

## **I. Purpose and Need**

The purpose of this environmental assessment (EA) is to assess the impacts associated with the Bureau of Land Management's (BLM) proposal to remove about 390 excess wild horses from the McCullough Peaks Herd Management Area (HMA) in October 2004 to restore the range to a thriving natural ecological balance and prevent further deterioration of the range. Also proposed is implementing fertility control treatment on a select portion of mares released back to the range following the gather.

### **A. Background Information**

The McCullough Peaks Herd Management Area (HMA) is located 12 to 27 miles east of Cody, within Park County, Wyoming. The HMA encompasses 109,814 acres of land. Refer to Figure 1 (General Location Map) and Figure 2 (Grazing Allotments in the HMA).

The McCullough Peaks HMA was last gathered in 1999 to remove excess wild horses. At that time, it was estimated that 121 horses remained on the range (65 mares and 56 studs). The HMA was aerielly censused in 2000 with the population estimated at 165 head and again in 2001 with 236 counted. In 2003, 410 horses (82 foals and 328 adults) were individually identified. Based on population census, the average annual population increase for the McCullough Peaks HMA is approximately 32%. At the time of the gather, it is estimated that the wild horse population (including foals) will be approximately 490 horses.

### **B. Objectives**

The overall goals and objectives are:

- 1) reduce population size to level which would permit both a healthy and genetically viable herd, as well as, a thriving natural ecological balance to be maintained on the range.
- 2) conduct a safe and successful gather and removal effort while having minimal impact on the existing herd.
- 3) conduct a gather of approximately 490 wild horses, removing approximately 390 from the McCullough Peaks HMA and returning 100 to the HMA.
- 4) collect herd data pertaining to sex, age, color, blood samples for genetic and pregnancy analyses, herd health, and conducting fertility control research and monitor results as appropriate.
- 5) implement the use of a two-year fertility control treatment on a select portion of mares released back to the range . All animals selected for treatment would be at least one year old.
- 6) conduct safe and successful application of fertility control vaccine during the gather procedure (Appendix A).
- 7) support recommendations within the Wild Horse and Burro Strategic Research Plan and conduct monitoring under research protocol within the BLM National Wild Horse Fertility Control Field Trial program including impacts on herd foaling rates, foaling seasonality, herd genetic viability, and individual mare body condition, fitness and behavior.

### C. Need for Proposal

BLM has determined that the existing AML is appropriate and there are excess wild horses present. The Proposed Action is scheduled in October 2004 to remove about 390 horses to restore wild horse herd numbers to levels consistent with the Appropriate Management Level (AML) for the HMA. Applying fertility control measures as part of the proposed action would slow the reproduction rate of mares returned to the HMA following the gather, allowing vegetation resources time to recover; this would also reduce disturbance to the herd by decreasing the gather frequency and provide for a more stable wild horse age and social structure.

Fertility control provided during the gather is expected to impact the first year of pregnancies by 94%, second year by 82%, and the third year by 68%. The proposed management action and alternatives have also been evaluated (Appendix B) using WinEquus (Wild Horse Population Model Version 1.4; April 2, 2002) developed by Dr. Stephen Jenkins, Associate Professor, University of Nevada, Reno and available at <http://unr.edu/homepage/jenkins>.

Vegetation monitoring in relation to use by wild horses in the HMA has determined that current wild horse population levels are exceeding the ranges' capacity to sustain wild horse use over the long term. Resource damage is occurring and will continue to occur without immediate action. The proposed capture and removal is needed at this time in order to achieve a thriving natural ecological balance with wild horse populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with the overpopulation of wild horses as authorized under Section 3(b) (2) of the 1971 Free-Roaming Wild Horses and Burros Act and section 302(b) of the Federal Land Policy and Management Act of 1976.

By achieving and maintaining AML in the McCullough Peaks HMA, BLM meets its objectives in this HMA. A detailed list of objectives affecting the McCullough Peaks HMA can be found in Appendix C.

### D. Conformance with Existing Land Use Plans

The Proposed Action is in conformance with the 1990 Cody Resource Area Resource Management Plan (RMP) and Environmental Impact Statement (EIS). Applicable management actions intended to reduce the wild horse population to AML and maintain it at this level would be in conformance with the approved RMP as found on page 38:

- *“Management Objective - The wild horse management objective in the McCullough Peaks WHHMA is to maintain a viable herd that will maintain the free-roaming nature of wild horses in a thriving ecological balance and to provide opportunity for the public to view wild horses.”*
- *“Management Actions – The McCullough Peaks WHHMA will be managed to maintain a population of 100 wild horses until monitoring data shows that changes in the population level are necessary.”*

The Proposed Action has been determined to be in conformance with this plan as required by regulation (43 CFR 1610.5-3(a)). The McCullough Peaks HMA has been designated as suitable

for long term sustained wild horse use in the Cody RMP/EIS and the proposed capture and removal is consistent with the land use decisions and resource management goal and objectives of the land use plan. The “No Action” alternative would not be in conformance with the Cody RMP/EIS.

This EA is tiered to, and incorporates by reference, the Cody RMP and EIS. The RMP specifies general management direction for the Cody Field Office administrative area, including the management of wild horses. The EIS contains background information on the existing environment and resources found in the area, and the environmental consequences of various management actions.

The proposed action is in conformance with the Cody RMP as amended on 7/21/1999. Page 18, paragraph two, of the RMP amendment states: *“The livestock grazing management objective is to improve forage production and ecological range condition for the benefit of livestock use, wildlife, and watershed resources consistent with the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming.”*

The proposed action will assist in maintaining the health of the public lands within the HMA. The *“Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming”* is available at <http://www.wy.blm.gov/range/sandgs.htm>.

This EA is further tiered to, and incorporates by reference, the McCullough Peaks Herd Area Management Area Plan (1985), and the Evaluation and Update of the McCullough Peaks HMAP/Capture Plan (1991), EA No. WY-014-EA0-058. These documents contain specific management prescriptions for the HMA, as well as information on the existing environment and the environmental impacts of management actions. The proposed action is consistent with all other federal, state, and local plans. The McCullough Peak Wild Horse HMAP proposed the original Appropriate Management Level (AML) for the HMA of 100 head of wild horses with a minimum of 70 horses and maximum of 140 horses. The 1991 Evaluation and associated EA supported this AML based upon vegetation monitoring data. In 1992, this decision was appealed to the Interior Board of Land Appeals and was affirmed (122 IBLA 92-39). These documents were affirmed by the Interior Board of Land Appeals in *Animal Protection Institute of America et al.* (122 IBLA 290).

In 1985, the McCullough Peak Wild Horse Herd Area Management Plan (HAMP) proposed the original Appropriate Management Level (AML) for the HMA of 100 head of wild horses with a minimum of 70 horses and maximum of 140 horses. The 1991, the Evaluation and Update of the McCullough Peaks HAMP/Capture Plan and associated Environmental Analysis (refer to EA No. WY-014-EA0-058) supported this AML based upon vegetation monitoring data. In 1992, this decision was appealed to the Interior Board of Land Appeals and was affirmed (122 IBLA 92-39). These documents were affirmed by the Interior Board of Land Appeals in *Animal Protection Institute of America et al.* (122 IBLA 290). The AML was established based on in-depth analysis and monitoring data including: precipitation data, livestock grazing preference and actual use, wild horse herd inventory and actual use, utilization, and vegetative condition and trend. As discussed in (EA No. WY-014-EA0-058), the AML is the optimum number which can graze

without damage to the range. Monitoring conducted since then has not indicated a need to adjust the AML.

Finally, this EA incorporates by reference the McCullough Peaks Wild Horse Gather Environmental Assessment (1999), EA No. WY-020-EA9-123. This gather was conducted in the fall of 1999. The EA contains specific information on and analysis of the impacts of conducting a gather in the HMA.

These documents are available for public review at the Cody Field Office.

#### **E. Conformance with Rangeland Health Standards**

Standards and Guidelines (S & G) conformance reviews, completed in 1999 and 2001 on three of the allotments (approximately 1/3 of HMA), found that standards were not met for healthy rangelands. In the spring of 1999 and 2000, improved livestock grazing strategies with built in plant recovery time were implemented in these allotments. The remaining two allotments (approximately 2/3 of the HMA) are scheduled for S & G reviews in 2007 or later depending on climatic conditions. It is expected that standards will not be met for these allotments as well.

Conformance evaluations have been completed on the Red Point (#03067) allotment in 1998 and it failed the upland vegetative health Standard #3. In 2001, the Reclamation (#00666) and Reclamation 15 (#03088) allotments were completed and each failed Standards #1 (soil stability), #2 (riparian health), and #3 (upland vegetative health). Yearlong wild horse use was determined to be a contributing factor especially considering horse numbers in excess of AML. Allotment evaluations have been completed in 2000 & 2001 on the Reclamation allotments. Maintaining wild horse numbers at AML was a recommended management action in both documents.

These documents are available for public review at the Cody Field Office.

#### **F. Relationship to Statutes, Regulations, Policies, Plans, or Other Environmental Analyses**

Gathering excess wild horses is in compliance with Public Law 92-125, the Wild Free-Roaming Horse and Burro Act of 1971, as amended by Federal Land Policy and Management Act (FLPMA); and Public Law 95-514, the Public Rangelands Improvement Act of 1978 (PRIA). P.L. 92-125, as amended, requires the protection, management, and control of wild horses on public lands.

The proposed action is in conformance with all applicable regulations at 43 Code of Federal Regulations (CFR) 4700 and policies.

Map 1 – General Location Map

Map 2 – Grazing Allotments within the McCullough Peaks HMA

## **G. Scoping and Issues Identification**

Internal scoping for this EA was conducted in December 2002 and January 2003. A public meeting was held in Cody, WY to discuss the HMA and potential management actions on December 12, 2002. Eighteen people attended the meeting. Seventeen written comments were received, both at the meeting and by mail. The following issues and concerns have been identified:

- Range deterioration, caused by wild horse numbers in excess of the carrying capacity of the range, especially in times of extended drought.
- Concern for the well-being of the horses, and desire to see them managed in a wild and free-roaming state.
- Concern for the viability of the wild horse herd, including genetic diversity.
- Humane concerns regarding excess numbers of horses on deteriorating range, which could lead to starvation.
- Socioeconomic impacts resulting from non-use of authorized cattle grazing, both to the permittee and the local economy.

## **II. Alternatives Including the Proposed Action**

Five alternatives including the Proposed Action and the No Action Alternative are analyzed within this document and impacts identified. Although the No Action is not consistent with the 1971 Act, nor meets the purpose and need, it is analyzed to provide a basis for comparison with the action alternatives. Alternatives are described below.

### **Actions common to all alternatives except the No Action Alternative**

The proposed gather would begin after September 1, 2004. Regardless of which alternative is selected, the CYFO Wild Horse and Burro (WH&B) Specialist would determine sex, age and color, assess herd health (pregnancy/physical condition/etc), sort individuals as to age, size, sex, temperament and/or physical condition, and select animals to be returned the range. Data would be collected, including blood samples, for analysis and inclusion into future planning documents. Excess wild horses would be transported to a BLM adoption preparation/holding facility and/or sanctuary.

### **A. Selective Removal Criteria**

Determination of which horses would be returned to the range would be based on an analysis of existing population characteristics and HMA objectives. Wild horses would be selected and released back into the HMA, based on the historic characteristics (color pattern, sex ratio) of the McCullough Peaks HMA. Objectives for the herd were detailed previously under the Purpose and Need section. Wild horses selected for release back into the HMA would adhere to the National Selective Removal Policy to the extent possible, in accordance with the Gather Policy and Selective Removal Criteria for Wild Horses, Washington Office IM 2002-095.

It is anticipated that additional animals from the younger and/or older categories would need to be released to meet the objective of the proposed action or alternatives. Animals older than 9 years of age would be preferred for several reasons that include decreased adoption demand for older animals, and horses older than 9 years old are currently placed in long-term holding facilities. Exceptional animals that represent historic colors, size and/or conformation may be chosen for release outside of the selective removal priorities. Weak, unhealthy and unthrifty animals would not be selected for release back onto the HMA.

To enhance the selection process, more animals than required by the proposed action or alternatives would initially be separated for release, and then a final sorting completed to select the exact animals for release, based on traits and ages of all of the animals initially selected for release. Additionally, in the case that a certain number of wild horses evade gather, and have been confirmed by the CYFO WH&B Specialist, the total number of animals released may be reduced by this number.

## **B. Gather Operations**

The gather would be conducted through use of the National Wild Horse and Burro Gather Contract. Gather operations would be scheduled to start around October 1, 2004. Multiple gather sites (traps) may be used to gather wild horses from the HMA. To the maximum extent possible, gather sites would be located in previously disturbed areas. All gather and handling activities (including gather site selections) would be conducted in accordance with the Standard Operating Procedures (SOPs) described in Appendix D. The helicopter drive trap gather technique would be utilized for this gather. When animals are released, every effort would be made to release them back into the same general area from which they were gathered.

As needed, an APHIS veterinarian may be present and a licensed contract veterinarian will be on-call during gather operations to examine animals and make recommendations to the CYFO WH&B Specialist for care and treatment of the wild horses. Consultation with a veterinarian would take place prior to euthanasia in accordance with Washington Office Instruction Memorandum 2001-165.

## **C. Data Collection**

The following data would be collected during the gather, to facilitate the preparation of a Population Management Plan (PMP), as a component of the Herd Management Area Plan (HMAP) document:

### **1) Blood Samples**

Blood samples would be collected from release animals and analyzed to establish genetic baseline data (genetic diversity, historical origins of the herd, unique markers) for the HMA in accordance with the Gather Policy and Selective Removal Criteria for Wild Horses, Washington Office IM 2002-095. Blood

would be drawn from both mares and studs in a ratio similar to the sex ratio released.

## **2) Sex ratio/Age Structure**

The sex, age, and disposition (remove or release) for each animal gathered would be recorded. This data would be used to develop a pre-gather and release sex ratio/age structure summary for the HMA.

## **3) Reproduction and Survival**

Information on reproduction and survival would be collected to the extent possible, through documentation of the wild horses gathered, and the age of those released following the gather.

## **4) Characteristics**

Color and size of the animals would be recorded. The type of horse would be noted if it can be determined, or a general impression of the type of horses gathered within the HMA. Incidence of albinism, parrot mouth, club feet, severely crooked legs or any other negative trait believed to be genetic, would be recorded along with the disposition of that animal.

## **5) Condition Class**

Condition class would be recorded using the Henneke System for those animals that are exceptions to average, such as noticeably thin, or fat wild horses.

## **6) Other data**

Pregnancy status and genetic information must be collected from blood samples on treated and any untreated mares that are released back into the population at the time of the contraceptive treatment.

### **ALTERNATIVE I: PROPOSED ACTION**

#### **Removal to the Mid-Point (100 Animals) of the Management Range with Fertility Control**

The Proposed Action (Alternative I) is to gather approximately 490 wild horses, removing approximately 390 from the McCullough Peaks HMA and returning 100 to the HMA after the gather. Also proposed is determining sex, age and color, acquiring blood samples, assessing herd health, conducting immunocontraceptive research and monitoring results as appropriate. Determination of which horses would be returned to the range would be based the historic characteristics that are typical of the herd demographics and the objectives as stated under the Purpose and Need section.

A Wild Horse and Burro Strategic Research Plan has been prepared and attendant to this

document is a Fertility Control Field Trial Plan. These documents guide and direct fertility control applications in wild horses as well as other research activities. The fertility control vaccine, PZP (Porcine Zonae Pullicida) is available to BLM under a research protocol only and administered under a use permit (INAD) held by the Humane Society of the US (HSUS).

BLM applications of fertility control are divided into Individual-based and Population-based trials. These trials are designed to evaluate the 1 and 2 year vaccines. Individual-based trials involve intensive field monitoring efforts both pre and post treatment of mares.

A select number of mares are planned for treatment on to the McCullough Peaks HMA in Wyoming using the Individual-based criteria this calendar year. This treatment will utilize the 2-year time release PZP vaccine administered during a scheduled gather (Appendix A). This will result in a 4-5 year study on the McCullough Peaks HMA.

The following contraception parameters were utilized in the population model:

**Figure 3 Contraception Parameters**

<b>Age Class (Mares)</b>	<b>Percentages for Fertility Treatment</b>
1– 4 yrs	100%
5 – 9	75%
10+	100%

**Figure 4 Class Structure**

The following age class structure will try to be achieved:

<b>Age Class</b>	<b>Percent of Population</b>
<5yrs	25%
5 – 9	55%
10+	20%

Sex ratio of horses to be released would be approximately:

Male = 50%

Female = 50%

## **ALTERNATIVE II**

### **Removal to the Mid-Point (100 Animals) of the Management Range without Fertility Control**

Alternative II is to gather approximately 490 wild horses and remove approximately 390 wild horses from the McCullough Peaks HMA. Approximately 100 wild horses (50 mares and 50 studs) would be returned to the HMA, which represents a mid-point of the management range (AML). A fertility control research project would not be implemented.

## **ALTERNATIVE III**

### **Removal to the Lower Limit (70 Animals) of the Management Range with Fertility Control**

This alternative is the same as Alternative I except that 30 additional horses would be removed and only 70 horses would be returned to the HMA. Approximately 70 wild horses (35 mares and 35 studs) would be returned to the HMA, which represents the lower limit of the management range. There would also be 30 more horses in either long term holding facilities or in the adoption pipeline. Delivery of the immunocontraceptive vaccine would be as described under the Proposed Action.

## **ALTERNATIVE IV**

### **Removal to the Lower Limit (70 Animals) of the Management Range without Fertility Control**

Alternative IV is to gather approximately 490 wild horses and remove approximately 420 wild horses from the McCullough Peaks HMA. Approximately 70 wild horses (35 mares and 35 studs) would be returned to the HMA, which represents the lower limit of the management range. A fertility control research project would not be implemented.

## **ALTERNATIVE V**

### **No action**

This alternative identifies no direct (i.e. passive) management activities would be used to control the wild horse population in the McCullough Peaks HMA. The wild horse population would be allowed to reach equilibrium by regulating their numbers through periodic elevated mortality rates caused by drought, disease, and insufficient forage, water and/or space availability or a combination of these factors.

## **ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS**

### **Fertility Control Only**

An alternative calling for the implementation of an immunocontraception program without gathering and subsequent removal of excess animals will not be considered in detail in the EA. Treated mares must be positively recorded and marked, thus making it necessary to gather them. There are logistical reasons that remote vaccination (darting) of the horses is not practical in the McCullough Peaks HMA. The open nature of the terrain and inability to get near the animals

reduces the effective use of a dart gun. Also fertility control will not reduce herd size to help achieve the goal of establishing and maintaining a thriving natural ecological balance. For these reasons, a stand-alone gather for fertility control purposes will not be considered any further.

### **Alternative Gathering Methods**

Hay and water trapping methods require that these resources be scarce. In the McCullough Peaks HMA, adequate forage, except during severe winters with substantial snow cover, makes hay trapping impractical. When conditions might allow some limited success, drifting snow and road conditions limit access. Abundant water supplies and occasional rain showers make water trapping impractical. Also, rounding up wild horses with saddle horses alone has proven to be inefficient and impractical.

The helicopter/roping method of gathering entails moving wild horses to a roping site by helicopter and then capturing the horses by roping. While feasible, this technique has been used only in limited circumstances where a small number of wild horses were difficult to trap. It poses safety hazards to wild horses, personnel, and their saddle horses. For these reasons, the three alternative gathering methods were dropped from further consideration.

### **III. Affected Environment**

The following critical elements of the human environment and other potential concerns were considered but were determined not to be affected nor impacted by the Proposed Action or alternatives and will not be discussed further in this EA.

- ◆ Air Quality
- ◆ Areas of Critical Environmental Concern (ACEC)
- ◆ Water Quality or Sole Source Aquifers
- ◆ Environmental Justice
- ◆ Prime and Unique Farmlands
- ◆ Wild and Scenic Rivers
- ◆ Hazardous Wastes
- ◆ Social and Economic Resources

#### **A. Wild Horses**

##### **1) HMA Description**

The Cody Field Office area is located in northwestern Wyoming and contains the McCullough Peaks Wild Horse Herd Management Area, which is located 12 to 27 miles east of Cody (see Figure 1). The herd management area encompasses 109,814 acres of land (see Figure 2). Topography is highly variable, ranging from mostly flat to slightly rolling foothills carved by drainages, colorful badlands, and desert mountains featuring steep slopes, cliffs, and canyons. The HMA is bordered on the south by State Highway 14-16-20, on the east by State Highway 32, on the north by

Bureau of Reclamation lands, and on the west partially by allotment boundary fences and natural terrain features (division between the Deer Creek and Whistle Creek drainages)

## 2) Gather History and Population Characteristics

Since 1973, annual inventory aerial counts have been made (until recently due to budget cut/no funding). Gathers have occurred in 1983 (215 removed), 1987 (152 removed), 1992 (225 removed), 1995 (170 removed), and 1999 (188 removed).

The sex ratio of the total horses gathered in 1999 was 48% females and 52% males. At the completion of the 1999 gather there were 107 wild horses released, with a sex ratio of 55% females and 45% males.

Past gather data (1999) was used to determine animal colors and the approximate frequency of the color within the herd. The frequencies of colors found during the 1999 gather were: bay (27%), black (19%), pinto/paint (18%), sorrel/chestnut (12%), brown (9%), buckskin (5%), grey (5%), palomino (2%), roan (2%), and white (1%).

## 3) Genetic Diversity and Viability

Blood samples were collected from removed animals during the 1992 and 1999 gathers to develop genetic baseline data (e.g. genetic diversity, historical origins of the herd, unique markers). The samples were analyzed by Dr. Gus Cothran, a University of Kentucky geneticist, to develop a genetic frequency for the herd, however there were no other interpretations made from the data. Additional blood samples would be drawn from released animals during the proposed gather to establish the current level of genetic diversity for the McCullough Peaks HMA, as well as, to determine the pregnancy status of the mares in the herd. At this time, there is no evidence to indicate that the McCullough Peaks HMA suffers from reduced genetic fitness. There are, however, several alternative management strategies, which can be used to promote genetic conservation within the herd (BLM Wild Horse and Burro Population Viability Forum Recommendations, 1999).

The following summarizes what is known about the McCullough Peaks HMA as it pertains to genetic diversity:

- The McCullough Peaks HMA is isolated from other herds.
- Ne (genetic effective population size) for McCullough Peaks HMA has not been established.
- At this time there is no evidence to indicate that the McCullough Peaks HMA suffers from reduced genetic fitness.
- Available research suggests that maintaining 100 adult animals should allow for sustainability of existing genetic diversity within most wild horse herds.
- As more research is completed, and knowledge becomes available specific to the McCullough Peaks HMA, it will be applied to the HMA managed by the CYFO.

## B. Domestic Livestock and Wildlife

Rangelands in the McCullough Peaks HMA provide seasonal grazing for cattle. Rotational grazing management strategies have been implemented on the majority of the herd area. The livestock grazing permittees in the herd area have taken a substantial amount of voluntary non-use in recent years. The average actual livestock use was 41% of the total active grazing preference during the 2000 thru 2003 grazing seasons. During the 2004 grazing season non-use has been taken by all livestock grazing permittees in the HMA.

The herd area provides yearlong habitat for antelope, mule deer, sage grouse, Hungarian partridge, chukar, and various raptors, furbearers, songbirds and small mammals. Other game species that have been seen in the herd area are elk, whitetail deer, mountain lion, and black bear. Mountain plovers (Wyoming BLM sensitive species) are likely to inhabit the area.

## C. Cultural Resources

A variety of inventories to determine the presence or absence of cultural resource have been conducted in the project area over the last 20 years. Mostly these inventories have been in response to energy, highway, range, wild horse, and realty related activities requiring compliance with Section 106 of the National Historic Preservation Act. Inventories have identified over 100 known sites of both prehistoric and historic ages. Approximately 40 percent of the known sites have been determined eligible for the National Register of Historic Places and approximately 40 per cent of the known sites have been determined not eligible for the National Register. The remaining sites have their eligibility for the National Register listed as unknown.

## D. Invasive, Non-Native Species

Noxious weed surveys, including invasive and non-native species, have been completed along roadways in and adjacent to the HMA. These surveys indicate that the following state listed noxious weeds occur:

<b><u>Scientific Name</u></b>	<b><u>Common Name</u></b>	<b><u>Plant Symbol</u></b>
<i>Cardaria draba</i>	White Top	CARDRA
<i>Acroptilon repens</i>	Russian Knapweed	ACRREP
<i>Centaurea maculosa</i>	Spotted Knapweed	CENMAC
<i>Cirsium arvense</i>	Canada Thistle	CIRARV
<i>Cirsium vulgare</i>	Bull Thistle	CIRVUL
<i>Tamarix ramosissima</i>	Salt Cedar	TAMRAM
<i>Hyoscyamus niger</i>	Black Henbane	HYONIG
<i>Cynoglossum officinal</i>	Houndstongue	CYNOFF
<i>Convolvulus arvensis</i>	Field Bindweed	CONARV

These weeds occur in a variety of habitats including road side areas, rights-of-way, wetland meadows, riparian areas, as well as disturbed upland range sites.

## E. Special Status Species

Threatened & Endangered or candidate species of concern that may or could occur in the McCullough Peaks Wild Horse HMA are listed below:

### Threatened Species (Federally-listed)

	<u>Common Name</u>	<u>Scientific Name</u>
Birds:	Bald eagle	<i>Haliaeetus leucocephalus</i>

### Candidate Species (Federally-listed)

	<u>Common Name</u>	<u>Scientific Name</u>
Mammals:	Black-tailed prairie dog	<i>Cynomys ludovicianus</i>

Complete field investigations have not been conducted for all sensitive/protected plant and animal species. Population inventories and important habitat features have not been identified for these species throughout the horse herd area. Specific locations for helicopter operations, gathering corrals, or other associated disturbing activities would be field checked prior to use to insure that sensitive wildlife habitat would not be affected by these activities. Locations could be moved or modified to avoid or mitigate impacts as needed.

## F. Vegetation

Approximately two-thirds of the herd area is badland-type vegetation of saltbush-grass. The remaining one-third is a sagebrush-grass type. Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), Nuttall's saltbush (*Atriplex nuttalli*), greasewood (*Sarcobatus spp.*), bluebunch wheatgrass (*Agropyron spicatum*), western wheatgrass (*Agropyron smithii*), Indian rice grass (*Oreozopsis hymenoides*), blue grama (*Bouteloua gracilis*), Sandberg's bluegrass (*Poa secunda*), and saltgrass (*Distichlis stricta*) are the major plant species.

Whistle Creek and Coon Creek are two ephemeral streams that originate in and flow from the project area. There are scattered cottonwood and willow trees along these two drainages.

Dry Creek is a perennial stream, which also supports riparian/wetland vegetation, that flows through the southeast part of the herd area. There are numerous reservoirs of various sizes scattered throughout the herd area. In addition to these, pools of water collect in the dry washes/draws (drainages) following snow melt and precipitation events throughout the entire HMA.

Because of the use demands on riparian areas, management considerations have focused on protecting these areas from depletion. Fencing and utilization levels and rotations of domestic livestock have been effective tools in maintaining and improving the qualities of riparian ecosystems. Achieving and maintaining wild horse numbers at AML is an

important factor in enhancing riparian function.

#### **G. Wilderness Study Area (WSA)**

The gather would occur near the McCullough Peaks WSA. The WSA is not congressionally designated as a Wilderness area and therefore is not subject to the restrictions provided under the Wilderness Act of 1964. The WSA is subject to Handbook 8550-1 entitled “Interim Management Policy for Lands under Wilderness Review and the “Federal Land Policy and Management Act.”

The Proposed Action includes the use of a helicopter over the WSA to herd the wild horses out of the WSA and into the traps. This use of helicopters is consistent with BLM policy. The traps and any vehicle use would occur outside the WSA, so as not to impair the suitability of the area for preservation as wilderness.

#### **H. Recreation and Visual Resources**

The public enjoys seeing wild horses roaming free in the McCullough Peaks area. Visitor use has not been documented due to its random nature and the fact that anyone is free to drive out and view wild horses. However, visitation to the area appears to be on the increase. There are five (5) BLM approved and permitted operators who hold recreational guiding permits to take people on tours to view the wild horses. Other

recreational uses of the general area include hunting, mountain biking, horseback riding, ATV use, sightseeing, rock hounding, and photography.

The lands within the project area lie within Visual Resource Management Class II, III, and IV areas. Management classes determine the amount of modification allowed to the basic elements of the landscape. In a Class II area, changes in any of the basic elements caused by management activity should not be evident in the characteristic landscape. Contrasts are seen but must not attract attention. In a Class III area, contrasts to the basic elements caused by a management activity are evident but should remain subordinate to the existing landscape. In a Class IV area, any contrast attracts attention and is a dominant feature of the landscape in terms of scale, but should repeat the form, line, color, and texture of the characteristic landscape.

### **IV. Environmental Consequences**

Resources that may be impacted by the Proposed Action and the alternatives include wild horses, domestic livestock and wildlife, cultural, invasive species, special status species, vegetation, wilderness study area, recreation and visual resources. The direct, indirect, and cumulative impacts are addressed for each resource.

#### **A. Wild Horses**

**Actions common to all alternatives except the No Action Alternative**

## 1) HMA Objectives

### a. Maintain an Average of 100 Wild Horses in the McCullough Peaks HMA

The Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195 as amended) states that, all management activities shall be at the minimum feasible level. The minimum feasible level of management would require that removals and other management actions that directly impact the population, such as helicopter census, occur as infrequently as possible (3 to 5 years). To the extent practical, the removal to the mid-point of the management range with fertility control should allow maintenance of a self sustaining population, as well as, maintaining a thriving natural ecological balance. Population modeling (Appendix B.) conducted for Proposed Action and Alternative II (Removal to the mid-point of the management range, with and without fertility control) indicate that the mid-point of the management range should allow for maintenance of a self sustaining population.

Maintaining an average of 100 wild horses in the McCullough Peaks HMA would meet the intent of the Wild Free Roaming Horse and Burro Act that all management actions shall be at the minimum feasible level. The following positive impacts for wild horses and their habitat are likely:

- A thriving natural ecological balance would be achieved and maintained by reducing the population to the mid-point of the management range with fertility control, following a standardized gather cycle.
- Ensure a viable population of wild horses that will survive, and be successful during poor years when elements of the habitat are limiting due to severe winter conditions, drought or other uncontrollable and unforeseeable environmental influences to the herd.
- Frequent gathers would not be required which would allow for a greater level of herd stability and band integrity.
- Gathers would only occur when the population approaches or exceeds the upper limit of the management range and/or a 4 year gather cycle.
- The wild horse population would be subjected to the stresses associated with gathering and handling as infrequently as possible.

## **b. Selective Removal Criteria**

Direct impacts associated with the Proposed Action (Alternative I) and Alternatives II, III, or IV would consist of selecting wild horses for release that possess the historic characteristics (color pattern, sex ratio) that are typical of the herd demographics of the McCullough Peaks HMA. Animals selected for release would be the most capable of surviving environmental extremes, thus ensuring a viable population is present in the HMA. Utilizing the selective removal criteria would result in a positive impact for the long term health and stability of the population.

The removal of approximately 390 horses from the population would have an impact on herd population dynamics. But these impacts would be mitigated through the selective removal strategy for the McCullough Peaks HMA. The effect of removal of horses from the population is not expected to have significant impact on age structure or sex ratio, as long as the selection criteria for the removal maintains the social structure and breeding integrity of the herd. The selective removal strategy for the McCullough Peaks HMA would maintain the age structure (of critical breeding age animals), the sex ratio and the historic range of characteristics currently within the herd.

Potential negative impacts to the long term health and stability of the population could occur from exercising poor selection criteria not based on herd demographics and age structure. These negative impacts would include modification of age or sex ratios to favor a particular class of animal. Effects resulting from successive removals causing shifts in sex ratios away from normal ranges are fairly self evident. If the selective removal criteria favors studs over mares, it would be expected to result in band size to decrease, competition for mares to increase, and the size and number of bachelor bands to increase. As well as, potential reduced reproduction and enhanced genetics. On the other hand, if the selective removal criteria favors mares over studs, it would be expected to result in fewer and smaller bachelor bands, competition for mares may decrease, and there is a likelihood for larger band sizes.

The effects of successive removals on populations causing shifts in herd demographics favoring younger horses (under 15 years) would also have direct consequences on the population. These impacts are not thought of typically as adverse to a population. They include development of a population, which is expected to be more biologically fit, more reproductively viable, and more capable of enduring stresses associated with traumatic natural and artificial events.

## **c. Gather Operations**

These direct impacts include: handling stress associated with the gathering, processing, and transportation of animals from gather sites to temporary holding facilities, and from the temporary holding facilities to an adoption preparation facility. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality does occur

during a gather however it is infrequent and typically is no more than one half to one percent of the total animals gathered.

Impacts which may occur after the initial stress of herding and capture include: spontaneous abortion in mares, increased social displacement, and conflict in studs and mares. Spontaneous abortion following capture is rare, depending on the time of year gathered. Traumatic injuries that may occur typically involve biting and/or kicking which results in bruises and minor swelling but normally does not break the skin. These impacts occur intermittently and the frequency of occurrence varies with the individual.

Population wide impacts can occur during or immediately following the implementation of the Alternatives I, II, III, or IV. They include the displacement of bands during capture and the associated re-dispersal, temporary separation of members from individual bands of horses, re-establishment of bands following release, and the removal of animals from the population. With the exception of the changes to herd demographics, direct wide population impacts have proven to be temporary in nature with most if not all impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release except for a heightened shyness toward human contact. Observations of animals following release have shown horses relocate themselves back to their home ranges within 12 to 24 hours of release.

All activities would be carried out in accordance with current BLM policy, with the intent of conducting as safe and humane a gather as possible. Recommended actions incorporate proven Standard Operation Procedures (SOPs, Appendix D) which have been developed over time. These SOPs represent the best methods for reducing impacts associated with gathering, handling, transporting and collecting herd data.

#### **d. Data Collection**

Direct impacts associated with data collection involve increased stress levels to the animals as they are restrained in the portable aging chute. Those animals selected for blood sampling may become very agitated as the samples are drawn. Once the animal is released from the chute, stress levels decrease rapidly. The collection of data is a positive impact to the long term management of the population. This data will be used to develop population specific objectives that will help to ensure the long term viability of the population. This procedure is within the intent of Public Law 92-195, as amended, as it relates to managing populations at the minimum feasible level.

## PROPOSED ACTION AND ALTERNATIVES

Population modeling was completed for the Proposed Action and all the Alternatives. One of the objectives of the modeling was to identify if any of the alternatives “crash” the population or cause extremely low population numbers or growth rates. Population modeling does not indicate that a crash is likely to occur to the population under the Proposed Action or Alternatives. Minimum population levels and growth rates were found to be within reasonable levels, and cumulative adverse impacts to the population are not likely.

It is expected that implementation of the Proposed Action or Alternatives would not significantly impact the long-term genetic viability or genetic health of the McCullough Peaks HMA. At this time there is no evidence to indicate that the McCullough Peaks HMA suffers from reduced genetic fitness. Available research suggests that maintaining 100 adult animals should allow for sustainability of existing genetic diversity within most wild horse herds.

### Comparison of Alternatives:

Figure 5 displays the basic differences between the Alternative I (Proposed Action) and Alternatives II, III, IV, and V (No Action) as projected through population modeling (Jenkins Model). Refer to Appendix B, Population Modeling, for a complete summary of data and accompanying tables obtained from the population modeling.

**Figure 5. Comparison of Alternatives**

Alternative	2004 Est. # of Horses	Target # of Horses	Est. # of Horses Gathered	Est. # of Horses Removed	Initial # of Mares Treated	Initial # of Horses Returned to HMA
<b>Alternative I - Proposed Action</b> (Middle Limit of the management range with fertility control)	490	100	490	390	43	100
<b>Alternative II</b> (Middle limit of the management range without fertility control)	490	100	490	390	0	100
<b>Alternative III</b> (Lower Limit of the management range with fertility control)	490	70	490	420	31	70
<b>Alternative IV</b> (Lower limit of the management range without fertility control)	490	70	490	420	0	70
<b>Alternative V – No Action</b>	490	70-140	0	0	0	0

## **ALTERNATIVE I: PROPOSED ACTION**

### **Removal to the Mid-Point (100 Animals) of the Management Range with Fertility Control**

Direct impacts associated with the proposed action include potential changes to herd demographics, stress associated with gathering, and the effects from implementing an immunocontraceptive fertility control research project. The effect on herd demographics was discussed in the Selective Removal Criteria section and the stress associated with gathering would be the same as those discussed under Gather Operations.

Each selected target mare to be released would receive a single-dose of the time-release, 22 month PZP contraceptive vaccine. When injected, PZP (antigen) causes the mare's immune system to produce antibodies that bind to her eggs, effectively blocking sperm penetration and fertilization (ZooMontana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and the environment, and can easily be administered in the field. Also, among mares, PZP contraception appears to be temporary and to have no ill effects on ovarian function if the mare is not contracepted for more than 4 consecutive years. PZP will not affect normal development of the fetus, hormone health of the mare or behavioral responses to stallions, should the mare already be pregnant when vaccinated (Kirkpatrick, 1995). Turner (1997) also found that the vaccine has proven to have no apparent effects on pregnancies in progress, the health of offspring, or the behavior of treated mares.

To date, one herd area has been studied using the 2-year PZP vaccine. The Clan Alpine study, in Nevada, was started in January 2000 with the treatment of 96 mares. The test resulted in fertility rates in treated mares of 6% year one, 18% year two, 32% year three and 43% year four. This data must be compared to normal fertility rates in untreated mares of 50 to 60% in most populations. The Clan Alpine fertility rate in untreated mares collected in September of each year by direct observation averaged 51% over the course of the study.

Mares receiving the vaccine would experience slightly increased stress levels from additional handling while being inoculated and freeze marked. There may be some swelling at the injection site following the administration of the fertility control vaccine, but this would be a temporary, short term impact. Injection site injury associated with fertility control treatments is extremely rare in treated mares, and may be related to experience of the person administering the vaccine. Injection of the vaccine would be controlled, handled and administered by a trained BLM employee, researcher or veterinarian. Any undesirable direct impacts associated with fertility control are expected to be minor in nature and of short duration. The mares would quickly recover once released back to the HMA.

The 2003 USGS/BRD Annual Report on Wild Horse Research and Field Activities reported that treated mares were monitored for any potential swelling, stiffness, muscle tremors, nodules, granulomas, abscesses, and/or behavioral depression, which might

develop subsequent to darting. A 'nodule' is defined as a lump that appeared less than 2 weeks after an injection. The physiological proof of granulomas would require clinical diagnosis, which has not been performed.

Population wide indirect impacts would not appear immediately as a tangible effect and are more difficult to quantify. Impacts involve reductions in short term fecundity of initially a large percentage of mares in a population, increasing herd health as AMLs are achieved, and potential genetic issues regarding controlling contributions of mares to the gene pool, especially in small populations. The implementation of fertility control would result in an opportunity to allow increased fitness and condition of the mares released following the gather. The potential reprieve from foaling would greatly increase the overall health and fitness of mares.

The use of fertility control would not be expected to have any long term significant impacts (direct or indirect) to the McCullough Peaks HMA genetic health, long term viability or future reproductive success of mares within the herd. Implementation of fertility control is expected to improve the health of the mares within the HMA, and indirectly improved health of the foals born to those mares in the future. Improved condition of the mares and foals would aid in the long-term health and viability of the McCullough Peaks HMA wild horse population. Reduced growth rates that would occur with the implementation of fertility control would influence herd size over a 2 to 3 year period, reducing competition for resources and utilization levels of those resources. Reduced growth rates would increase the interval between gathers, having overall beneficial impacts to the entire wild horse population, wildlife, and domestic livestock, while contributing to the achievement and maintenance of a thriving natural ecological balance.

The wild horse population would only increase at an average rate of 15-16% annually with the use of fertility control.

## **ALTERNATIVE II**

### **Removal to the Mid-Point (100 animals) of the Management Range without Fertility Control**

Direct impacts associated with Alternative II include potential changes to herd demographics, and stress associated with gathering. The effect on herd demographics was discussed in the Selective Removal Criteria section and the stress associated with gathering would be the same as those discussed under Gather Operations.

The population will increase each year until the next gather is scheduled in approximately 2007. A thriving natural ecological balance would not be maintained. Resource degradation would first be in the form of over utilization of the forage resources – both upland and riparian. Wild horses would also contribute to degradation of upland mule deer, pronghorn antelope, and sage grouse forage species. Degradation to resources would increase as wild horse numbers increase. This degradation would be

worsened during years affected by drought or other environmental extremes that cause additional stress to resources or shortages of resources to rangeland uses.

The wild horse population would increase at an average rate of 21-22% annually.

### **ALTERNATIVE III**

#### **Removal to the Lower Limit (70 Animals) of the Management Range with Fertility Control**

Alternative III has the highest projected potential for a catastrophic event that could eliminate the herd and potentially putting the long-term health of the herd at risk based upon Jenkin's population modeling (Appendix B).

Direct impacts associated with Alternative III include potential changes to herd demographics, stress associated with gathering, and the effects from implementing an immunocontraceptive fertility control research project. The effect on herd demographics was discussed in the Selective Removal Criteria section and the stress associated with gathering would be the same as those discussed under Gather Operations. The impacts associated with implementing an immunocontraceptive fertility control research project were discussed in the Proposed Action.

Because Alternative III involves gathering to the lower limit of the management range (70 head) and implementing a fertility control research program, the upper limit of the management range (140) would not be exceeded and resource degradation would not be expected to resume until after 2009. Inoculated mares would foal normally in 2005, and the contraceptive would limit foal production in 2006 and 2007. Near normal foaling rates would be expected to resume in 2008. Gathering to the lower limit of the management range (70 head) would allow the wild horse population to increase over a longer period of time to the upper limit of the management range (140 head). When this level is exceeded, a gather would be scheduled. Because the HMA would be gathered again to the lower limit of the management range, resource degradation associated with wild horses would be minimized. A thriving natural ecological balance would be expected to be maintained until 2008 and the potential for resource degradation would increase starting in 2009. Resource degradation would first be in the form of over utilization of the forage resources – both upland and riparian. Wild horses would also contribute to degradation of upland mule deer, pronghorn antelope, and sage grouse forage species. Degradation to resources would increase as wild horse numbers increase. This potential degradation would be worsened during years affected by drought or other environmental extremes that cause additional stress to resources or shortages of resources to rangeland users.

The use of fertility control would not be expected to have any long term significant impacts (direct or indirect) to the McCullough Peaks HMA genetic health, long term viability or future reproductive success of mares within the herd. Implementation of fertility control is expected to improve the health of the mares within the HMA, and improved health of the foals born to those mares in the future. Improved condition of the mares and foals would aid in the long-term health and viability of the McCullough Peaks HMA wild horse population. Reduced growth rates that would occur with the implementation of fertility control would influence herd size over a 2 to 3 year period, reducing competition for resources and utilization levels of those resources. Reduced growth rates would increase the interval between gathers, having overall beneficial impacts to the entire wild horse population, wildlife, and domestic livestock, while contributing to the achievement and maintenance of a thriving natural ecological balance.

Due to the reduced population size, Alternative III would not ensure the McCullough Peaks HMA would be a successful self-sustaining population of healthy animals in balance with other uses and the productive capacity of the habitat. The herd would be at a higher risk of ill fitness and disease should elements of the habitat become limiting due to drought or winter extremes (BLM Wild Horse and Burro Population Viability Forum Recommendations, 1999).

The wild horse population would increase at an average rate of 16-17% annually with the use of fertility control.

## **ALTERNATIVE IV**

### **Removal to the Lower Limit (70 Animals) of the Management Range without Fertility Control**

Alternative IV, based upon Jenkin's population modeling, is projected to have the second lowest population size for any of the modeling runs at 70 animals, which is at the lower level of the management range of 70 horses (Appendix B). The drop in population numbers below this level could potentially have a detrimental /adverse impact to the genetic viability of the herd.

Direct impacts associated with Alternative IV include potential changes to herd demographics, and stress associated with gathering. The effect on herd demographics was discussed in the Selective Removal Criteria section and the stress associated with gathering would be the same as those discussed under Gather Operations.

The population will increase each year until the next gather is scheduled in approximately 2009. Gathering to the lower limit of the management range (70 head) would allow the wild horse population to increase over a longer period of time to the upper limit of the management range (140 head). When this level is exceeded, a gather would be scheduled. Because the HMA would be gathered again when the upper limit of the management range is exceeded, resource degradation associated with wild horses would be minimized. A thriving natural ecological balance would be maintained until

2008 and the potential for resource degradation would increase starting in 2009. Resource degradation would first be in the form of over utilization of the forage resources – both upland and riparian. Wild horses would also contribute to degradation of upland mule deer, pronghorn antelope, and sage grouse forage species. The potential degradation to these resources would increase as wild horse numbers increase. This potential degradation would be worsened during years affected by drought or other environmental extremes that cause additional stress to resources or shortages of resources to rangeland users.

Based upon low population levels over a period of time, the outcome of Alternative IV would not ensure the McCullough Peaks HMA would be a successful, self-sustaining population of healthy animals in balance with other uses and the productive capacity of the habitat. Due to the low population, the herd would be at a higher risk of ill fitness and disease should elements of the habitat become limiting due to drought or winter extremes (BLM Wild Horse and Burro Population Viability Forum Recommendations, 1999).

Mares would continue to foal at normal rates and the population would increase at an average rate of 21-22% annually.

## **ALTERNATIVE V**

### **No action**

The current population of 409 wild horses would continue to increase (32%), and exceed the carrying capacity of the range. Though it may require many years for the population to reach catastrophic levels, by exceeding the upper limit of the management range (140), Alternative V poses the greatest risk to the long-term health and viability of the McCullough Peaks HMA wild horse population, wildlife populations, and the vegetative resource.

The population of wild horses would compete for the available water and forage resources. The areas closest to water would experience severe utilization and degradation of the range resource. Over the course of time, the animals would deteriorate in condition as a result of declining forage availability and the increasing distance traveled between forage and water sources. The mares and foals would be affected most severely. The continued increase in population would eventually lead to catastrophic losses to the herd, which would be a function of the available forage and water and the degradation of the habitat. A point would be reached where the herd reaches the ecological carrying capacity and both the habitat and the wild horse population would be critically unhealthy.

Ecological carrying capacity of a population is a scientific term, which refers to the level at which density-dependant population regulatory mechanisms would take effect within the herd. At this level, the herd would show obvious signs of ill fitness, including poor individual animal condition, low birth rates, and high mortality rates in all age classes due to disease and/or increased vulnerability to predation (Coates-Markle, 2000). In addition, irreparable damage would occur to the habitat through overgrazing, which is

not only depended upon by wild horses but by wildlife (which include sensitive species), and permitted livestock. All multiple uses of the area would be impacted. Significant loss of wild horses in the McCullough Peaks HMA due to starvation and disease would have obvious consequences to the long-term viability of the herd. Irreparable damage to the resources, which would include primarily vegetative, soil and riparian resources, would have obvious impacts to the future of the McCullough Peaks HMA and all other uses of the resources, which depend upon them for survival.

Predators do not substantially regulate wild horses in the McCullough Peaks HMA. In addition, wild horses are a long-lived species with documented foal survival rates exceeding 95%. The no action alternative would result in a steady increase (32%) in wild horse numbers, which would greatly exceed the carrying capacity of the range and eventually lead to the loss of horses because of starvation or dehydration.

This alternative would not be acceptable to the BLM nor most members of the public. The BLM realizes that some members of the public advocate “letting nature take its course”, however allowing horses to die of dehydration and starvation would be inhumane treatment and would clearly indicate that an overpopulation of wild horses existed in the HMA. The Wild Free-Roaming Horse and Burro Act of 1971, as amended, mandates the Bureau to “*prevent the range from deterioration associated with overpopulation*”, and “*remove excess horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area*”. Additionally, Promulgated Federal Regulations at Title 43 CFR 4700.0-6 (a) state “*Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat*”.

## **B. Domestic Livestock and Wildlife**

Wildlife populations in areas where wild horses are gathered could be disrupted for a short time during the gathering operations, due to human presence and the noise of the helicopter, which may cause wildlife to seek cover in areas away from gathering routes. Once gathering operations cease, these effects would stop. Capture activities would not cause abandonment of normal habitat areas. There would be no long-term adverse effect on wildlife. Gathering of horses would not have any effect on mountain plovers.

Reaching the AML and maintaining the populations at this level would assure that the quality and quantity of forage for domestic livestock, wildlife, and wild horses would be available. Improved quality and increased quantity of forage allows the continuation of authorized livestock use and helps to obtain or maintain objective wildlife populations as defined by the Wyoming Game and Fish Department.

BLM data and past experience show that removal of excess horses from areas of wild horse concentration would improve habitat conditions for wildlife. This effect is most pronounced around water sources and would benefit both game and non-game wildlife. Maintaining wild horse populations at AML through the removal of excess wild horses enables wildlife populations to utilize the forage that would otherwise be used by the

excess wild horses. No adverse cumulative impacts to domestic livestock and wildlife are anticipated.

### **C. Cultural Resources**

Tribal representatives on the Northern Wyoming Native American Consultation mailing list have been notified of the McCullough Peaks HMA Gather Plan and Fertility Control Implementation Plan process and have been invited to identify any concerns about sites significant to the history, culture, or religion of Native Americans within the project area pursuant to the National Historic Preservation Act of 1966 as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470) or any sacred sites pursuant to Executive Order 13007 signed May 24, 1996.

The McCullough Peaks HMA Gather Plan and Fertility Control Implementation Plan and this Environmental Assessment would be provided to those who have requested additional information and to the State Historic Preservation Office. Any information provided in response will be taken into consideration during development of the Final Plans and Decision Record.

Gathering horses and implementing the fertility control is not expected to impact cultural resources. Rehabilitation of trap sites has the potential to impact cultural resources. Any rehabilitation work would be done within the existing surface disturbance, and would be subject to the following stipulations for the protection of cultural resources:

Cultural Resources, Standard Stipulations. The BLM is responsible for informing all persons associated with this project that they may be subject to prosecution for knowingly damaging, altering, excavating or removing any archaeological, historical, or vertebrate fossil objects or site. If archaeological, historical, Native American, or vertebrate fossil materials are discovered, the BLM is to suspend all operations that further disturb such materials and immediately contact the Authorized Officer. Operations are not to resume until written authorization to proceed is issued by the Authorized Officer (AO).

The authorized officer will evaluate, or will have evaluated, such discoveries not later than five working days after being notified, and will determine what action shall be taken with respect to such discoveries. The decision as to the appropriate measures to mitigate adverse effects to significant cultural or paleontological resources will be made by the authorized officer after consulting with the BLM.

The BLM is responsible for the cost of any investigations necessary for the evaluation, and any mitigative measures required by the Authorized Officer. The AO will provide technical and procedural guidelines for the conduct of evaluation and mitigation. Upon verification from the AO that the required evaluation and/or mitigation has been completed, the BLM will be allowed to resume operations.

Native American Resources. The area under consideration may contain areas or

locations of religious or cultural concern to Native Americans, but these areas have not yet been identified. If such areas are subsequently identified or become known through the Native American notification or consultation process they would be considered during the implementation phase. The BLM would take no action that would adversely affect these areas or locations without consultation with the appropriate Native Americans.

Human Remains. If human remains are discovered or suspected the operator shall suspend operations immediately, physically guard the area, and notify BLM immediately. Direct or indirect impacts to cultural resources are not anticipated to occur from implementation of the Proposed Action or Alternatives. All gather sites and temporary holding facilities would be inventoried for cultural resources prior to construction. The CYFO archeologist would review all proposed and previously used gather sites and temporary holding facility locations to determine if these have had a cultural resources inventory, and/or if a new inventory is required. If cultural resources are encountered at proposed gather sites or temporary holding facilities, those locations would not be utilized unless they could be modified to avoid impacts.

#### **D. Invasive Non-Native Species**

Direct impacts associated with the Proposed Action and Alternatives II, III, or IV include potential importation or transportation of new non-native species (noxious weeds), spread of existing noxious weed seeds and plant parts to new areas in the HMA, and increases in the size of existing noxious weed infestations. These impacts would potentially occur if contractor vehicles are carrying noxious weed seeds and plant parts when they arrive on site, or drive through existing infestations and spread seed into previously weed free areas, or if their livestock had been fed contaminated hay before arriving on site and the seeds pass through their digestive system. Only certified weed-free hay may be fed on public lands in Wyoming. The contractor together with the on site BLM representative would examine vehicles and hay for noxious weed seeds or plant parts, prior to initiating the gather. If noxious weed seeds or plant parts are found in hay or on vehicles, the hay would be removed from the area and the vehicles cleaned. Proposed trap sites and holding sites would be examined for the presence of noxious weeds prior to construction. If noxious weeds were found, the location of the facilities would be moved. Potential indirect impacts would be related to population size. The average population size for the median trial as projected by the population model (Appendix B) shows that Alternative III results in the lowest number of wild horses in 10 years. The model also shows that the projected population size in 10 years is increasingly higher for Proposed Action and Alternatives II, IV, and V (No Action). The action that results in the lowest population size would have the lowest potential for increasing the incidence of noxious weeds, while the largest population size would have the highest potential for increasing the incidence of noxious weeds. The potential increase in noxious weeds would be from increasing utilization levels and ground disturbance, from the Proposed Action thru Alternative V (No Action). Noxious weeds can increase with overuse of the range by grazing animals, or surface disturbance. Maintenance of healthy populations of native perennial plant species minimizes the

establishment of invasive, non-native weeds.

Implementation of Alternative V (No Action) would allow impacts to vegetation and soils to increase each year that a gather is postponed, and utilization levels would continue to be in excess of objectives. Noxious weeds can increase with overuse of the range by grazing animals or surface disturbance, which would be a negative impact to the environment.

## **E. Special Status Species**

Direct impacts associated with the Alternatives I, II, III, or IV would consist primarily of disturbance by the low-flying helicopter. The Proposed Action or Alternatives II, III, or IV would not occur during the strutting, nesting or brooding period for sage grouse. Sage grouse may be displaced in their winter use area as wild horses are herded to temporary traps located outside of identified sage grouse habitat. These impacts would be temporary, with a short duration, and minimal. Temporary gather site(s) and temporary holding facilities will be located appropriate distances from key sage grouse habitat, to avoid adverse impacts to habitat, in conformance with the Draft Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Wyoming (2001). Such temporary facilities sites would also be field checked to insure that any special habitat features for Special Status species would be avoided and any potential affects from gathering activities would be avoided or minimized. Based on the timing of the horse round up for the McCullough Peaks Wild Horse Herd Management Area, it is unlikely that any of the indicated species would be affected by horse herd management activities.

Indirect impacts would be related to wild horse population size. Reduction of the current wild horse population provides the opportunity for vegetative communities to progress toward achieving a thriving natural ecological balance. Implementation of Alternatives I (Proposed Action), II, III, or IV would result in a positive impact to special status species by creating a diverse vegetative structure through improvement and maintenance of healthy populations of native perennial plants. Implementation of the Proposed Action would provide the greatest opportunity for the improvement of vegetative communities. The opportunity for improvement decreases for each successive alternative. Implementation of Alternative V (No Action) would allow impacts to vegetative communities to increase each year that a gather is postponed, which would be a potential negative impact to special status species.

## **F. Vegetation**

Direct impacts associated with the Proposed Action and Alternatives II, III, or IV would consist of disturbance to vegetation and soils immediately in and around the temporary gather site(s) and holding facilities. Impacts would be created by vehicle traffic; hoof action as a result of concentrating horses, and could be locally severe in the immediate vicinity of the gather site(s) and holding facilities. Generally, these sites would be small (less than one half acre) in size. Any impacts would remain site specific and isolated in nature. In addition, most gather sites and holding facilities would be selected to enable

easy access by transportation vehicles and logistical support equipment. Normally, they are located near or on roads, pullouts, water haul sites or other flat areas, which have been previously disturbed. These common practices would minimize the cumulative effects of these impacts.

Indirect impacts would differ among the alternatives. Implementation of the Proposed Action and Alternatives II, III, or IV would reduce the current wild horse population and provide the opportunity for the vegetative communities to progress toward achieving a thriving natural ecological balance. Reduced concentrations of wild horses would contribute to the recovery of the vegetative resource. Utilization levels by wild horses would be reduced, which would result in improved forage availability, vegetation density, increased plant vigor, seed production, seedling establishment, and forage production over current conditions. Population modeling (Appendix B) completed for the Proposed Action and Alternative II found that the average median population size over 10 years is projected to be 155 and 173 wild horses, respectively. This indicates that the population of wild horses would not exceed their carrying capacity until 2007. Population modeling (Appendix B) completed for the Alternative III and IV found that the average median population size over 10 years is projected to be 132 and 137 wild horses, respectively. This indicates that the population of wild horses would not exceed their carrying capacity until 2009. The implementation of the Proposed Action and Alternatives II, III, and IV would provide opportunity for a positive impact to vegetation and soils resources.

Implementation of Alternative V (No Action) would allow impacts to vegetation and soils to increase each year that a gather is postponed, having a negative affect on vegetation and soils. Utilization levels would continue to be in excess of objectives, and progression toward achieving a thriving natural ecological balance would not be possible.

The proposed action or alternatives would not directly impact water quality, wetlands or riparian zones within the project area, with the exception of some wild horses crossing streams or springs as they are herded to temporary gather sites. This impact would be temporary and relatively short term in nature. Gather sites and temporary holding facilities would not constructed on wetlands or riparian zones.

Indirect impacts would be related to population size. Population modeling completed for the Proposed Action and Alternatives found that the average median population size increased from Alternative III (lowest number) thru Alternative V (highest number). Reduction of the population from current levels would decrease competition for available water sources, which should lead to a reduction in hoof action around unimproved springs, improvement in stream bank stability, and improved riparian habitat condition. Implementation of the Proposed Action would provide the opportunity for the greatest improvement of riparian habitats and water quality. The opportunity for improvement decreases for each successive alternative. Implementation of Alternative V (No Action) would allow impacts to riparian habitats and water quality to increase each year that a gather is postponed.

## **G. Wilderness Study Area (WSA)**

The Proposed Action and Alternatives II, III, and IV meet the non-impairment criteria as helicopter use is temporary use, causes no surface disturbance, and requires no reclamation. The use of a helicopter to gather wild horses is specifically allowed in handbook H-8550-1, Interim Management Policy and Guidelines for Lands Under Wilderness Review (page 43). There would be a short-term impact on solitude for any visitors who are present in the WSA while the helicopter is being used. The time frame involved is very limited. Removal of excess wild horses would help to protect the vegetative cover within the WSA and would be beneficial for the wild horses which remain in the area.

Under the No Action alternative there would not be any direct impacts to the WSA as a result of not conducting the gather. However, as increasing numbers of horses require additional range, most of the impacts described above would also begin to occur in the WSA. The previously described impacts to vegetation, wildlife, wildlife habitat, and watershed function would have a detrimental effect on the WSA's ecosystem. Also, the deteriorated habitat would negatively impact opportunities for primitive and unconfined recreation.

## **H. Recreation and Visual Resources**

Under the Proposed Action and Alternative II, III, and IV, maintaining wild horse populations at established AML's guarantees the opportunity for the public to view wild horses in a wild and free-roaming state. Although there would be fewer horses to view, the remaining horses would be in better condition than under the No Action Alternative. Additional recreational opportunities would be provided by wild horse adoption and adoption events. Adoption of wild horses provides the opportunity for a more in-depth, up-close, and long-term recreational experience for interested and qualified members of the public. Since wildlife and wildlife habitat benefit from the removal of excess horses, there is a beneficial effect for recreationalists who view game and non-game species and those who hunt.

Under the No Action Alternative, short-term impacts to recreationists observing wild horses on the range would be positive, as there would be more horses in more places. However, over time, the condition of the wild horses would decline, as would the habitat. Increases in wild horse numbers would likely mean a decline in the opportunity to enjoy wildlife-related consumptive and non-consumptive recreation. There would be no opportunity to adopt a wild horse from this area.

## V. Cumulative Impacts

Cumulative impacts are impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively major or problematic actions taking place over a period of time.

Past, proposed and reasonably foreseeable actions that may have similar effects to the McCullough Peaks HMA wild horse population would include past wild horse gathers and future wild horse gathers. Five gathers have been completed in the past, and future gathers would be scheduled according to a 4-5 year gather cycle. Over time, as wild horse population levels are maintained in an acceptable management range, a thriving natural ecological balance would be achieved and maintained. Cumulative effects that may result would include continued improvement of the range condition, and riparian-wetland condition. Cumulative beneficial effects from the implementation of Alternatives I, II, III, or IV to wildlife, the wild horse population and domestic livestock would occur as forage availability and quality is maintained and improved. Water quality and riparian habitat would also continually improve. The opportunity for cumulative beneficial effects decreases for each successive alternative.

Adverse cumulative impacts on natural resources would occur depending on which alternative is selected. Adverse cumulative impacts would include periodic over utilization of vegetative resources, which would result in decreased vegetative density, plant vigor, seed production, seedling establishment, and forage production. This may result in periodic decreases of the ecological status of plant communities.

Adverse cumulative impacts on natural resources for Alternative V, No Action, would include continued over utilization of vegetative resources which would result in decreased vegetative density, plant vigor, seed production, seedling establishment, forage production, and a potential increase of non-native species to new areas in the HMA. Continued over use of the vegetative community would result in a loss of ecological status of the plant communities which may take decades to restore. Decreased vegetative density would result in an increase of bare ground, which may lead to increased erosion, increased negative impacts to stream banks and riparian habitat condition. A petition has been filed with the U.S. Fish and Wildlife Service to list sage grouse as an endangered species. With continued over use on upland sage grouse habitat, a negative adverse cumulative impact to this species would occur. Wildlife, migratory birds, and wild horses would all be negatively affected by these adverse cumulative impacts to natural resources.

Other reasonably foreseeable actions within the affected area include the potential designation by Congress of the McCullough Peaks Wilderness Area which may influence the AML or timing of future gathers, as well as, permitted livestock grazing, mining,

range improvements, and vegetation monitoring. Because other activities within the potentially affected area are generally isolated from each other and from the Proposed Action and Alternatives, whether by distance or by topography, the potential for cumulative impact on most of these identified resources is minimal.

Based upon these considerations, the effects of other existing and reasonably foreseeable future activities including Alternatives I, II, III, or IV, would not cause a major affect to the environment. Alternative V, No Action, may cause a major impact to the environment.

There would be no known adverse cumulative impacts to any of the resources analyzed in this document as a result of the Proposed Action. There would be minor adverse cumulative impacts from implementing Alternatives II, III, or IV, primarily to vegetation, soils and riparian habitat. Cumulative impacts would increase for each successive alternative. Adverse cumulative impacts to vegetation, soils and riparian habitat would occur as a result of selecting Alternative V, No Action.

## **VI. Consultation and Coordination**

The Bureau of Land Management is responsible for obtaining public input on proposed actions within the wild horse program. A public scoping meeting was held on December 12, 2002. to solicit comments from interested parties.

In accordance with 43 CFR 4740.1(b), a formal statewide hearing regarding the use of helicopters for the roundup of wild horses in Wyoming was held July 8<sup>th</sup> 2004 in Lander, Wyoming. The public was provided an opportunity to discuss concerns and questions with BLM staff.

A letter was sent notifying interested groups and individuals that an Environmental Assessment for the McCullough Peaks Herd Management Area Gather Plan and Fertility Control Implementation Plan is available on the Wyoming BLM website for review and comment.

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