.80 b	0.30	0.27	0.00	0.50	0.29 a	7.01
1922	0.17	0.24	0.60	2.58	2.40	1.86	0.38	0.88	0.00	1.60 a	0.95	0.16 a	11.82
1923	0.03	0.35	0.50	1.05	0.00 z	0.98 a	0.47 a	0.65	5.04	0.42	0.12	0.56	10.17
1924	0.18 b	0.26	1.57	0.67	0.63	0.69	1.27 a	0.00 z	0.70	1.96	1.12	0.00 z	9.05
1925	0.03	0.07	0.46 b	4.47	1.20	0.86	1.20 b	0.00 b	1.05 a	2.11	0.28	0.61	12.34
1926	0.28 a	0.20	0.30	0.56 a	1.96 a	0.83	2.89 a	1.37	3.80	0.34	0.94	0.14	13.61
1927	0.19	0.02	0.25	2.00	3.57 a	1.31 a	0.31	2.39	1.03	0.04 a	1.40	0.30	12.81
1928	0.74	0.34	0.35 n	0.45	1.10	2.74	2.08	0.58	0.00	1.31	0.00 z	0.19 a	9.53
1929	0.70	0.00 z	0.65	0.77	1.52 a	0.97	1.22	0.50	0.21	1.28	1.15	0.76	9.73
1930	0.25	0.31	0.56	0.13	0.00	0.80	0.56 a	0.00 z	0.00 z	0.00 n	0.74	0.00	3.35
1931	0.21	0.27	0.49	0.77	1.22	0.72	1.20	0.15	2.00	0.60	0.57 c	0.10	8.30
1932	0.28	0.48	1.40	1.10	1.65	3.50	0.75 a	0.25	0.00	1.15 a	0.40	0.79	11.75
1933	0.49	0.90	0.80	1.52	0.90	0.18	0.00	1.35	0.40	1.75	0.45	0.75	9.49
1934	0.00	0.30	1.82	0.25	0.60 a	1.60	1.12 c	0.49 b	0.16 g	0.37	0.00 a	0.38 a	6.93
1935	0.04	0.09	0.89 c	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	1.02
1936	0.10 j	0.65	0.18 c	0.20 f	0.60 b	2.45 b	1.00 b	0.84 g	1.65 b	1.29	0.30	0.11	8.23
1937	0.00 n	0.30 a	0.65	0.55	1.45	2.56	0.16	0.03	0.56	1.46	0.48	0.30	8.50
1938	0.00	0.16	1.01 a	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	1.17
1939	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 n	0.27 a	0.27
1940	0.41 a	0.16 a	0.54 a	1.76	0.56	2.35	1.54	0.07 a	1.41	1.09	0.12 a	0.01	10.02
1941	0.00	0.16	0.28	2.07	1.49 c	1.33	0.98 a	2.10	4.42	0.85	0.55	0.50	14.73
1942	0.67	0.45	0.40	0.84 a	4.40	0.80 a	0.35	0.39	1.70	2.13	1.21	0.31	13.65
1943	0.55	0.14	0.31	0.18	1.39	2.75	0.24 a	0.80	0.56	0.70	0.43	0.09	8.14
1944	0.44	0.31	0.26	0.13	2.21	6.70	1.18	0.16	2.61	0.18	0.23	0.30	14.71
1945	0.27	0.08	1.29	0.59 a	1.95	3.51	0.83	1.11	1.09	0.22	0.52	0.56	12.02
1946	0.33	0.18	1.28	0.18	1.57	1.60	0.29	0.36	1.09	2.03 a	0.21	0.43	9.55
1947	0.04	0.51	0.41	0.61	1.07	1.47	0.69	0.44	1.43	0.91	1.60	0.58	9.76
1948	0.78	0.22	0.35	0.99	1.72 d	2.70	1.42	0.37	0.92	0.02	0.38	0.30	10.17
1949	1.12	0.06	0.39	0.35	1.12	0.57	0.40	0.04	1.04	2.16	0.05	0.23	7.53
1950	0.37	0.07	0.50	1.20	1.01	1.95	1.60	1.13	1.05	0.19	0.70	0.25	10.02
1951	0.31	0.30	0.38	1.19	0.98	1.64	1.11	0.51	1.26	0.82	0.32	0.57	9.39
1952	0.07	0.63	0.94	0.85	1.72	2.04	1.37	0.30	0.19	0.14	0.64	0.05	8.94
1953	0.16	0.43	0.81	0.94	2.60	1.13	0.17 a	0.92	0.76	1.32	0.39	0.57	10.20
1954	0.20	0.08	1.94	0.40	1.87	1.18	0.67	1.05	0.19 a	0.76	0.00	0.16	8.50
1955	0.21	0.88	0.92	1.31	2.07	1.49	0.23	0.03	0.39	0.84	0.64	1.00	10.01
1956	0.23	0.27	0.86	2.11	1.02	0.34	0.64	0.83	0.53	0.12	1.01	0.21	8.17

1957	0.43	0.40	0.46	2.63	2.99	3.03	0.46	0.68	1.67	1.84	1.23	0.03	15.85
1958	0.37	0.43	0.69	2.81	0.19	2.42	1.81	0.37	0.16	0.20	0.66	0.34	10.45
1959	0.29	0.41	0.23	1.39	0.81	0.52	0.18	0.49	0.64	0.40	1.28	0.24	6.88
1960	0.32	0.38	0.14	0.92	0.23	0.46	0.10	2.22	0.20	1.34	0.29	0.17	6.77
1961	0.09	0.17	0.14	1.79	2.46	0.20	0.12	1.22	4.22	1.76	0.49	0.13	12.79
1962	1.23	0.67	0.61	0.26	2.65	2.43	0.45	1.43	1.35	0.14	0.78	0.13	12.13
1963	1.20	0.07	0.23	3.11	1.83	2.07	1.00	0.01	1.90	0.21	0.05	0.86	12.54
1964	0.41	0.61	1.01	3.98	2.59	5.47	0.00	0.70	0.14	0.47	0.35	0.78	16.51
1965	0.88	0.52	0.78	2.68	2.53	1.80	0.67	2.31	2.19	0.34	0.16	0.48	15.34
1966	0.36	0.17	1.09	1.70	1.36	1.32	0.16	0.94	1.18	0.77	0.50	0.33	9.88
1967	0.41	0.47	0.28	2.03	0.61	3.63	0.50	0.05	0.58	0.97	1.06	1.49	12.08
1968	1.16	0.20	0.96	0.74	1.49	3.53	0.05	2.37	1.74	0.33	0.56	0.82	13.95
1969	1.10	0.13	0.36	0.91	1.29	5.19	0.61	0.26	0.49	1.05	0.91	0.22	12.52
1970	0.67	0.17	2.15	2.71	3.03	1.74	0.21	0.02	1.73	0.43	0.61	0.25	13.72
1971	1.19	1.60	1.35	1.52	2.44	0.65	0.35	0.32	2.43	3.53	0.53	0.82	16.73
1972	2.42	0.41	0.49	0.75	2.08	3.45	1.26	1.94	1.00	1.86	0.75	0.89	17.30
1973	0.52	0.05	2.86	3.57	0.66	0.33	0.14	0.24	3.68	1.28	0.00 z	0.72	14.05
1974	0.30	0.25	0.78	2.05	2.32	3.05	1.51	1.29	1.75	2.65	0.33	0.27	16.55
1975	1.99	0.28	1.18	2.00	5.11	1.73	0.00 z	0.10	0.27	2.41	2.17	0.87	18.11
1976	0.81	1.01	0.62	3.62	0.70	2.37	0.24	1.09	1.26	0.82	0.39	0.22	13.15
1977	0.91	0.06	2.09	0.29	1.54	0.28	0.12	1.24	0.07	0.63	0.86	1.01	9.10
1978	1.42	1.24	0.16	2.22	6.08	0.62	0.46	0.31	4.74	0.09	1.70	1.21	20.25
1979	0.71	0.28	0.37	0.78	0.94	1.45	0.16	1.19	0.00	0.00 z	0.71	0.48	7.07
1980	1.45	0.69	3.16	0.47	2.94	1.37	0.60	1.23	1.31	1.75	0.47	0.12	15.56
1981	0.27	0.65	0.83	0.30	5.08	0.30	0.31	0.52	0.16	2.02	0.13	0.49	11.06
1982	0.60	0.67	1.35	1.19	2.85	4.51	0.77	0.78	2.36	0.50	0.71	1.20	17.49
1983	0.20	0.34	1.41	0.97	3.44	1.02	0.86	0.43	1.49	1.24	0.69	0.75	12.84
1984	0.86	0.81	0.56	3.33	1.04	0.61	0.33	1.02	0.99	0.35	0.45	0.53	10.88
1985	0.40	0.75	1.02	0.39	1.06	1.12	1.14	1.48	2.52	0.73	1.05	0.27	11.93
1986	0.35	1.11	0.94	2.52	2.33	1.80	0.58	0.12 a	1.22	0.65	1.84	0.03	13.49
1987	0.31	0.78	1.41	0.30	3.27	0.86	3.16	1.18	0.58	0.03	0.08	0.26	12.22
1988	0.18	1.33	0.40	1.48	5.14 c	1.35	0.18	0.04	1.10	0.80	0.51	0.64	13.15
1989	0.88	0.43	1.41	1.46	1.60	0.88	1.39	0.78	0.41	2.24	0.32	1.47	13.27
1990	0.57	0.36	1.68	2.10	2.16	0.36	0.75	0.32	0.12	1.27	0.68	0.69	11.06
1991	0.85	0.67	0.55	3.98	2.37	2.29	0.27	0.16	2.12	1.14	1.29	0.33	16.02
1992	0.19	0.00	0.75	1.32	2.15	4.54	0.52 a	0.43	0.29	0.54	0.25	0.69	11.67
1993	0.65	0.20	0.56	2.93	0.75	1.74	2.61	1.06	0.77	1.74 a	0.27 g	0.03 l	13.01
1994	0.05 k	0.61 d	0.42 b	1.64 b	1.71 b	1.21 a	0.00 z	0.00 z	1.21 o	0.00 z	0.00 z	0.00 z	5.59
1995	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00
1996	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00

1997	0.00 z	0.00 z	0.00 z	3.45	3.22	3.13	1.53	1.86	0.49	0.73 a	0.13	0.00 a	14.54
1998	0.48	0.05	0.61	0.59	0.85	3.02	1.24	1.27	0.56	0.93	0.93	0.32	10.85
1999	0.50 c	0.15 a	0.10 d	1.12 a	0.80 b	0.00 z	0.36	0.00 z	0.00 z	0.00 z	0.22	0.03 b	3.28
2000	0.63	0.59	0.50	1.01	2.00	1.45	0.41	0.15	0.00 z	1.22	0.00 c	0.54 a	8.50
2001	0.00 c	0.36	0.17	0.61	0.84	3.95	1.73	0.09	1.06	0.44	0.25 c	0.39	9.89
2002	0.00 d	0.00 b	0.12 c	1.86 c	1.57	1.44	0.58	0.29	0.88	0.45	0.22	0.00	7.41
2003	0.39 a	0.00 z	0.62	0.30 b	2.54	1.38	0.14	0.00 b	0.21	1.52	0.33	0.43 b	7.86
2004	0.06	0.26	0.07 f	0.45	2.66 a	1.52	1.01	0.90	0.86	1.78	0.07 a	0.00 z	9.57
2005	0.47 b	0.15 a	0.49	2.52	2.32	1.98	1.01	0.92	0.78	1.77	0.83 a	0.17 a	13.41
2006	0.00 a	0.17	0.94 b	0.98	0.72	0.47	0.02 a	0.13	3.16	2.75	0.63	0.65 c	10.62
2007	0.00 p	0.00 r	1.04 r	0.17 x	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00

Period of Record Statistics

MEAN	0.48	0.37	0.74	1.37	1.88	1.82	0.76	0.74	1.27	1.08	0.56	0.43	11.74
S.D.	0.44	0.32	0.59	1.04	1.15	1.29	0.64	0.67	1.15	0.79	0.45	0.33	2.94
SKEW	1.73	1.39	1.64	0.99	1.22	1.29	1.37	1.41	1.38	0.68	1.16	0.95	0.48
MAX	2.42	1.60	3.16	4.47	6.08	6.70	3.16	3.47	5.04	3.53	2.17	1.49	20.25
MIN	0.00	0.00	0.00	0.02	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	6.77
NO YRS	89	91	91	91	91	89	90	88	88	87	90	91	67

PRYOR, MONTANA

Monthly Total Precipitation (inches)

(246747)

File last updated on Apr 12, 2007
*** Note *** Provisional Data *** After Year/Month 200612
a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,
z = 26 or more days missing, A = Accumulations present
Long-term means based on columns; thus, the monthly row may not
sum (or average) to the long-term annual value.
MAXIMUM ALLOWABLE NUMBER OF MISSING DAYS : 5
Individual Months not used for annual or monthly statistics if more than 5 days are missing.
Individual Years not used for annual statistics if any month in that year has more than 5 days missing.

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1950	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	1.14 l	0.99	0.73	1.77	0.37	0.88	0.60	5.34
1951	0.51	0.05	0.96	1.20	0.74	2.30	1.15	2.52	1.45	1.71	0.23	0.55	13.37
1952	0.40	0.44	0.59	0.69	3.28	1.56	1.47	1.26	0.22	0.39	0.59	0.09	10.98
1953	0.53	0.82	0.73	1.15 a	2.53	3.03	0.45	0.62	0.96	2.06	0.48	0.30	13.66

1954	0.24	0.14	2.05	0.68 a	3.17	2.17	0.43	0.10	0.54	1.02	0.03	0.32	10.89
1955	0.30	1.34	0.81	4.38	4.42	2.02	0.19	0.33	0.38	1.31	0.66	0.76	16.90
1956	0.30	0.82	0.72	1.47	1.76	0.49	1.39	2.68	0.37	0.66	1.17	0.25	12.08
1957	0.46	0.26	0.63	5.54	4.60	3.60	0.39	1.31	1.50	2.02	1.69	0.00	22.00
1958	0.31	0.56	0.37	3.15	0.65	2.84	1.19	0.35	0.34	0.90	0.96	0.49	12.11
1959	0.70	0.33	0.19	1.27	1.92	0.89	0.36	0.64	1.35	0.80	2.23	0.51	11.19
1960	0.40	0.87	0.42	0.82	0.48	0.89	0.15	1.92	0.16	1.35	0.39	0.33	8.18
1961	0.08	0.65	0.28	2.63	2.83	0.35	0.30	0.27	4.61	1.93	0.87	0.22	15.02
1962	1.26	0.53	0.94	0.17	4.64	3.86	2.20	1.36	1.20	0.59	0.68	0.01	17.44
1963	1.82	0.29	0.55	4.56	2.57	3.38	1.15	0.35	0.87	0.37	0.05	1.57	17.53
1964	0.43	0.66	1.13	6.88	3.73	4.07	0.00	4.12	0.27	0.46	0.96	1.15	23.86
1965	1.05	0.77	0.95	1.48	3.37	1.56	0.97	2.19	3.17	0.19	0.37	0.55	16.62
1966	0.46	0.24	1.10	2.30	1.30	0.69	0.20	1.38	1.72	0.82	0.56	0.62	11.39
1967	0.48	0.74	0.87	2.51	1.41	5.59	0.41	0.47	1.90	1.38	0.74	1.48	17.98
1968	1.17	0.50	1.52	0.92	1.74	5.62	0.39	3.00	1.62	0.16	1.13	0.78	18.55
1969	1.43	0.17	0.47	1.69	0.99	6.62	1.26	0.61	0.35	1.17	0.98	0.35	16.09
1970	0.61	0.59	1.87	2.47	4.42	2.28	0.48	0.00	1.74	0.95	0.84	0.48	16.73
1971	0.61	1.37	0.77	2.20	2.13	0.35	0.00	0.52	3.06	4.33	0.58	0.36	16.28
1972	1.52	0.55	0.39	1.43	2.56	2.22	1.54	2.43	0.70	2.16	0.60	0.79	16.89
1973	0.57	0.40	2.53	4.20	1.11	1.55	0.51	0.61	3.81	1.15	0.83	1.23	18.50
1974	0.25	0.51	1.13	2.50	5.17	2.71	2.07	1.87	1.33	4.31	0.74	0.38	22.97
1975	1.47	0.19	1.37	2.50	4.92	1.79	2.94	0.20	0.17	2.56	1.95	1.33	21.39
1976	0.95	0.82	0.43	3.11	0.79	4.86	0.18	2.09	1.72	1.46	0.41	0.09	16.91
1977	1.18	0.22	1.57	0.51	3.58	1.49	0.48	1.58	0.95	1.20	0.74	1.18	14.68
1978	0.92	1.12	0.29	3.67	8.46	1.13	1.27	0.70	6.85	0.12	1.87	1.38	27.78
1979	0.36	0.31	0.43	1.22	1.91	1.09	2.02	0.35	0.08	1.68	1.01	0.35	10.81
1980	1.35	1.07	2.25	0.98	2.55	2.18	0.40	1.05	1.85	2.12	0.42	0.69	16.91
1981	0.26	0.27	1.49	0.39	9.24	1.90	1.10	0.15	0.29	2.56	0.69	0.52	18.86
1982	0.43	0.41	1.48	0.95	2.67	5.31	2.12	1.24	3.23	1.01	0.44	0.00 z	19.29
1983	0.00 x	0.31	0.64	0.57	4.13	1.24	1.32	0.49	2.18	0.00 z	0.00 z	0.00 z	10.88
1984	0.00 z	1.15	1.21	2.31	2.18	0.81	1.16	2.38	1.02	0.49	1.10	0.43	14.24
1985	0.56	0.99	1.50	0.56	1.61	1.84	0.99	2.15	2.11	0.00 z	0.89	0.04	13.24
1986	0.51	1.69	1.32	2.51	1.98	2.22	1.08	1.10	1.68	1.54	2.03	0.04	17.70
1987	0.56	0.34	1.41	0.60	7.10	2.39	4.92	2.09	0.48	0.04	0.19	0.40	20.52
1988	0.28	1.06	0.75	0.91	5.61	0.58	0.26	0.04	1.70	0.92	0.96	0.64	13.71
1989	0.86	0.27	1.60	2.07	2.44	0.96	2.11	0.66	0.65	2.02	0.44	1.22	15.30
1990	0.26	0.67	1.28	2.59	2.04	0.50	0.29	0.69	0.46	1.64	0.58	0.28	11.28
1991	0.69	0.33	0.81	2.71	2.00	3.22	0.13	0.24	3.52	1.35	1.26	0.40	16.66
1992	0.24	0.09	1.55	1.99	1.73	7.08	1.88	0.65 a	0.48	0.76 f	0.32	0.46	16.47
1993	1.10	0.42 r	1.26	2.56 a	1.49 b	2.32	4.52 a	1.45	0.67	2.72	1.29	0.16	19.54

1994	0.40	0.74	1.27	3.18	1.45	0.34	2.96	0.23	1.25	2.96	0.00 z	0.03	14.81
1995	0.87	0.25	1.84	2.62	3.54	2.68	1.69	0.91 a	1.78	1.46 a	0.47	0.04	18.15
1996	0.66	0.75	1.98	1.29	3.86	0.36	0.00	0.18	1.84	2.04 a	1.05	1.05	15.06
1997	0.00 z	0.03	1.03 b	0.00 z	2.82	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	3.88
1998	0.00 z	0.00 z	1.56 g	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	2.72	0.96 l	0.50	3.22
1999	0.25	0.21	0.41	0.00 z	2.20	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	0.00 z	3.07
2000	0.00 z	0.00 z	1.65	0.00 z	3.28	1.56	0.34	0.01	0.74	1.23	1.10 b	0.00 a	9.91
2001	0.11	1.74 c	0.00 z	0.18	0.63	3.08	0.23	0.07	1.32	0.37	0.38	0.38	8.49
2002	0.39 c	0.31	0.42	0.91 b	0.00 z	0.00 z	0.00 z	0.00 z	1.14	0.91	0.96	0.04 a	5.08
2003	0.38	1.26	0.70	0.00 d	0.00 z	3.33	0.30	0.00	0.14 b	1.39	0.10	0.86	8.46
2004	0.81	1.56	0.22	0.55	1.76	1.90	1.20	0.42	1.19	1.87	0.13	0.10	11.71
2005	0.62	0.26	1.10	4.99 a	3.24	2.50	1.37	0.92	0.73	1.88	1.19	0.20	19.00
2006	0.20	0.17	2.06	0.60 c	2.13	0.29	0.30	0.55	3.55	2.83 b	1.01	0.91	14.60

Period of Record Statistics

MEAN	0.64	0.61	1.06	1.99	2.88	2.30	1.08	1.02	1.47	1.45	0.81	0.53	16.15
S.D.	0.41	0.43	0.58	1.49	1.84	1.65	1.05	0.92	1.29	0.96	0.50	0.42	4.02
SKEW	1.03	0.92	0.47	1.13	1.48	1.09	1.75	1.15	1.84	0.96	0.89	0.82	0.50
MAX	1.82	1.74	2.53	6.88	9.24	7.08	4.92	4.12	6.85	4.33	2.23	1.57	27.78
MIN	0.08	0.03	0.19	0.00	0.48	0.29	0.00	0.00	0.08	0.04	0.03	0.00	8.18
NO YRS	51	53	54	52	53	52	53	53	54	52	52	53	42

APPENDIX VII

CARRYING CAPACITY CALCULATION WITH MEASURED UTILIZATION

1995:
Actual use 146 wild horses (45% desired utilization)/81% measured utilization = 81 wild horses

1996:
Actual use 175 wild horses (45% desired utilization)/89% measured utilization = 88 wild horses

1997:
Actual use 147 wild horses (45% desired utilization)/66% measured utilization = 100 wild horses

1998:
Actual use 158 wild horses (45% desired utilization)/82% measured utilization = 87 wild horses

1999:
Actual use 173 wild horses (45% desired utilization)/81% measured utilization = 96 wild horses

2000:
Actual use 188 wild horses (45% desired utilization)/89% measured utilization = 95 wild horses

2001:
Actual use 160 wild horses (45% desired utilization)/53% measured utilization = 134 wild horses

2002:
Actual use 170 wild horses (45% desired utilization)/86% measured utilization = 86 wild horses

2003:
Actual use 161 wild horses (45% desired utilization)/89% measured utilization = 81 wild horses

2004:
Actual use 142 wild horses (45% desired utilization)/90% measured utilization = 71 wild horses

2005:
Actual use 160 wild horses (45% desired utilization)/85% measured utilization = 84 wild horses

2006:
Actual use 145 wild horses (45% desired utilization)/66% measured utilization = 99wild horses

Total:81+88+100+87+96+95+134+86+81+71+84+99/12 years= 92wild horses

APPENDIX VIII

CARRYING CAPACITY CALCULATION WITH ADJUSTED UTILIZATION

The calculations are for adjusted utilization is based upon the following formula:

Crop yield (CY) precipitation measured from October to September of each year Divided by the 30 year average crop year (ACY) which is 6.79 inches for Lovell Wyoming this equals the precipitation index (PI) that is then multiplied by the constant regression equation of (1.23)-.23 which equals the Yield Index (YI) this is multiplied by the measured utilization (MU) which equals adjusted utilization (AJU). Adjusted utilization is then used in the carrying capacity formula.

Example CY/ACY=PI(1.23)-.23=YI(MU)=AU

Then: actual use(desired utilization)/adjusted utilization=Proper Carrying Capacity.

1995: CY=6.67 / ACY 6.79 = PI 0.98 (1.23)-.23=YI 97.5%(MU 81%)=79%AJU
actual use 146 wild horses (45% desired utilization)/79% adjusted utilization = 83 wild horses

1996: CY=5.48 / ACY 6.79 = PI 0.80 (1.23)-.23=YI 75%(MU 89%)=67%AJU
actual use 175 wild horses (45% desired utilization)/67% adjusted utilization = 117 wild horses

1997: CY=6.71 / ACY 6.79 = PI 0.99 (1.23)-.23=YI 99%(MU 66%)=65%AJU
actual use 147 wild horses (45% desired utilization)/65% adjusted utilization = 102 wild horses

1998: CY=8.08 / ACY 6.79 = PI 1.19 (1.23)-.23=YI 123%(MU 82%)=*100%AJU
actual use 158 wild horses (45% desired utilization)/100% adjusted utilization = 71 wild horses

1999: CY=4.96 / ACY 6.79 = PI 0.73 (1.23)-.23=YI 68%(MU 81%)=55%AJU
actual use 173 wild horses (45% desired utilization)/55% adjusted utilization = 142 wild horses

2000: CY=4.73 / ACY 6.79 = PI 0.70 (1.23)-.23=YI 63%(MU 89%)=56%AJU
actual use 188 wild horses (45% desired utilization)/56% adjusted utilization = 151 wild horses

2001: CY=5.82 / ACY 6.79 = PI 0.86 (1.23)-.23=YI 83%(MU 84%)=70%AJU
actual use 160 wild horses (45% desired utilization)/70% adjusted utilization = 103 wild horses

2002: CY=4.72 / ACY 6.79 = PI 0.70 (1.23)-.23=YI 63%(MU 86%)=54%AJU
actual use 170 wild horses (45% desired utilization)/54% adjusted utilization = 142 wild horses

2003: CY=4.29 / ACY 6.79 = PI 0.63 (1.23)-.23=YI 54%(MU 89%)=48%AJU
actual use 161 wild horses (45% desired utilization)/48% adjusted utilization = 151 wild horses

2004: CY=4.49 / ACY 6.79 = PI 0.66 (1.23)-.23=YI 58%(MU 90%)=52%AJU

actual use 142 wild horses (45% desired utilization)/52% adjusted utilization = 123 wild horses

2005: CY=8.33 / ACY 6.79 = PI 1.22 (1.23)-.23=YI 127%(MU 85%)=*100%AJU
actual use 160 wild horses (45% desired utilization)/100% adjusted utilization = 72 wild horses

2006: CY=3.41 / ACY 6.79 = PI 0.50 (1.23)-.23=YI 39%(MU 66%)=26%AJU
actual use 145 wild horses (45% desired utilization)/26% adjusted utilization = 218 wild horses

Total: 83 +117+102+71+142+151+103+142+151+123+218/12 years=117 wild horses

*adjusted utilization cannot exceed 100%

APPENDIX IX

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APPENDIX X

LIST OF PREPARERS

Preparers BLM	Resource
Jared Bybee	Author/Wild Horses/Rangeland/Vegetation
Larry Padden	Rangeland/Vegetation
Jay Parks	Wildlife/Vegetation/Riparian
Lynn Anderson	Recreation/Wilderness
Bob Meidinger	Fuels/Vegetation/Forestry
Eric Chapman	Fuels/Vegetation
Don Galvin	Recreation
Melissa Half	Noxious and Invasive Plants
Carolyn Sherve-Bybee	Archeological Resources
Sheila Kane	Cartography

Preparers USFS	Resource
Kim Reid	Rangeland/Vegetation/Wild Horses
Terry Jones	Rangeland/ Vegetation

Preparers NPS	Resource
Cassity Bromley	Vegetation/Weeds/Wildlife/Wild horses

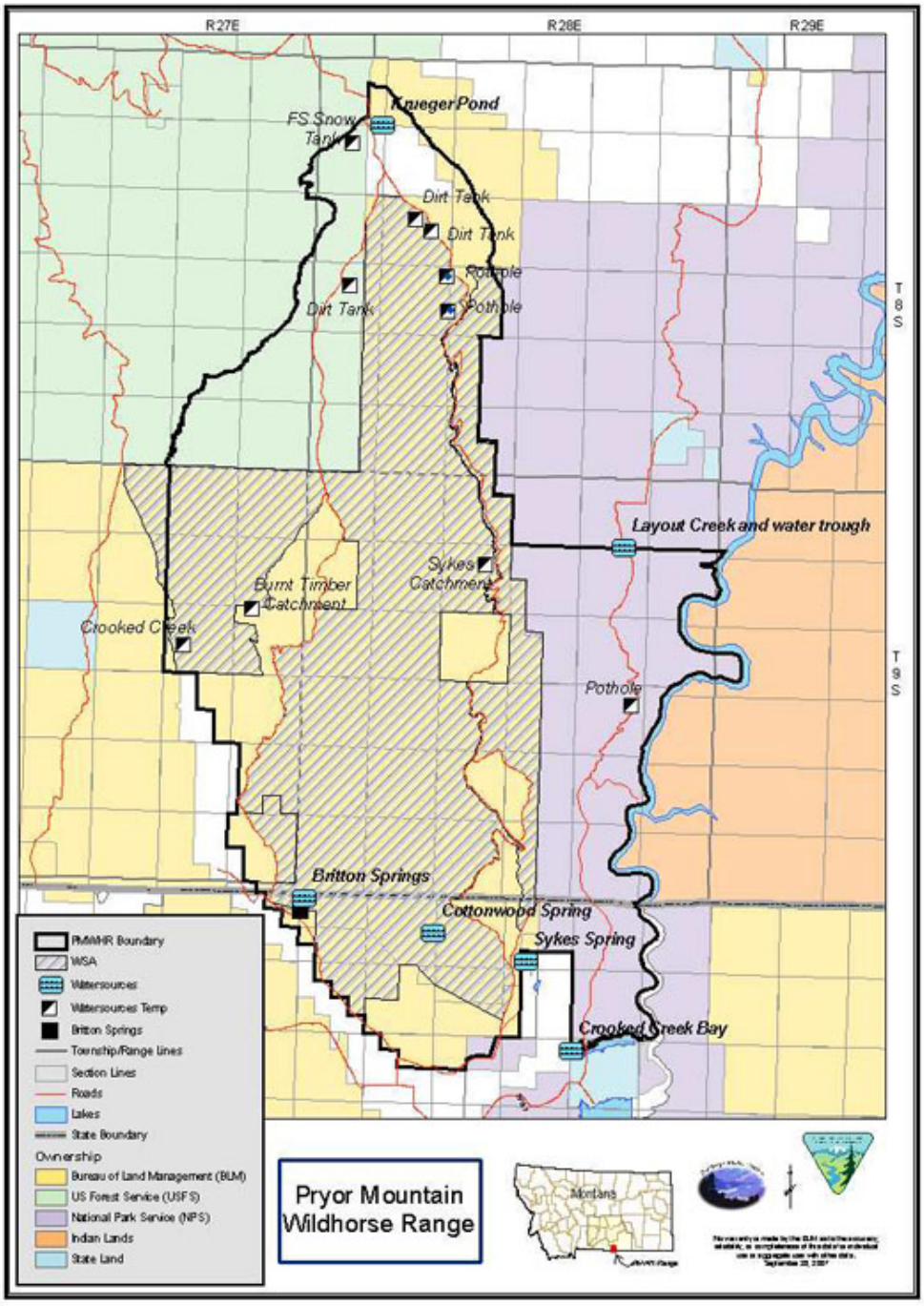
LIST OF REVIEWERS

Reviewers	Title
Billy McIlvain	NRS (State Rangeland Management Specialist)
Mike Philbin	State Hydrologist
Nora Taylor	Botanist
William Hensley	State Forester
John Simons	State Vegetation and Restoration Specialist
Gayle Sitter	State Wildlife Biologist
Katie Stevens	Planning and Environmental Coordinator
James Beaver	Land Use Specialist
David Jaynes	State Outdoor Recreation Planner

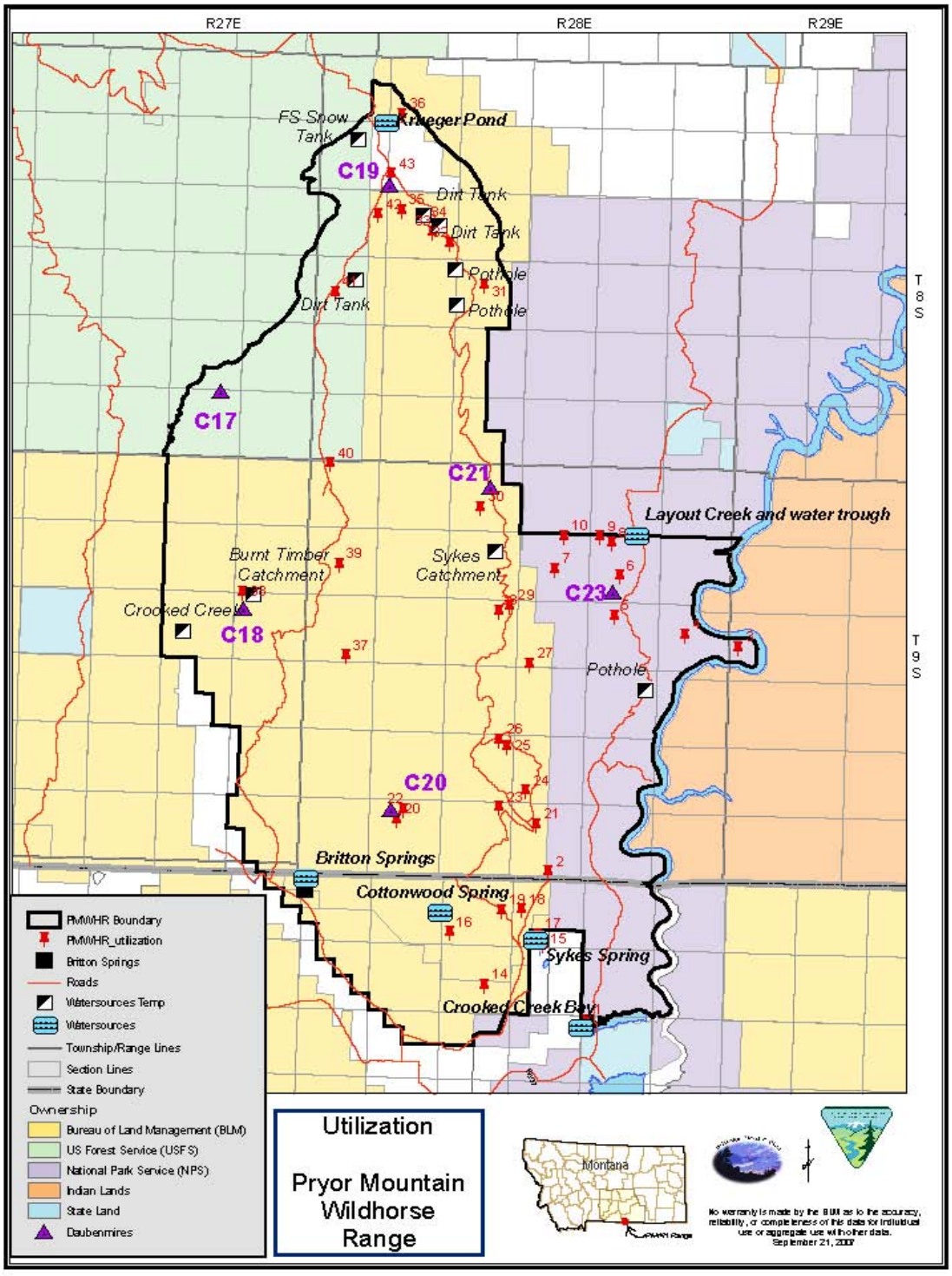
ADDITIONAL DATA, INFORMATION or ANALYSIS

Provider	Provided
Clayton McCracken	Gully Survey
Mattew Dillon	Wild Horse Demographics

MAP 1
Pryor Mountain Wild Horse Range Setting



MAP 2
Monitoring Sites Trend and Utilization



MAP 3
Use Pattern Map Summer 2007