

**U.S. Department of the Interior
Bureau of Land Management
Little Snake Field Office
455 Emerson Street
Craig, CO 81625-1129**

ENVIRONMENTAL ASSESSMENT

EA-NUMBER: CO-100-2008-050

PROJECT NAME: Sand Wash Herd Management Area Population Management Action.

LEGAL DESCRIPTION: See Map, Attachment 1

Sand Wash Herd Management Area	T8N R99W Secs. 1, 2, 11-14, 24 T8N R98W Secs. 1-30 T8N R97W Secs. 4-10, 15-20, 30 T9N R99W Secs. 1-25, 34-36 T9N R98W All T9N R97W Secs. 4-9, 16-21, 28-33 T10N R100W Secs. 24-26, 34-36 T10N R99W Secs. 1, 2, 7-36 T10N R98W All T10N R97W Secs. 1-12, 14-22, 27-34 T11N R99W Sec. 36 T11N R98W Secs. 13, 14, 20-36 T11N R97W Secs. 19, 29-35
	153,118 acres - BLM 1,847 acres - Private <u>3,238 acres - State</u> 158,203 acres - Total

APPLICANT: BLM

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to the following plan:

Name of Plans: Little Snake Resource Management Plan and Record of Decision

Date(s) Approved: April 26, 1989

Results: The Proposed Action is consistent with the Little Snake Resource Management Plan, Record of Decision, Wild Horse Management objective to manage wild horse habitat to

achieve and maintain a thriving natural ecological balance and to remove excess wild horses periodically to maintain appropriate management levels on the HMA.

The Sand Wash HMA is located within Management Unit (MU) 2 (Northern Central), MU 3 (Little Snake River), MU 5 (Douglas Mountain) and MU 12 (Vermillion). The majority of the HMA falls within MU 3. The Proposed Action is compatible with the management objectives for MU 2 which are to provide for the development of the oil and gas resource. It is also compatible with the management objectives for MU 3 which are to improve soil and watershed values, increase forage production and enhance livestock grazing. The Proposed Action is also compatible with the management objectives for MU 5, which are to manage the forest and woodland resources to produce a variety of forest and woodland products on a sustained-yield basis, and with the management objectives for MU 12, which are to prevent any increases in erosion and/or sediment yield.

The Proposed Action and Alternatives have been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3).

RELATIONSHIP TO STATUTES, REGULATIONS, POLICIES, OR OTHER ENVIRONMENTAL ANALYSES

The Wild Free-Roaming Horses and Burros Act of 1971 (P.L. 92-195) (Act) and 43 Code of Federal Regulations (CFR 4700- Protection, Management, and Control of Wild Free-Roaming Horses and Burros), recognizes wild horses will be managed in balance with other uses and with the productivity of their habitat. BLM is directed to analyze current monitoring data and other pertinent information when making a determination that an overpopulation of wild horses exists. BLM is directed to remove excess wild horses as a means to restore a thriving, natural ecological balance to the range, and to protect the range from the deterioration associated with overpopulation.

The appropriate management level (AML) of 163 to 362 wild horses identified in this document continues to implement the management range established in the 2001 Sand Wash Wild Horse Environmental Assessment/Gather Plan (CO-100-2001-044). The 2001 Plan set a management range of 163 to 362 wild horses and recognized that this range would be managed on a four year gather schedule. This EA identified the high end of the management range, 362 horses, as the AML. A subsequent EA (CO-100-2005-051) prepared for the 2005 gather, clarified that the AML was a range of 163 to 362 wild horses with each gather having the goal of reducing the population down to the low end of AML, 163 horses. This document re-affirms the AML based on the monitoring of range and vegetation conditions.

With implementation of the Proposed Action, a predetermined number of wild horses would be removed from the Sand Wash Herd Management Area (HMA) in order to achieve the low end of the AML range, 163 horses. This action is in accordance with 43 CFR 4700.0-2 which states, in part, that wild horses will be managed “as an integral part of the natural system of the public lands under the principle of multiple use...”, with 43 CFR 4700.0-6 which identifies that wild horses “shall be managed as self-sustaining animals in balance with other uses and the

productive capacity of their habitat.”, and with P.L. 92-195, Sec. 3 (b) (2) which identifies the need to maintain appropriate numbers of wild horses within their HMA’s.

Wild horses that have relocated outside the boundaries of the HMA would be gathered and placed in the adoption program, offered for sale or sent to one of the BLM’s wild horse long-term holding facilities. This action is in accordance with 43 CFR 4710.4 which states that “management of [wild horses] shall be undertaken with the objective of limiting the animals’ distribution to herd areas”, which is the “geographic area identified as having been used by a herd as its habitat in 1971” (43 CFR 4700.0-5). It is also in accordance with P.L. 92-195, which limits wild horse management to areas inhabited by wild horses at the time of the passage of the December 1971 Act.

PURPOSE AND NEED FOR PROPOSED ACTION: Following a thorough review of current monitoring data (refer to Appendix I) and recognizing wild horses are to be managed in thriving, natural ecological balance with other multiple uses and resources, the Little Snake Field Office manager has determined the Sand Wash wild horse herd needs to be reduced to 163 horses. The herd is managed from 163 and 362 horses to reflect the natural growth rate of the population during the period between gathers, and to ensure sustainability of the Sand Wash Herd. The AML also reflects the soil, water, and forage resources available to the wild horses and other range users.

To help build the scientific foundation for incorporating immunocontraception into BLM management of wild horses on western public lands, it is proposed to partner with the Human Society of the United States (HSUS) to conduct a five year field study to examine the efficacy of PZP (porcine zona pellucida) immunocontraceptive vaccine. The current formulation is a 22 month time released pelleted vaccine. The study seeks to contracept 60-80% of breeding age mares within two wild horse herds and therefore reduce population growth rates significantly. The Cedar Mountain herd in Utah and the Sand Wash herd in Colorado have been selected for the field study.

Applying fertility control protocol as a part of the Proposed Action should slow reproduction rates of mares returned to the Sand Wash HMA following the gather, allowing vegetation resources time to recover. It would also decrease gather frequency and disturbance to individual animals and the herd and provide for a more stable herd structure.

It also proposed to gather and relocate three wild horse mares from the Sand Wash HMA to the Spring Creek HMA which is managed by the Dolores Field Office. This action would help to improve the genetics in the Spring Creek Herd Area. This has been done on previous occasions with a successful outcome. An EA for the relocation/reintroduction of wild horses was prepared in 2001 (CO-SJFO-01-053 EA) and can be obtained from the Dolores Field Office upon request.

PUBLIC SCOPING PROCESS: A letter was sent to the interested public on May 22, 2008 to notify them that the LSFO was in the process of preparing the 2008 Sand Wash Herd Management Area Wild Horse Gather Plan and EA. In addition, the letter notified the public of a public hearing addressing the use of motor vehicles during the capture and transport of wild

horses to be held on July 10, 2008. A second public hearing and a follow up discussion on the proposed gather was held on July 29, 2008. A notice was published in the local newspaper to inform the public of the second hearing and discussion.

The project is posted on the 2008 NEPA log on the Little Snake Field Office web site and the EA will be posted at the following web address upon completion:

http://www.blm.gov/co/st/en/BLM_Information/nepa/lsgo/register_2008.html

BACKGROUND: With passage of the 1971 Wild Free-Roaming Horses and Burros Act, Congress recognized wild horses are living symbols of the pioneer spirit of the West. The Secretary of the Interior was ordered to manage wild, free-roaming horses and burros in a manner designed to achieve and maintain a thriving natural ecological balance on the public lands. From the passage of the Act through the present day, the Little Snake Field Office (LSFO) has endeavored to meet the requirements of the Act. Throughout this period, BLM experience has grown, and the knowledge of the effects of current and past management of wild horses and burros has increased. At the same time, nationwide awareness and attention has grown. As these factors have come together, the emphasis of the wild horse and burro program has shifted. Program goals have expanded beyond simply establishing a thriving natural ecological balance (setting AML) for individual herds. Goals now include achieving and maintaining healthy, self-sustaining populations.

This document has been prepared to assess the environmental impacts resulting from the removal of excess wild horses from the Sand Wash HMA, lowering the Sand Wash wild horse population to 163 adult animals and lowering the fecundity rate by using the PZP vaccine. This document will discuss the specific impacts to wild horses from the age selective removal and the lowering of the fecundity rate. The Preferred Alternative section and Appendix II and III of this EA serve as the 2008 Operational Gather Plan and address the AML, management range, and technical aspects of the Proposed Action.

The numbers, age, and sex of animals proposed for removal are supported by The Wild Horse Population Model Version 3.2 developed by Dr. Steve Jenkins, Associate Professor, University of Nevada, Reno. Appendix II discusses the parameters used for the modeling runs.

Sand Wash Herd Management Area

The Sand Wash Herd Management Area is located 45 miles west of Craig, Colorado, in the Sand Wash Basin. The HMA encompasses 157,730 total acres, of which 154,940 acres are public, 1,960 acres are private and 840 acres are managed by the State of Colorado. The HMA has a gradual elevation change from 8,100 feet at Lookout Mountain to 6,100 feet at the south end of the HMA. The interior of the HMA consists of gently rolling to moderately steep slopes cut by numerous small drainages leading into Sand Wash Draw. Yellow Cat Wash and Dugout Wash drain most of the eastern half of the basin. Bordering Sand Wash Basin on the southwest is Dry Mountain, a small mountain range with elevations ranging from 6,900 to 7,500 feet. To the northwest, the HMA is bordered by the Vermillion Bluffs, a large extended rim with elevations ranging from 6,800 to 8,100 feet. The HMA is bordered on the east side by Sevenmile Ridge

which extends in a north/south direction from Highway 318 northerly along the entire east side of the HMA towards Nipple Rim.

The HMA lies within portions of the Sand Wash, Sheepherder Springs, Nipple Rim, and Lang Springs Allotments. Domestic sheep are permitted for dormant season and early season use relying predominantly on browse during the winter, and early green up of grasses and forbs in March and April. Cattle are licensed for 971 AUMs of winter use in Sheepherder Spring Allotment. This use historically has not been activated. The HMA supports large game (primarily pronghorn antelope and elk), smaller wildlife species and wild horses all year.

The HMA contains large areas of salt desert shrub plant communities that recover slowly from impacts such as grazing and mechanical surface disturbance. The predominant plant community is sagebrush/perennial grass intermingled with rabbitbrush and salt desert shrubs such as shadscale, horsebrush, greasewood, and Nuttall's saltbush. In areas where soils and topography allow, Nuttall's saltbush is the dominant shrub and is associated with winterfat, budsage, and kochia in some areas.

Wild and domestic ungulates rely on browse plant species for much of their nutritional needs during the winter months. While the majority of shrub species contain high levels of protein in their twig tips and leaves, Nuttall's saltbush is the most palatable of the browse plants and so is often the most heavily impacted by grazing animals. During mild winters or winters with below average or average snow accumulation, key islands of localized saltbush communities can receive high utilization from the various users. During harsh winters and periods of high snow accumulation, Wyoming big sagebrush and salt desert shrub species receive the highest use. The heaviest competition between all range users occurs during the early spring when increased dietary needs associated with birthing and breeding are further increased by low body fat reserves, and low nutritional content of plant species in the early spring.

During the spring and summer, wild horse diets consist primarily of native perennial grasses such as Indian ricegrass, bottlebrush squirreltail, western wheatgrass and needleandthread grass.

While the majority of the HMA boundary is fenced, horses in the Sand Wash herd roam freely through their range with no internal fencing or impassible topographic features to limit their movements. Fewer horses concentrate in the south, southwest and western portion of the HMA regardless of the time of year. This is the result of several factors including seasonal recreational traffic, lack of perennial water sources, saline water (less palatable), and home range preference. The southern and southwestern HMA boundary adjoins the West Boone Draw Allotment which is permitted for domestic horses between December and May of each year.

The HMA boundary has numerous wire and metal gates. In the early spring, and extending through July, the southern and southeastern HMA has been experiencing an increase in recreational off-highway vehicle use. During archery and rifle season, between August and mid-October, the HMA is popular with large game hunters. Oil and gas development has also increased within the HMA. The increases in human traffic and activity has increased the

incidence of gates left open and consequently the number of wild horses that leave the HMA, as well as occasional incidents where domestic horses relocate inside the HMA.

Horses, livestock and wildlife in the HMA rely on a combination of developed wells, undeveloped springs and seeps and water reservoirs. Reservoirs are the primary source of water for all users and are widely dispersed through the HMA. In years when the HMA experiences below average precipitation, the majority of ponds dry up between July and whenever measurable precipitation accumulates in the fall. This results in wildlife either leaving the HMA or competing with wild horses for remaining water sources.

MONITORING DATA: See Appendix I for a summary of current range monitoring data. Wild horse census data is also contained in Appendix I.

PROPOSED ACTION AND ALTERNATIVES: This section of the EA describes the Proposed Action and alternatives, including any that were considered but eliminated from detailed analysis. Alternatives analyzed in detail include the following:

- Alternative 1 : Proposed Action - Population Management Action
- Alternative 2: Remove Excess Animals (Lower Limit of AML range). Do not implement Fertility Control Protocol
- Alternative 3: No Action Alternative (Defer Population Control)

Actions Common to Alternative 1 and Alternative 2

- All capture and handling activities would be conducted in accordance with the Standard Operating Procedures (SOPs) described in Appendix III. Several capture sites (traps) would be used to capture wild horses within the Sand Wash HMA. Whenever possible, capture sites would be located in previously disturbed areas. Capture techniques would be the helicopter-drive trapping method and/or helicopter-roping from horseback. Bait trapping may also be utilized on a limited basis, as needed.
- To the extent possible all horses found outside of the HMA boundaries would be removed rather than relocated due to the tendency of the animals to return to the area.
- An Animal and Plant Inspection Service (APHIS) veterinarian would be on-site, as needed, to examine animals and make recommendations to BLM for care and treatment of wild horses in accordance with Washington Office Instruction Memorandum (IM) 2006-23. (A copy of this IM can be reviewed upon request at the LSFO.)
- Selection of animals for removal and/or release would be guided by BLM's *Gather Policy and Selective Removal Criteria for Wild Horses* (Washington Office IM 2005-206, see Appendix VI).
- Horses that meet one or more criteria for euthanasia would be handled in accordance with Washington Office IM 2006-023 (See Appendix V).

Alternative 1: Proposed Action, Population Management Action: The Proposed Action is to gather approximately 90% (383 wild horses) or more of the current estimated wild horse population within the Sand Wash HMA (approximately 425) and remove enough horses to reach the low end of the appropriate management level, 163 horses. Ideally, the goal would be to gather 100% of the population, however there are usually several individual horses and bands that evade capture; thus, a reasonable gather target would be 90% of the population.

The total population for the HMA is based on a July 24, 2008 fixed-wing census flight. Of the animals gathered, approximately 238 excess wild horses would be removed and shipped to BLM holding facilities in Cañon City, Colorado. Once there, the horses would be prepared for adoption and/or sale to qualified individuals or sent to long term holding facilities. Horses would be targeted for removal in accordance with current BLM guidance for selective removals (see Appendix VI).

Thirteen (13) wild horses were found residing outside the boundary of the HMA during the July 2008 census flight. These animals would be gathered and shipped to Cañon City. The preference to ship the horses is based on the fact that these horses may be inclined to take up residence outside the HMA once again, if released.

Twenty (20) wild horses would be held in Craig, Colorado and offered for adoption shortly after the completion of the gather. Any horses not adopted would subsequently be shipped to Cañon City. Three mares would be transported to the Spring Creek HMA and released. A total of 261 horses would be removed from the HMA.

122 of the gathered wild horses would be returned to the HMA after the gather is completed. If possible, the sex ratio of the horses released back to the HMA will be as close to 50:50 as possible; 61 mares and 61 studs would be released. All the mares released would be subject to the fertility control research protocol. These mares would be inoculated with a 22 month pelleted PZP vaccine in accordance with Standard Operating Procedures as described in Appendix III. This vaccine would not impact foaling rates in the spring of 2009, but would take effect in 2010 and 2011. Late in 2010, a one or two year booster vaccine would be administered to those mares involved in the research study. This booster would be applied on the ground by trained personnel via a dart gun. This booster would further reduce foaling rates potentially through 2013. Each mare treated with PZP would be specifically and individually identifiable based on either freeze-marks or physical descriptions and photographs for later monitoring.

Approximately 42 horses would not be gathered for a variety of reasons, but mostly due to the increasing difficulty of gathering horses when only a few, widely scattered, bands remain left un-gathered. Of the 42 horses remaining, approximately 60%, or 25, would be mares. These mares would not be treated with the fertility control drug and would continue to reproduce as normal.

All of these numbers are estimates based on the best available data collected during past gathers, census flights and on the ground monitoring.

Alternative 2, Remove Excess Horses; No Fertility Control: Under this alternative, approximately 90% (383 wild horses) of the current estimated wild horse population within the HMA (425 wild horses) would be gathered. 122 of the gathered wild horses would be returned to the HMA after the gather is completed. If possible, the sex ratio of the horses released back to the HMA would be as close to 50:50 as possible; 61 mares and 61 studs would be released. In addition, a representation of horses from each age class would be released in order to create a stable age distribution after the gather is complete. Approximately 42 horses would not be gathered under this alternative; therefore the number of horses remaining in the HMA would be approximately 163 horses remaining in the HMA after the release of the gathered horses.

As in the Proposed Action, the 13 wild horses that are outside the HMA would be gathered and shipped to Cañon City.

Under this alternative, 20 horses would be held in Craig, Colorado for an adoption event, and three mares would be transported and released in the Spring Creek HMA. Approximately 238 wild horses would be transported to the BLM holding facilities in Cañon City, Colorado. Once there, the horses would be prepared for adoption and/or sale to qualified individuals or sent to long term holding facilities. Approximately 163 wild horses would remain in the Sand Wash HMA after the gathering operation is concluded.

Unlike the Proposed Action, any mares returned following the gather to the HMAs would not be subject to any form of fertility control. All other capture and handling activities would be the same as described for the Proposed Action.

Alternative 3, No Action: The No Action Alternative would be to defer gathering and removing animals. This alternative postpones direct management of the wild horse populations in the Sand Wash HMA. Wild horse populations throughout the west are estimated to increase at 15-25% per year. These populations may eventually reach equilibrium by regulating their numbers through periodic elevated mortality rates caused by drought, insufficient forage (starvation), water and/or space availability, disease, predation, or a combination of these environmental factors. Alternatively, a management action to reduce herd numbers may be evaluated and implemented at another time. The LSFO would continue habitat and population monitoring on the wild horse populations within the Sand Wash HMA.

The Wild Free-Roaming Horses and Burros Act requires the Bureau to prevent the range from deterioration associated with overpopulation of wild horses, and to preserve and maintain a thriving natural ecological balance and multiple use relationship in that area. The No Action Alternative would not comply with the 1971 Act or with applicable federal regulations and Bureau policy; nor would it comply with Colorado's Rangeland Health Standards and Guidelines for Livestock Grazing Management. For these reasons, **this alternative was eliminated from further consideration but is used for comparison in the population modeling; see Appendix II.**

Table 3. Comparison of Alternatives

Alternative	Number of Wild Horses Gathered	Number of Wild Horses Removed	Number of Wild Horses Released	Data Collection	Selective Removal Criteria Implemented	Fertility Control Used	Number of Mares Treated with Fertility Control	Number of Horses Remaining After Action
Alternative 1	383	261	122	Yes	Yes	Yes	~61	163
Alternative 2	383	261	122	Yes	Yes	No	0	163
Alternative C3 No Action Alternative	0	0	0	No	No	No	0	463

ALTERNATIVES CONSIDERED, BUT ELIMINATED FROM FURTHER ANALYSIS:

The possibility of a gather conducted without the implementation of age selection was considered. Under this strategy, fewer horses would have to be gathered; the first 300 horses gathered would be removed without regard to their age and adoptability. Fewer horses would be subjected to the stress of the gather activities; however, this alternative would not be in conformance with current Bureau Policy and was eliminated from further review.

AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES

CRITICAL RESOURCES

AIR QUALITY

Affected Environment: The air quality of the affected area is typical of arid and semi-arid rangelands in the inter-mountain region. Short-term and localized impacts resulting from fugitive dust can impair visibility and exasperate respiratory conditions. Existing sources of fugitive dust are from roads, trails and other disturbed soil surfaces, as well as, from the natural environment and other land uses that affect the balance of plant cover and bare soil surfaces that exists at specific sites.

Environmental Consequences, both alternatives: Short-term and localized impacts resulting from fugitive dust would be associated with different aspects of the gather. Dust in the air would be elevated by vehicle traffic, low-ground helicopter activities and by the horses when driven to the traps. The disturbed ground created by the horses along the drive routes and in the trap and corral areas would be a source of dusts in the short-term, when strong winds are present. Standard operating procedures require water to be applied to suppress dust in the trap and corral areas, reducing the hazard of dust. Dusts generated by implementing either of the alternatives would be localized and short-term. Physical and/or biological crusts would reform on the soil surface to stabilize the soil surface and reduce the generated fugitive dust with time. Impairment of regional air quality would not be expected to occur.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 05/03/08

AREA OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: None.

Name of specialist and date: Rob Schmitzer, 05/05/08

CULTURAL RESOURCES

Affected Environment: Cultural resources, in this region of Colorado, range from late Paleo-Indian to Historic. For a general understanding of the cultural resources in this area of Colorado, see *An Overview of Prehistoric Cultural Resources, Little Snake Resource Area, Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, and *An Isolated Empire, A History of Northwestern Colorado*, Bureau of Land Management Colorado, Cultural Resource Series, Number 2.

Environmental Consequences, both alternatives: Previously used trap locations for the 2005 horse gather in Sand Wash have undergone a Class III cultural resource survey. Many of the same trap sites would be used again in 2008; at the present time it is not known if additional traps would be needed. If new traps or other areas are needed, the following project specific mitigative measures will be used:

Additional new traps or areas of impacts will have a Class III cultural survey prior to being used. All cultural resources that are determined to be eligible or in the need data category will be avoided by all project activities.

Pursuant to 43 CFR 10.4(g) (Federal Register Notice: Monday December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone (970) 826-5087, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

The following standard stipulations apply for this project:

The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered

during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
- Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

Name of specialist and date: Robyn Watkins Morris, 05/01/08

ENVIRONMENTAL JUSTICE

Affected Environment: The Proposed Action is located in an area of isolated dwellings. Ranching, farming and oil/gas development are the primary economic activities.

Environmental Consequences, both alternatives: The project area is relatively isolated from population centers, so no populations would be affected by physical or socioeconomic impacts of the proposed or alternative actions. Neither alternative would directly affect the social, cultural or economic well-being and health of Native American, minority or low-income populations.

Mitigative Measures: None.

Name of specialist and date: Mike Andrews, 05/01/08

FLOOD PLAINS

Affected Environment: Small active and stable floodplain areas are present along South Sand Wash, upper Sand Wash and several other tributaries. Yellow Cat Wash and segments of lower Sand Wash do not have stable floodplain areas due to stream incisement, scouring runoff and unstable sandy soil conditions. None of these floodplains have developments associated with them, except for fences, windmills and unimproved roads.

Environmental Consequences, both alternatives: No adverse impacts are expected to occur to floodplain resources with implementation of the Proposed Action. Some beneficial impacts to the stability of floodplain areas may result from maintaining the wild horse herd at appropriate levels where available upland forage is allocated to them. Reducing the herd would result in fewer horses trampling on floodplain areas and grazing on forage resources when water is present in the drainages. No threat to human safety, life, welfare and property would result

from the Proposed Action under any of the alternatives.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 05/03/08

INVASIVE, NONNATIVE SPECIES

Affected Environment: Invasive and noxious weeds are present in the affected area. Invasive annuals such as downy brome (cheatgrass), halogeton, blue mustard and yellow alyssum commonly occur in the affected area and are occupying disturbed areas created by roads, ponds and rodents and areas of concentrated use by livestock and wild horses. These annual invasive plants are present within rangeland plant communities although their growth is usually suppressed by competition with established perennial plants. Biennial and perennial noxious weeds are less common in occurrence. Downy brome and halogeton are on the Colorado List C of noxious weeds. Colorado List B noxious weeds that are present within the Sand Wash Herd Management Area include hoary cress (whitetop), Canada thistle and other biennial thistles, as well as, perennial pepperweed, tamarisk and Russian olive along drainages or ponds. Other Colorado List B noxious weeds that are present in the vicinity and could potentially become established within the HMA include Russian knapweed, houndstongue, leafy spurge and dalmation toadflax. The BLM is in cooperation with the Moffat County Cooperative Weed Management program to employ the principals of Integrated Pest Management to control noxious weeds on public lands.

Environmental Consequences, both alternatives: The adverse impact of increased invasive and/or noxious weed establishment is very similar under either of the alternatives. Invasive annuals would likely be more noticeable in the areas near the traps and corrals in the short term due to trampling of perennial plants and reduced competition. If halogeton becomes established in these areas it should be aggressively treated. Reducing the wild horse herd to the lower end of the objective levels should reduce pressure on the forage resources and increase the vigor of established perennials making the plant community more resistant to all invasive and noxious weeds. However, vehicular access to public lands for dispersed recreation and grazing operations, livestock, wild horse and wildlife movement, as well as wind and water, can cause weeds to spread into new areas. Surface disturbance due to livestock and wild horse concentration and human activities associated with grazing operations and recreation can also increase weed presence. The perennial noxious weeds in the area are less frequently established on the uplands but some potential exists for their establishment in draws and swales with moister soils. The largest concern in the project area would be for biennial and perennial noxious weed species to become established and not be detected; once they are detected they can be controlled with various integrated pest management techniques. All principles of Integrated Pest Management will be employed to control noxious weeds on public lands.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 05/03/08

MIGRATORY BIRDS

Affected Environment: The Sand Wash Basin HMA provides habitat for the following migratory birds listed on the 2002 Birds of Conservation Concern list: Ferruginous hawk, golden eagle, Virginia warbler sage sparrow and pinyon jay. These species may be found throughout the HMA in a variety of habitats predominantly during the spring and summer although golden eagles may be found in the HMA throughout the year.

Environmental Consequences, both alternatives: Horse gather operations would have little to no impact on most of these species. Projected timing for the gather would be outside of the nesting and fledgling period further reducing potential for take to occur. Horse traps may result in the loss of some nesting habitat for brush and ground nesting birds. Less than 2 acres of habitat throughout the HMA would be lost as a result of these traps. The corrals would be located in an existing disturbance and would not result in the further loss of any nesting habitat.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny, 06/02/08

NATIVE AMERICAN RELIGIOUS CONCERNS

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council, and the Eastern Shoshone on May 5, 2007. The letter listed the grazing allotments up for renewal in FY09 and other projects occurring within the fiscal year. The letter included a map of the areas. A follow up phone call was performed on June 16, 2008. No comments were received (letter on file at the Little Snake Field Office). This project requires no additional notification.

Name of specialist and date: Robyn Watkins Morris, 06/16/08

PRIME & UNIQUE FARMLANDS

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen, 05/03/08

T&E SPECIES - SENSITIVE PLANTS

Affected Environment: There are no BLM sensitive plant species within the Sand Wash HMA. The Lookout Mountain ACEC, which bounds the HMA on the northwest, contains one BLM sensitive plant as well as rare plant associations. None of the identified locations of the

BLM sensitive plant are within the boundaries of the HMA.

Environmental Consequences, both alternatives: Gather activities would not impact any BLM sensitive plant communities.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim, 06/05/08

THREATENED AND ENDANGERED ANIMAL SPECIES

Affected Environment: The entire HMA is part of the black-footed ferret management area. Although no ferrets have been reintroduced to this area at this time, any ferrets introduced to this area would be designated as a non-essential experimental population. No other threatened or endangered species or habitat for such species exists, within the HMA boundary.

The HMA does provide habitat for white-tailed prairie dogs, mountain plover burrowing owl and greater sage grouse and roosting habitat for bald eagle. All five species are BLM special status species.

Environmental Consequences, both alternatives: Wild horse holding pens at trap locations could have a negative impact on sage-grouse leks and nesting habitat. Traps should be located 2 miles from known sage-grouse lek sites. There would be no impact to bald eagles or black-footed ferrets.

Mitigative Measures: Locate horse traps at least two miles away from known sage-grouse lek sites. The BLM COR/PI will be provided with maps indicating the locations of known sage-grouse lek sites.

Name of specialist and date: Timothy Novotny, 06/02/08

T&E SPECIES – PLANTS

Affected Environment: There are no federally listed threatened or endangered plant species within the Sand Wash HMA.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim, 06/05/08

WASTES, HAZARDOUS OR SOLID

Affected Environment: Not applicable.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Kathy McKinstry, 06/09/08

WATER QUALITY - GROUND

Affected Environment: Present but not impacted.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Marilyn D. Wegweiser, 04/15/08

WATER QUALITY - SURFACE

Affected Environment: Runoff water drainage from the Sand Wash HMA flows to ephemeral draws that are tributaries of Sand Wash, which is an ephemeral tributary of the Little Snake River. The water quality of the Little Snake River needs to support Aquatic Life Warm 2, Recreation 1a and Agriculture. The tributaries of this segment of the Little Snake River need to support Aquatic Life Cold 2, Recreation 2 and Agriculture; the tributaries are designated as use protected. An assessment conducted in February 2002 found that the Little Snake River was fully supporting Aquatic Life Warm 2 and Agriculture, but it was not assessed for Recreation 1a (primary contact). Tributary streams have not been assessed for attainment status, but are not suspected of any impairment.

Environmental Consequences: Alternatives 1 and 2 would each be considered to be Best Management Practice that would reduce contributions of non-point pollutants to surface waters. The carrying capacity of the affected area is sufficient to support the population objectives, however it must still be balanced with the other grazing animals the HMA supports to ensure that sufficient forage exists to maintain or improve the current conditions and meet Land Health Standards. The gather and any related fertility control of the wild horse herd would have positive effects on water quality.

Mitigative Measures: None

Name of specialist and date: Ole Olsen, 05/03/08

WETLANDS/RIPARIAN ZONES

Affected Environment: Some isolated and discontinuous riparian systems are present in the affected area. These resources are usually associated with springs and seeps and would be

largely dependent on alluvial and ground waters to maintain these limited resources. Not all of the riparian systems within the affected area have been formally documented, but there are segments along Sand Wash, South Sand Wash, and Yellow Cat Wash that have streambanks lined with baltic rush and point-bars having coyote willow or associated flood plains with inland saltgrass. A few of the stream segments along Sand Wash have baltic rush on one streambank and rabbitbrush-wheatgrass on the opposite streambank. These occur below the confluences of Yellow Cat Wash and Dugout Draw.

Lotic riparian zones are limited to the southeast portion of the HMA that follows the Little Snake River. Several short reaches of the Little Snake River are along the HMA boundary. At the time of the last assessment, these reaches were classified as functioning at risk.

Environmental Consequences: Activities associated with the wild horse gather would not have an impact on any riparian systems within the HMA. Reducing the numbers of horses within the HMA would help ensure that these riparian systems are not degraded as a result of wild horse use.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny, 06/02/08

WILD & SCENIC RIVERS

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable.

Name of specialist and date: Rob Schmitzer, 05/05/08

WILDERNESS, WSAs

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Rob Schmitzer, 05/05/08

NON-CRITICAL ELEMENTS

RANGE MANAGEMENT

Affected Environment: The HMA encompasses portions of the Sand Wash #04219, Sheepherder Springs #04217, Nipple Rim #04213, and Lang Spring #04212 Allotments. In the Sand Wash Allotment, the Sand Wash Pasture is the portion within the HMA and is permitted for 6,377 AUMs of winter and spring sheep use. In the Sheepherder Springs Allotment, the Sheepherder Pasture is the portion within the HMA and is permitted for 7,600 AUMs of winter and spring sheep use and 499 AUMs of fall cattle use. In the Nipple Rim Allotment, the south half is within the HMA. The allotment is permitted for 4,900 AUMs of fall, winter, and spring sheep use, with roughly half of that use occurring in the HMA. The entire Lang Spring Allotment is within the HMA and is permitted for 363 AUMs of fall, winter, and spring sheep use.

As explained further in Appendix I, actual use by livestock has been substantially less than permitted use (in most cases, up to 60-75% of the AUMs were not utilized). This voluntary non-use began in the late 1990s and continues through the present. The non-use has primarily been a result on the ongoing drought and high numbers of wild horses.

The HMA boundary is fenced. This fence also serves as allotment and pasture boundary fencing for some of the allotments in the HMA. No interior fencing exists within the HMA. Numerous water developments are located throughout the HMA. Water developments include stock ponds, wells, and developed springs.

Environmental Consequences, both alternatives: The proposed gather, which is consistent with the AML and gather schedule set forth in 2001, would reduce year-round grazing pressure, reduce competition for water, and improve the ability of forage plants to recover from adverse environmental conditions such as drought. The gather would also improve the ability of livestock operators within the HMA to plan stocking rates, areas of use, and trailing routes to strike a balance between wild horse and livestock use of the forage, soil, and water resource.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim, 06/05/08

SOILS

Affected Environment: Soils in the Sand Wash Basin have been derived from the Bridger Formation, which is comprised of sandstone, claystone and conglomerate. This was deposited during the late Eocene in large inland lakes, which were saline. Consequentially, the surface soils are generally fine sandy loams with clay loam to sand subsoils. The soils are moderately to strongly alkaline, generally very slightly saline and mostly shallow to moderately deep. Available water holding capacity of the soils is generally low to very low.

Environmental Consequences, both alternatives: The carrying capacity of the affected area is sufficient to support the population objectives, however it must still be balanced with the other grazing animals the basin supports to ensure that sufficient forage exists to maintain or improve the current conditions and meet Land Health Standards.

The capture of horses would occur along existing horse trails and conclude in traps. During the gather some additional disturbance to soils and vegetation adjacent to the trails would occur. Aggregate structure can be destroyed, deep hoof prints could modify and influence surface drainage, additional compaction of the soil and trampling of vegetation can result. The degree of these impacts would be dependent on soil moisture conditions, the concentration of horses, and the amount of time, horses are present.

Therefore, the most severe impacts to the soil resource would be expected near and in the traps and holding corrals. Dry soil conditions at the time of the gather would decrease the potential for compaction and deep hoof prints, but soil particles would be more susceptible to wind erosion due reduced aggregate stability. These impacts to the soil resource would be localized and generally short-term, unless severe adverse climatic conditions followed shortly after the gather, which would displace or remove soil materials by wind or water erosion. The trap areas should be monitored the following growing season to insure that the native perennial plant community would be capable of maintaining adequate soil cover to prevent wind or water erosion. If this capability has been lost or significantly reduced then the trap area would need to be revegetated.

Mitigative Measures: The trap areas should be monitored the following growing season to determine if the native plant community will provide adequate cover for the soil resource. Revegetation of these areas will be needed if the native plant community is not capable of protecting the soil resource.

Name of specialist and date: Ole Olsen, 05/03/08

VEGETATION

Affected Environment: The Sand Wash HMA is dominated by sagebrush-grass and salt desert shrub plant communities. The two communities are intermixed and form a complex of range sites with saltbush dominating on the clayey sites and sagebrush dominating on the loamy sites. There is also a small amount of juniper woodland in the northeasterly and southerly portions of the HMA. Dominant shrub species include Wyoming big sagebrush, shadscale, Nuttall's saltbush, winterfat, rabbitbrush, budsage, basin big sagebrush, greasewood, and gray horsebrush. Dominant grass species include needleandthread, Indian ricegrass, bottlebrush squirreltail, Sandberg bluegrass, western wheatgrass, bluebunch wheatgrass, and prairie junegrass. Dominant forbs include stemless goldenweed, buckwheat, *Penstemon* spp., *Astragalus* spp., *Lupinus* spp., Hood's phlox, and arrowleaf balsamroot. Cheatgrass and halogeton are present in varying levels throughout the HMA. Vegetation density and productivity increase towards the northerly end of the HMA due to increasing elevation and precipitation.

Environmental Consequences, both alternatives: Impacts to vegetation with implementation of the Proposed Action would include disturbance of native vegetation immediately in and around temporary trap sites and holding facilities. Impacts created by vehicle traffic, and hoof action of penned horses would be locally severe in the immediate vicinity of the corrals and holding facilities. Generally, these activity sites would be small (less than one half acre) in size and these impacts would remain site specific and isolated in nature. In addition, most trap sites or holding facilities are selected to enable easy access by transportation vehicles and logistical support equipment and would therefore generally be adjacent to or on roads, pullouts, water haul sites, or other flat spots which possess an increased likelihood of having been previously disturbed, thereby minimizing the cumulative effects of these impacts.

Reducing the herd size to the lower end of AML, or 163 horses, would decrease the level of forage use by horses throughout the HMA. There is limited competition for available forage between wild horses, wildlife, and domestic sheep. Domestic sheep, particularly during the winter, favor sagebrush, saltbush, and other shrubs (Stoddart 1955). Sheep shift strongly to forbs in the spring and early summer, but domestic sheep use in the HMA is primarily in the winter. Elk and pronghorn antelope favor shrubs heavily, particularly during the winter, but also utilize grasses throughout much of the year (Martin 1951). Horses are strongly selective for grasses, utilizing them almost exclusively throughout most of the year (Urness 1990, Stoddart 1955). In the past four years, utilization of key forage species has been within the acceptable limits of 50% on grass species and 40% on browse species with a few exceptions, though there has been trend data that suggests consistent year-long utilization of grasses, particularly during drought, has suppressed perennial grasses (refer to Appendix I).

Between 2001 and the late fall of 2007, the HMA, along with most of northwest Colorado, endured one of the driest periods on record. During this time, significant reductions in livestock use occurred on the allotments within the HMA and this lessened stress on the plant community and enhanced their ability to recover under wetter conditions. Although drought conditions have eased over the HMA as of the spring of 2008, drought recovery continues and the need to balance forage use with forage recovery is even more critical. While an increase in vigor and overall growth of existing forage plants has been noted, there are fewer surviving individual plants and, therefore, less available forage. Grazing by horses at the current intensity during drought recovery can damage surviving plants and would ultimately lead to a much longer period of recovery. Assuming precipitation conditions continue their upward trend, this first year after the drought needs to contain management actions aimed at improving plant vigor and restoring protective residual vegetation and plant litter (Howery 1999).

The Proposed Action would maintain the current AML range and possibly extend the four year gather cycle to a six year cycle. Therefore it would still be a valuable management tool to assist the planning efforts of the livestock operators in planning for proper use of the forage resource in balance with the wild horse herd as precipitation trends improve. Gathering wild horses to return the population to 163 horses would be beneficial to the plant communities throughout Sand Wash, particularly as the recovery from the drought continues and plants continue rebuilding their root masses and recruiting new individuals. Gathering horses on a less frequent basis while still not exceeding the upper end of AML would mean that the vegetation in and around the

temporary trap sites is disturbed less often.

Mitigative Measures: None

References:

Martin, A.C., H.S. Zim, and A.L. Nelson. 1951. American wildlife and plants: a guide to wildlife food habits. Dover Publications. New York. 500 pp.

Urness, P. 1990. Livestock as manipulators of mule deer winter habitats in northern Utah. Pages 25-40 *in* K.E. Severson, tech. coord. Can livestock be used as a tool to enhance wildlife habitat? U.S. Forest Service Gen. Tech. Rep. RM-194.

Stoddart, L.A. and A.D. Smith. 1955. Range Management. 2d ed. McGraw-Hill. New York. 433 pp.

Howery, L. 1999. Rangeland management before, during, and after drought. The University of Arizona Cooperative Extension, Publication AZ1136. Tucson. 6 pp.

Name of specialist and date: Hunter Seim, 06/06/08

WILDLIFE, AQUATIC

Affected Environment: The Little Snake River along the southeast boundary of the HMA provides the only aquatic wildlife habitat within the HMA.

Environmental Consequences, both alternatives: The Proposed Action would not have any impact on aquatic wildlife species or their habitat within the HMA.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny, 06/02/08

WILDLIFE, TERRESTRIAL

Affected Environment: The HMA provides year round habitat for mule deer, elk and pronghorn antelope including severe winter range. Severe winter range is defined as areas within the winter range where 90% of the individuals are located when annual snow pack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten.

A variety of reptiles and small mammals may also be found throughout the HMA.

Environmental Consequences, both alternatives: A reduction in horse numbers resulting from the gather would have a positive impact on big game habitat in the HMA and would reduce competition between big game and wild horses.

Horse gather activities may temporarily displace some small mammals and reptiles. Individuals that are capable of avoiding heavy use areas would be temporarily displaced but should return once the gather is completed. A short-term negative impact to individual animals can be expected. The reduction in horse numbers would have a positive impact on habitat for reptiles and small mammal species. By keeping horse numbers down, less habitat damage from horses would be expected. This positive impact would outweigh any negative impacts associated with the gather activities.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny, 06/02/08

WILD HORSES

Sand Wash Wild Horse Herd

Affected Environment: The earliest BLM wild horse census took place in 1971 and was completed using a fixed-wing aircraft. The flight documented 65 wild horses. Since 1971 herd numbers have risen as high as 418 in 1988, and 455 horses in 1995. BLM has completed six (6) capture operations between 1988 and 2005 with a total of 1,134 horses removed from the herd. The following table summarizes the age ratios of animals gathered between 1988 and 2005. The number gathered does not equal the number removed since select horses are returned to the range during each gather activity.

AGE of HORSES GATHERED	1988¹ Number/percentage	1995^{2,6} Number/percentage	1998^{2,6} Number/percentage	2001³ Number/percentage	2005⁴ Number/percentage
0	42/20%	62/19%	50/26%	76/24%	64/25%
1	29/14%	13/4%	2/1%	28/9%	37/14%
2	46/22%	32/10%	25/13%	52/17%	47/18%
3	19/9%	72/22%	29/15%	29/9%	34/13%
4	5/2%	43/13%	11/6%	14/5%	10/4%
5	5/2%	11/3%	2/1%	8/3%	6/2%
6	5/2%	10/3%	7/4%	13/4%	13/5%
7	6/3%	23/7%	9/5%	14/5%	10/4%
8	7/3%	10/3%	6/4%	3/1%	8/3%
9	7/3%	5/1%	4/2%	4/1%	7/3%
10	8/4%	6/2%	10/5%	9/3%	2/.7%
11	2/1%	12/4%	5/3%	13/4%	2/.7%
12	4/2%	6/2%	6/4%	8/3%	2/.7%
13	2/1%	7/2%	3/1%	5/2%	1/.4%
14	0/0%	4/1%	2/1%	2/1%	0/0%

AGE of HORSES GATHERED	1988¹ Number/percentage	1995^{2,6} Number/percentage	1998^{2,6} Number/percentage	2001³ Number/percentage	2005⁴ Number/percentage
15	8/4%	5/1%	5/3%	4/1%	4/2%
16	8/4%	1/.5%	2/1%	1/.5%	1/.4%
17	1/.5%	3/1%	0/0%	2/2%	1/.4%
18	1/.5%	2/1%	3/1%	6/2%	3/1%
19	0/0%	0/0%	2/1%	3/1%	1/.4%
20 and older	4/3%	3/5%	7/3%	17/4%	5/2%
TOTALS	209	330	190	311	261

¹ The 1988 gather was not age selective and is baseline data for the herd.
² The 1995 and 1998 gathers were age selective with horses 9 years and younger removed.
³ The 2001 gather was age selective with horses under 6 and over 9 years removed.
⁴ The 2005 gather was age selective with horses between the ages of 0 and 5 removed.
⁵ Horses older than 20 years and horses determined poor candidates to withstand the stress of capture, holding, and transport were returned to the HMA regardless of age in 1995; '98; and '01.
⁶ The low percent yearlings documented in 1995 and 1998 suggests an error in aging the gathered horses.

As of the 2005 gather, following three age selective gather operations, the Sand Wash herd has retained a desirable age structure. The majority of horses captured in 2005 were under 5 years old and horses were present in each age category. The herd sex ratio over the past twenty years has been skewed slightly in favor of females. At the end of the proposed gather operation, a sex ratio closer to 50:50 males to females would remain.

Genetic testing from a representative sample of horses gathered during the 1995 and 2001 gathers suggests the Sand Wash herd has the highest genetic variation of any herd in Colorado with a value well over the mean for domestic and wild horses. The analysis revealed no sign of inbreeding or genetic mixing in the population; that is, no one animal tested had a type that was obviously different from any other horse tested in the herd. The highest similarity for the herd was to the Iberian derived Spanish breeds. The next greatest similarity was to the gaited, North American breeds and the Arabian breeds. The Sand Wash herd showed little relationship to any of the other Colorado wild horse populations, with the closest relationship seen toward the Bookcliffs herd.

Current selective removal criteria dictate the age of horses that can be removed from the herd. Every attempt would be made to comply with the current policy, however some older wild horses would be removed in order to release younger horses to obtain a desirable age distribution in the HMA. The majority of horses removed from the HMA would be under 5 years of age; therefore the younger age classes remaining in the HMA after the proposed gather action would be slightly under represented. Following the 2008 gather, the herd demographics are not expected to be disturbed until 2013 or beyond, depending on the success of the fertility control in

slowing foal recruitment; therefore a more typical age distribution would be expected to return over time.

An average of 23% of horses gathered in this herd between 1988 and 2005 were under one year of age. When compared with the 1988 baseline data, where 20% of the animals gathered were foals, herd foal composition during the last 20 years appears to have remained relatively stable.

Gather Year	% of horses gathered that were less than 1 year old	% of horses gathered that were over 1 year
1988	20%	80%
1995	19%	81%
1998	26%	74%
2001	28%	72%
2005	23%	77%

The following table itemizes the range and frequency of colors recorded in this herd during the 4 gather operations:

COLOR	1989 %	1995 %	1998 %	2001 %	2005¹ %
Bay	23%	13 %	11 %	19%	13%
Grey	15 %	25 %	25 %	22%	19%
Red Roan	17 %	7 %	13 %	8%	7%
Sorrel	13 %	24 %	19 %	11%	17%
Blue Roan	6 %	4 %	.5 %	0%	1%
Brown	5 %	4 %	3 %	4%	4%
Black	5 %	2 %	2 %	7%	8%
Paint	4 %	11 %	13 %	14%	11%
White	4 %	0%	0%	0%	0%
Buckskin	2 %	3 %	6 %	2%	3%
Palomino	1 %	3 %	2 %	1%	0%
Chestnut	1 %	3 %	9 %	7%	11%
Dun	1 %	1 %	.5 %	3%	2%
Grulla	0%	0%	0%	2%	2%

¹ - Data is missing on the color of 9 older stud horses released back into the herd.

Color variations in the Sand Wash herd have remained widely diversified between 1988 and 2005. There has been an increase in paints and uniquely colored gray horses in the herd. This could reflect the emphasis in selecting those horses that are highly desirable because of their unique color to be returned to the breeding herd in order to create exceedingly adoptable animals in the future.

Environmental Consequences, Proposed Action: Under the Proposed Action, the post-

gather population of wild horses within the Sand Wash HMA would be about 163. The post-gather number represents the lower limit of the AML range.

Under this alternative, all mares gathered and then selected for release back to the HMA would be treated with the PZP vaccine prior to their release. The mares treated would equal approximately 75% (61 mares) of post-gather mare population (approximately 21 mares would never be gathered and therefore, not treated). Each of these mares, if pregnant, would be expected to foal normally during the 2009 foaling season. The initial treatment of PZP would be expected to slow population growth starting in 2009 and be effective through 2010. The mares initially treated during the gather in October, 2008, would be given a booster treatment of PZP in late summer or early fall of 2010. The booster would be administered by trained personnel via a dart. The horses would be darted from the ground; no further handling or use of aircraft to administer the booster is anticipated. This booster is expected slow foaling rates for possibly another 22 months, depending on which formulation of the vaccine is available. Under this alternative the projected wild horse population would not be expected to exceed the current upper limit of the AML range until approximately seven years following the gather (about 2015). The projected growth rate used in Table 5 below was derived from the population modeling located in Appendix II for year one, then adjusted for the following 4 years thereafter to account for the projected effectiveness of the fertility control drug.

Current BLM policy (IM 2005-206, see Appendix VI) directs the field offices to places emphasis on removing the younger, more adoptable horses from the range. Every attempt would be made to adhere to this policy and analysis of herd demographics predicts that the low end of AML could be reached by removing only horses 5 years of age and younger. However, a stable age distribution should remain in the HMA after the gather to ensure the health of the herd; therefore, if possible, some animals from each age class would be returned to the HMA after the gather.

Proposed Action – Sand Wash HMA Projected Population Size

	2009	2010	2011	2012	2013	2014	2015
Fertility Control Efficiency %	0%	94%	82%	94%	82%	0%	0%
Foaling Rate %	20% ¹	7.6%	10%	7.6%	10%	20%	20%
HMA Population	196	211	232	250	275	330	396
1– the vaccine does not affect mares that are already pregnant, therefore, the foaling rates during the first year of the vaccines' effectiveness are not reduced.							

These figures are estimates based on the best available data.

Impacts associated with gathering wild horses are well documented. Gathering wild horses causes direct impacts to individual animals such as stress, fear or confusion due to gather activities. These impacts may occur as a result of handling stress associated with the gather, capture, sorting, and transportation of animals. The intensity of these impacts varies by

individual and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individuals from this impact is infrequent but does occur in one half to one percent of wild horses gathered in a given gather. Other impacts to individual wild horses include separation of members of individual bands of wild horses and removal of animals from the population.

Indirect impacts can occur to wild horses after the initial stress event, and may include increased social displacement, or increased conflict between animals. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries may occur, and typically involve biting and/or kicking bruises, which don't break the skin. The occurrence of spontaneous abortion events among mares following capture is rare but does occasionally happen.

Mares treated with fertility control would be studied as part of BLM's ongoing fertility control research. For more information about BLM's fertility control research, refer to: <http://www.fort.usgs.gov/WildHorsePopulations/default.asp>

Mares receiving the fertility control inoculation would experience slightly increased levels of stress from additional handling while they are being inoculated and possibly freeze-branded. There would be potential additional indirect impacts to animals at the isolated injection site following the administration of the fertility control vaccine. In general, the safety of PZP on horses has been well-established. Abscesses and reactions, in general, at the injection-site are extremely rare, especially when the vaccine is hand-injected. Administration of the PZP vaccine would be done by trained and qualified personnel from the HSUS and the BLM. For monitoring purposes, wild horses treated with the PZP vaccine may be identified by a freeze-mark, which would be assigned by the National Program Office prior to the proposed gather. If HSUS is able to positively identify each mare involved in the study through the use of photo-identification, then freeze-branding may not be necessary.

Environmental Consequences, Alternative 2, Remove Excess Horses, No Fertility Control: Under Alternative 2, the post-gather population of wild horses within the Sand Wash HMA would be approximately 163. The post-gather number represents the lower limit of the AML range.

Under this alternative, all released mares would foal normally. Based on a normal projected population increase (20%), wild horse numbers are expected to exceed the upper limit of the AML range four years following the gather (about 2013). Horses would be gathered more frequently under this alternative as they would exceed the upper end of AML sooner than under Alternative 1.

Alternative 2 – Sand Wash HMA Projected Population Size

Foaling Rate %	2009	2010	2011	2012	2013	2014	2015
	20%	20%	20%	20%	20%	20%	20%
HMA Population	196	235	282	338	405	486	583

Mitigative Measures: None.

Name of specialist and date: Kathy McKinstry 07/15/08

OTHER NON-CRITICAL ELEMENTS: For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Fluid Minerals		MDW 04/15/08	
Forest Management		KLM 06/09/08	
Hydrology/Ground		MDW 04/15/08	
Hydrology/Surface		OO 06/09/08	
Paleontology		MDW 04/15/08	
Range Management			JHS 06/05/08
Realty Authorizations		MAA 05/01/08	
Recreation/Travel Mgmt		RS 05/05/08	
Socio-Economics		MAA 05/01/08	
Solid Minerals		JAM 005/01/08	
Visual Resources		RS 05/05/08	
Wild Horse & Burro Mgmt			KLM 5/01/08

CUMULATIVE IMPACTS SUMMARY:

The area affected by Alternative 1 and 2 and the No Action Alternative is the area in and around the Sand Wash HMA. Please refer to Attachment 1 which displays a map of the affected area. Past, proposed and reasonably foreseeable actions that may impact the Sand Wash wild horse herd could include past and future wild horse gathers and the initial application of fertility control. Over time, as wild horse population levels are maintained within the AML range, a thriving natural ecological balance would also be achieved and maintained.

Other reasonably foreseeable actions within the affected area may include mining, oil & gas exploration, recreational activities, such as off-road vehicle use, livestock grazing, range projects, and vegetation monitoring. The BLM would continue to conduct the necessary monitoring to periodically evaluate the effects of grazing use by wild horses, livestock, and wildlife, and to determine if the Standards for Rangeland Health continue to be met. Monitoring would be in accordance with BLM policy as outlined in BLM technical references and handbooks. However, cumulative beneficial effects from the Proposed Action and Alternative 2 are expected and would include continued improvement of the range condition and riparian-

wetland condition, which in turn positively impact wildlife, wild horse populations, and forage quality and quantity would be maintained and improved. Water quality and riparian habitat would also continually improve.

Under the No Action Alternative, wild horse populations would continue to increase and cause impacts to the wildlife habitat from the periodic excessive use by wild horses at riparian areas and in rangeland vegetation. Direct cumulative impacts of the No Action Alternative, coupled with the impacts from past, present, and reasonably foreseeable actions, would preclude any improvement to the health of vegetative communities and the ecological condition of the range as a whole. As a result, the No Action Alternative coupled with many of the past, present, and reasonably foreseeable actions would hinder success in attaining RMP objectives and Standards for Rangeland Health.

STANDARDS

PLANT AND ANIMAL COMMUNITY (plant) STANDARD: Much of the HMA is meeting this standard, however some areas are deficient in abundance of perennial grasses, have poor recruitment of perennial plants, and exhibit poor vigor. Causative factors are mostly related to drought, and proximity to animal concentration areas such as water sources. An increase in precipitation has resulted in some improvement of the vegetative resource since 2002. Lessened pressure from livestock and wild horses (since the 2005 gather) has also been beneficial. Given that Alternatives 1 and 2 would again gather wild horses down to the lower end of AML, it would meet this standard where it is currently being met and make progress towards meeting this standard where problems have been noted. Alternative 1 would further benefit and aid the HMA's progress towards meeting standards where they are currently not met by slowing the overall herd growth and providing more lengthy periods of reduced grazing pressure.

The No Action Alternative would allow the wild horse population to continue to increase and put greater pressure on the plant communities within the HMA. Unchecked population growth would put greater and greater pressure on the forage resource. A deteriorating forage resource would become a limiting factor for the herd through reductions in plant vigor, deterioration of diversity, and abundance of key forage species. The No Action Alternative would not meet this standard.

Name of specialist and date: Hunter Seim, 08/28/08

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant) STANDARD: There are no federally listed threatened or endangered or BLM sensitive plant species within the HMA. This standard does not apply.

Name of specialist and date: Hunter Seim, 06/06/08

RIPARIAN SYSTEMS STANDARD: Operations associated with the horse gather would not impact riparian systems. The Proposed Action would ensure that wild horses do not over utilize riparian resources throughout the HMA. Under the Proposed Action this standard would be met throughout the HMA.

Impacts on riparian systems associated with Alternative 2, horse gather without fertility control, would be similar to those of the Proposed Action however the benefits to riparian resources due to reduced horse numbers would be decreased as the horse population would increase at a faster rate. However, Alternative 2 would allow this standard to be met in the future.

The No Action Alternative would allow the wild horse population to continue to increase to levels greatly above AML. Extremely large numbers of horses would be concentrated around a limited number of seeps and springs in the HMA which would lead to soil compaction, bank trampling, increased erosion, and over-utilization of riparian plants. The No Action Alternative would not meet this standard.

Name of specialist and date: Timothy Novotny, 06/02/08

WATER QUALITY STANDARD: The water quality standard is met under either alternative. All stream segments are supporting the classified uses and no stream segments are considered to be impaired. Limiting the number of horses under each of the alternatives would enhance the management of all grazing animals in the basin and utilization of the limited forage resources. The management of the wild horse herd and gathering operations to remove excess horses are considered to be Best Management Practices, which would help to maintain forage and plant cover, ultimately controlling or reducing the amount of sediment in runoff waters. Any fertility control that results would reduce the rate of herd growth and should also promote healthier plant communities, stable soils and less sediment in runoff waters.

The No Action Alternative would allow the wild horse population to continue to increase until natural herd regulating forces (e.g., disease, starvation, and dehydration) reduce the population. This alternative would allow degradation of upland, floodplain and riparian resources to occur. It would be anticipated that accelerated erosion caused by the increasing horse population would increase sediment, nutrients and other non-point source pollutants delivered to the Little Snake River from the Sand Wash Basin. Water quality of the Little Snake River may still continue to support the classified uses, but if non-point source contamination becomes a substantial contribution from Sand Wash, it is likely that the water quality of this ephemeral tributary of the river would fail to support its classified uses and eventually be listed as impaired. The No Action Alternative would not meet this standard.

Name of specialist and date: Ole Olsen, 05/03/08

UPLAND SOILS STANDARD: The upland soils standard is met under either alternative. The soil disturbance that would occur along the gather trails and traps would be short-term and somewhat confined. Revegetation of the trap areas may be needed if the native plants have been trampled and do not persist on the site the following growing season. The forage resource is sufficient to support the wild horse herd in the basin and provide the needed cover for upland soils. Upland soils would continue to have diverse plant communities for upland soil health provided that wild horse herd population objectives are maintained.

The No Action Alternative would allow the wild horse population to increase beyond the forage allocated to the wild horse herd. Increased allocations of forage would be required for the horse herds and subtracted from livestock and wildlife allocations. Eventually, the horse herds could increase beyond the total forage capability of the HMA, but grazing dominated by the wild horses would likely reveal grazing distribution problems much sooner. Areas of depleted perennial grass cover would increase in size and be replaced with cheatgrass and other annual weeds. Increased erosion of the upland soil resource would occur in these areas over time as the conversion to plants that are less capable of protecting soils proceeds. Eventually upland soil health will be diminished over large areas within the Sand Wash Basin. The No Action Alternative would not meet this standard.

Name of specialist and date: Ole Olsen, 05/03/08

PLANT AND ANIMAL COMMUNITY (animal) STANDARD: The affected environment provides suitable habitat for a variety of wildlife species. The capture and removal of wild horses and activities associated with the capture project have the potential to cause minimal impacts to wildlife in Sand Wash Basin. Wildlife habitats within the HMA would benefit from reduced horse numbers. Under the Proposed Action this standard would be met.

Impacts to animal communities as a result of Alternative 2 would be similar to those of the Proposed Action. However, benefits to wildlife habitats by reduced horse numbers within the HMA would be decreased due to the faster population growth without the use of fertility control. Under Alternative 2 this standard would be met.

The No Action alternative would allow the wild horse population to continue to increase, placing increased pressure on plant communities in the HMA. Deteriorated forage resources, seen as reductions in plant vigor, and deterioration of key species diversity and abundance, would become a limiting factor for wildlife in Sand Wash Basin. The No Action Alternative would not meet this standard.

Name of specialist and date: Timothy Novotny, 06/02/08

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD: All threatened, endangered species and special status species would continue to have sufficient habitat within the HMA to ensure stable healthy populations. Under the Proposed Action this standard would be met.

All threatened, endangered species and special status species would continue to have sufficient habitat under Alternative 2. Benefits to habitats by reducing the horse population within the HMA would last longer due to slower population growth. This standard would be met under Alternative 2.

No Action Alternative: The No Action alternative would allow the wild horse population to increase, an action expected to result in overuse of the range resources by wild horses. Deteriorated forage, water and cover resources would become a limiting factor for special status,

threatened and endangered species in the Sand Wash HMA. The no action alternative would not meet this standard.

Name of specialist and date: Timothy Novotny, 06/02/08

PERSONS/AGENCIES CONSULTED: A letter was sent to the interested public on May 22, 2008, informing them of the Proposed Action and the availability of this EA. Two public hearings were held at the Little Snake Field Office in Craig, CO; the first was July 10, 2008 and the second was on July 29, 2008. Two members of the public gave the BLM comments during the July 29 meeting: Dave Hillberry and Rene Littlehawk Calicure. A copy of the letter and the transcripts from the public hearing are available at the Little Snake Field Office upon request.

SIGNATURE OF PREPARER:

DATE SIGNED:

SIGNATURE OF ENVIRONMENTAL REVIEWER:

DATE SIGNED:

FONSI

The environmental assessment, analyzing the environmental effects of the Proposed Action, has been reviewed. With the implementation of the attached mitigation measures there is a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the Proposed Action.

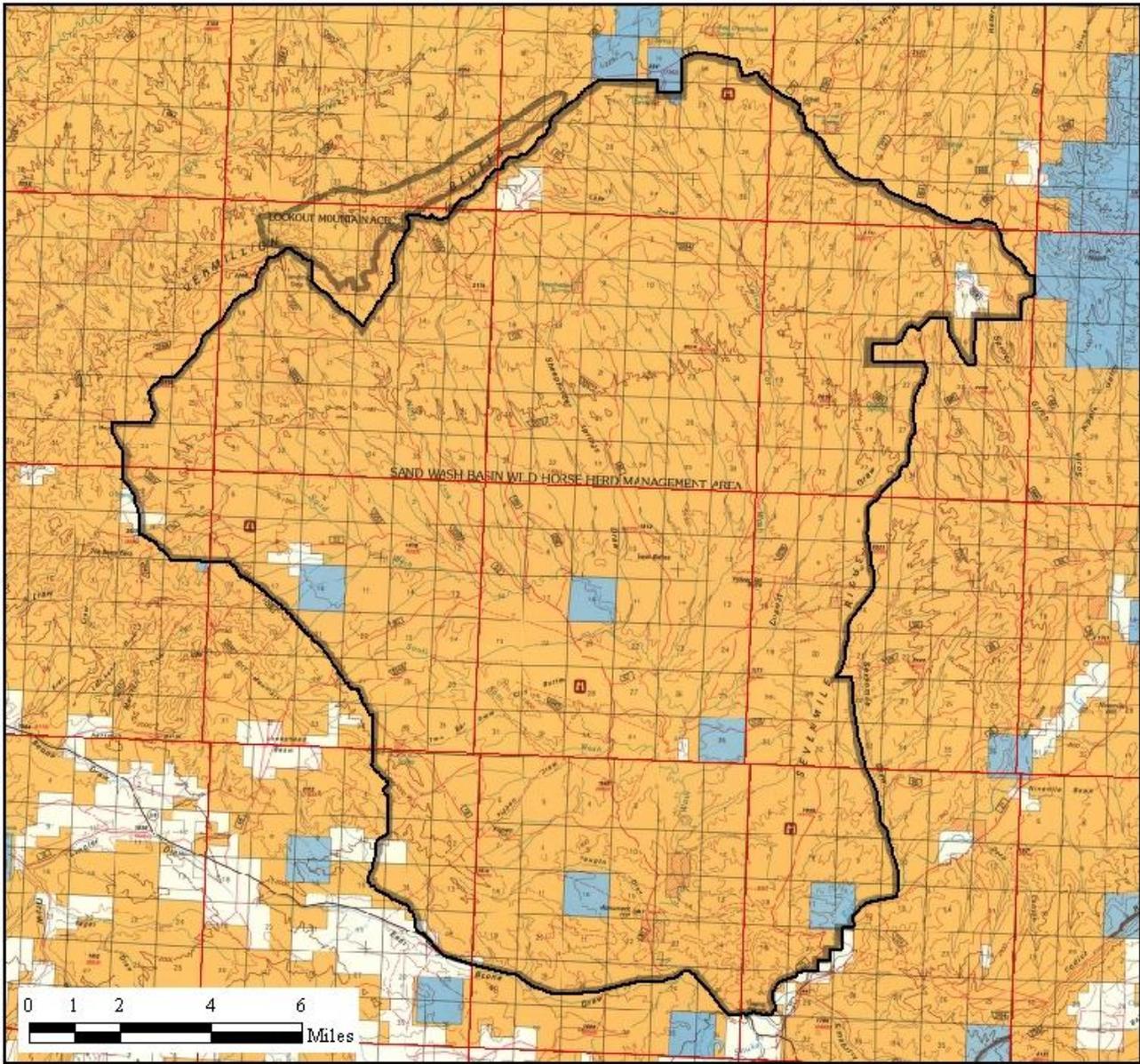
1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.
2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern.
4. There are no highly controversial effects on the environment.
5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.
6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State or local natural resource related plans, policies or programs.
7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.
8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.
9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.
10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

DECISION AND RATIONALE: It is my decision to authorize the gather of approximately 383 wild horses and removal of approximately 261 excess wild horses from the Sand Wash wild horse Herd Management Area. Further, it is my decision to gather and remove approximately 13 horses from allotments adjoining the Herd Management Area where Sand Wash wild horses have relocated into locations never recognized as being a part of the Sand Wash HMA. It is also my decision to implement the use of the fertility control drug, PZP, as described in the Proposed Action.

SIGNATURE OF AUTHORIZED OFFICIAL:

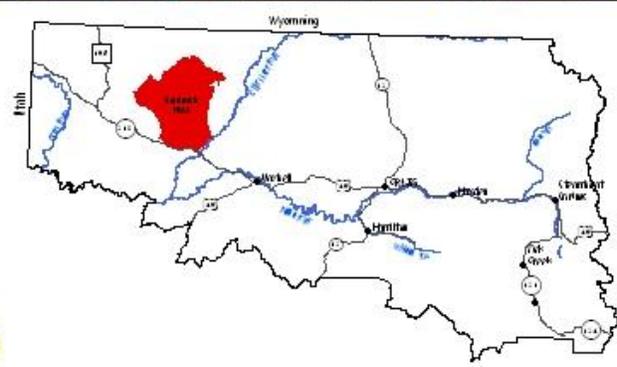
DATE SIGNED:

Bureau of Land Management Little Snake Field Office Sandwash Herd Management Area (HMA)



Legend

-  Herd Management Area Boundary
- Surface Management Status
-  BLM
-  Private
-  State Land Board



08/07/08

APPENDIX I

Range Monitoring Analysis

Discussion

The Proposed Action to remove excess wild horses from the Sand Wash HMA takes into consideration the following factors:

- analysis of current range monitoring data
- precipitation since the last wild horse gather in 2005
- wild horse actual use derived from aerial census
- actual livestock use
- voluntary reductions by livestock permittees in the numbers of sheep being grazed within the HMA due to drought and increasing wild horse numbers.

In 2001, a stocking rate analysis was conducted to establish a management range of 163 to 362 horses with a gather every four years to reduce the herd size to 163 horses. Analysis of monitoring and actual use data between 1989 and 2000 determined that this AML range and gather schedule would be compatible with the forage resource so long as livestock permittees took voluntary non-use commensurate with horse population levels in any given year. Analysis of monitoring data collected since the 2001 gather shows that the management range of 163 to 362 horses and four year gather schedule remain appropriate, although a drought that occurred during this period resulted in greater levels of voluntary non-use by livestock permittees than would have been expected.

Drought

A drought began in 2001 that continues to affect much of the intermountain west. Precipitation continued to be significantly below average, although some improvement occurred in 2005. For central Moffat County, the drought was more severe and longer-lasting than at any other time on record since 1958. The following is total annual precipitation at Maybell, Colorado (approximately 20 miles southeasterly of the HMA) from 2001 to 2004:

<u>Year</u>	<u>Total Annual Precip.</u>	<u>26 Year Mean Precip. (2007)</u>	<u>% of Mean</u>
2001	9.61	11.94	80%
2002	9.01	“	75%
2003	9.74	“	82%
2004	6.38	“	53%
2005	14.07	“	118%
2006	8.60	“	72%
2007	11.54	“	97%

Source: Western Regional Climate Center, www.wrcc.dri.edu

As expected, this drought resulted in greatly reduced biomass production and vigor in the plant communities within the HMA. Qualitative observations collected during the land health assessment of the Sand Wash Watershed in 2002 noted declines in plant growth and recruitment that were directly attributable to drought conditions. Other qualitative observations made during semi annual collection of utilization data in each of the last four years have been similar.

Between 2001 and the date of this document, livestock permittees within the HMA took significant reductions in livestock numbers and length of use. These post-2001 livestock reductions are greater than would be needed to balance increased wild horse herd size, and are in response to ongoing, notable drought conditions. Conversely, the wild horse population increased each year by a conservative estimate of 20%. The Division of Wildlife records show an increase in elk over the last four years in Game Management Unit 2, which encompasses the Sand Wash Basin. DOW records are supported by BLM field observations that note increased numbers of elk sightings, particularly in the winter and early spring.

Trend

In the mid 1970s and early 1980s, BLM established 35 photopoint trend plots within the HMA. These photopoint plots consist of nine square foot quadrats within which plant composition, recruitment, and plant and litter cover are measured over time. This method results in a trend index number which reflects the compilation of all parameters measured for each quadrat. The change in the indices can be compared over time to determine whether the quadrat sample is indicating an upward, downward, or static trend. Another aspect of this type of monitoring is that photographs are taken at each reading of both the quadrat and the general area (usually looking north from the quadrat) that yields qualitative information on the general trend at the sample site.

Sand Wash Allotment

Fourteen photopoint plots established on this allotment are within the HMA. Establishment dates for these plots are between the mid 1970s and early 1980s. Data was collected from these plots on a mostly annual basis until 1983. The plots were not revisited until 1995, when only photographs were taken. Quantitative data was again collected from these plots in June, 2005. In comparing the 2005 trend indices with those from the late 1970s and early 1980s, downward trends were shown on 6 plots, upward trends were shown on 4 plots, static trend was shown on 1 plot, and 2 plots could not be relocated.

The downward trends that were indicated by the 2005 data mostly resulted from decreases in perennial grass cover and abundance in the interspaces between shrubs. One site in the central portion of the Sand Wash Allotment showed a significant decline, to near elimination, of perennial grasses on a site that was dominated by perennial grasses as recently as 1995. The upward trends were mostly noted on sites that were dominated by shrubs.

Shepherd Springs Allotment

This allotment contains 21 photopoint plots that were established in the early 1980s. These plots were read until 1983 with repeat photographs taken of each one in 1996. In 2005, an attempt was made to relocate and re-read the plots. Of the 21, 13 were either lost (stakes could not be relocated) or abandoned due human influences such as proximity to sheep camps or powerlines. Two sites had no earlier data on file, but were read in 2005. Of the 6 sites that were relocated, 1 only had a repeat photo taken due to the loss of the plot stakes. Four sites indicated a downward trend and 2 sites had static trends. Of the sites indicating downward trends, 2 were due to losses in perennial grass cover and 1 was due to a decline in browse cover.

Analysis

While the drought from 2001 to the present has had serious impact to the plant communities within the HMA, herbivory during this period is exacerbating the drought's effects. As plants begin to experience slowing of physiological processes due to water loss, the additional stress of herbivory at different stages of growth during drought can slow shoot regrowth and root extension. This is especially true among grasses and forbs, whose shallower roots have less access to water stored deep in the soil. Continued herbivory during this period of reduced growth reduces the plant's ability to regrow leaf area by forcing it to continually initiate growth from basal buds. When shoot growth is continually suppressed, carbohydrates to replace root mass decline which leads to a downward spiral resulting in plant death (Howery 1999). Additionally, suppressed seed production and reduced seed germination leads to very little recruitment of new plants into the community.

Downward trends due to declines in perennial grasses can be attributed to continued herbivory during periods of growth when plants are most sensitive to grazing coupled with ongoing drought conditions, i.e. use by animals between the late vegetative and early floral initiation stages (late June-early July) coupled with declining seasonal soil water availability (Brown 1995). Foraging animals present within the HMA during this period are primarily horses and pronghorn antelope.

Utilization

Twice yearly, in the spring and fall, utilization data which reflects ongoing use of browse and grass species, was collected at key areas within the two grazing allotments that comprise the majority of the HMA (84%), Sand Wash (Sand Wash Pasture) and Shepherd Springs (Shepherd Pasture). Data was collected by the key forage method which assigns a ranking of utilization (low, moderate, high, etc.) based on an estimation of current years growth consumed by percent.

Table 1. Browse and grass utilization from 2001 to spring 2008 in the Sheepherder Springs and Sand Wash Allotments.

Year/Season Date Collected	Sheepherder Springs Allotment		Sand Wash Allotment	
	% Browse Utilization	% Grass Utilization	% Browse Utilization	% Grass Utilization
Spring 2005	42%	20%	22%	44%
Fall 2005	24%	23%	13%	13%
Spring 2006	28%	48%	49%	16%
Fall 2006	38%	48%	Nd	8%
Spring 2007	44%	39%	Nd	34%
Fall 2007	32%	28%	9%	28%
Spring 2008	47%	18%	55%	59%

0-5% = No Use, 6-20% = Slight, 21-40% = Light, 41-60% = Moderate, 61-80% = Heavy, 81-100% = Severe

As shown in Table 1, the majority of use over the period since the last gather has been slight to light use of both browse and grasses. The exception to this has been data gathered in the Spring of 2008, where the average utilization in the Sand Wash Allotment was in the moderate range. During each year, there have been specific areas that have shown unacceptable levels of use, i.e. levels greater than 40% for browse species and 50% for grass species. These conditions have been highly localized and not apparent in multiple years on the same sites. Data from spring readings is indicative of utilization by sheep as well as horses and wildlife while fall data reflects use by horses and wildlife only.

Actual use by livestock

In 2001, when the current wild horse AML and management range and the 4 year gather schedule were developed, livestock operators in the HMA again agreed to take appropriate levels of voluntary non-use commensurate with herd size each year to conserve the forage base and foster long term health of the range. Varying levels of voluntary non-use were taken over the last four years. This non-use was motivated by the drought, and by the annual increase in wild horse population size. The severe drought has caused most livestock operators in northwest Colorado to take significant reductions in livestock use since 2001, including those operating within the HMA.

Table 2. Actual use (by AUMs) by permittees within the Sand Wash HMA since 2005.

Year	Sand Wash Allotment	Shepherd Springs Allotment	Nipple Rim Allotment ¹	Lang Spring Allotment
2005	3,704	1,102	756	0
2006	2,754	41	737	0
2007	2,334	505	715	0
Total Permitted AUMs³	6,377	8,099	1,989²	364
1 - The Nipple Rim Allotment is run in common by two permittees. AUMs are apportioned equally between both permittees. 2 - Total active AUMs shown reflect the AUMs available in the portion of the allotment within the HMA, which is roughly half of the total AUMs for the allotment. Actual use shown is the sum of use by both permittees and are pro rated to reflect use in the HMA half of the allotment. 3 - the number of AUMs which could have been utilized by the grazing permittee on an annual basis.				

Actual use by wild horses

Actual use by wild horses in the Sand Wash HMA, based on census flights and estimates:

Year	Number of Horses	AUMs
2001	163	1,956
2002	199	2,388
2003	243	2,952
2004	296	3,552
2005	311	3,732
2006	373 ¹	4,476
2007	386 ²	4,632
1 - This figure is an estimate, based on a 20% increase in the population from the year prior. 2 - This figure is based on actual numbers of horses counted in the HMA in the Fall of 2007.		

In 2001, the wild horse herd was lowered to 163 horses. The most recent aerial census, completed in July 2008, recorded 404 wild horses. Current, post-foal wild horse population is estimated at 425 horses. The estimated 2009 population, should herd size not be lowered in 2008, would consist of 510 horses. Historically, the Sand Wash herd has reached emergency status due to water shortage when the population has exceeded approximately 400 horses in the herd.

Since the 2001, due to natural (heat, bugs, water availability) and man-induced variables (recreational traffic and disturbance from other human presence), wild horse bands have not dispersed evenly through the HMA. The majority of bands avoid the far southern portion of the HMA, concentrating in the area roughly defined as north of Clay Buttes; west towards Lookout Mountain, east of Meathouse Spring; north to the HMA boundary and east to the HMA boundary. Generally speaking, during years of average precipitation and temperature extremes, wild horse bands are most widely distributed in the late fall, winter and early spring months when water is readily available. Horse bands concentrate more tightly during spring and early summer foaling and breeding seasons when band awareness of one another is heightened. As

water sources dry in the mid-summer wild horses concentrate most heavily in the north and central HMA generally described as from the north and east HMA boundaries south to the Shepherd Spring/Yellow Cat Wash vicinity and west to the north fork of Sand Wash. There are always exceptions to these estimates. Resident horse bands can be found in any portion of the HMA during any time of the year due to unrestricted access of horses to their entire HMA.

References

Brown, R.W. 1995. Range plants: adaptations to water deficits. *In*: Bedunah, D.J. and R.E. Sosebee (eds.). *Wildland plants: physiological ecology and developmental morphology*. Society for Range Management. Denver. p. 291-413.

Howery, L. 1999. *Rangeland management before, during, and after drought*. University of Arizona Cooperative Extension Publication Number AZ1136. 6pp.

Appendix II

Results of WinEquus Population Modeling

Population modeling was completed for the Proposed Action and the alternatives. One hundred trials were run, simulating population growth and herd demographics to determine the projected herd structure for the next four years, or prior to the next gather. The computer program used simulates the population dynamics of wild horses. It was written by Dr. Stephen H. Jenkins, Department of Biology, University of Nevada, Reno, under a contract from the National Wild Horse and Burro Program of the Bureau of Land Management and is designed for use in comparing various management strategies for wild horses.

To date, one herd 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 and 18% year two. Because the Proposed Action is to inoculate the mares a second time via remote darting, the fertility rates in the treated Sand Wash mares should be 6% in year three and 18% in year 4. This data must be compared to normal fertility rates in untreated mares of 50% - 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.

Interpretation of the Model

The estimated population of 425 wild horses in the Sand Wash was based on a July 2008 census, and was used in the population modeling. Year one is the baseline starting point for the model, and reflects wild horse numbers immediately prior to the gather action and also reflects a slightly skewed sex ratio which favors females. A sex ratio of 50:50 was entered into the model for the post gather action population. In this population modeling, year one would be 2008. Year two would be exactly one year in time from the original action, and so forth for years three, four, and five, etc. Consequently, at year eleven in the model, exactly ten years in time would have passed. In this model, year eleven is 2018. This is reflected in the Population Size Modeling Table by "Population sizes in ten years" and in the Growth Rate Modeling Table by "Average growth rate in 10 years". Growth rate is averaged over ten years in time, while the population is predicted out the same ten years to the end point of year eleven. The Full Modeling Summaries contain tables and graphs directly from the modeling program.

The initial herd size, sex ratio and age distribution for 2008 was structured by the WinEquus Population Model using data from the horses gathered and released during the 2005 gather. This initial population data was then entered into the model and the model was used to predict various outcomes of the different alternatives, including the No Action Alternative for comparison purposes.

Pre-Management Action Estimated 2008 Herd Demographics

This beginning age-sex distribution was used as the starting population for all model runs for each alternative. This data is based on the age-sex distribution information collected during previous gathers.

Age in Years	Female	Male
0	27	27
1	34	34
2	38	38
3	43	29
4	15	10
5	4	4
6	13	8
7	10	7
8	8	5
9	8	5
10-14	10	8
15-19	14	17
20 and older	4	4
Total	228	196
Total Population	424	

The parameters for the population modeling were:

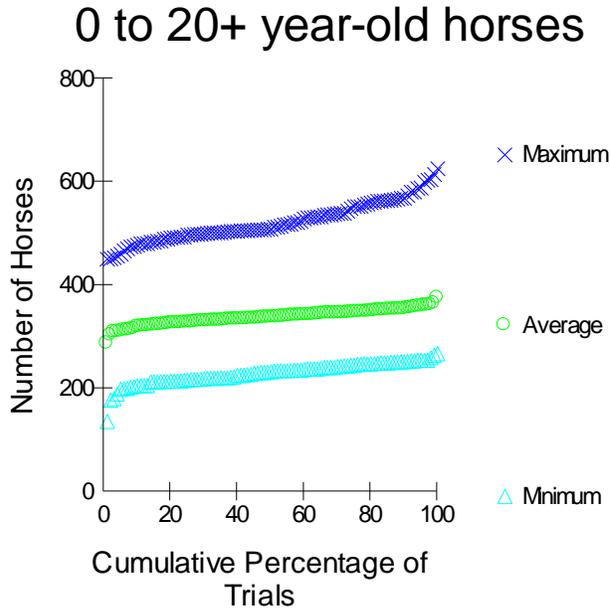
1. gather when population exceeds 362 horses in the HMA
2. foals are included in AML
3. percent to gather 90(%)
4. four years between gathers
5. number of trials 100
6. number of years 10
7. initial calendar year 2008
8. initial population size 425
9. population size after gather 163
10. implement selective removal criteria
11. fertility control Yes for Proposed Action and No for Alternative 2

Results – Proposed Action – Removal to 163 with Fertility Control

The parameters for the population modeling were:

- 1-10. same as parameters listed above.
- 11. Yes, treat all mares released with fertility control.

Population Size Modeling Graph and Table

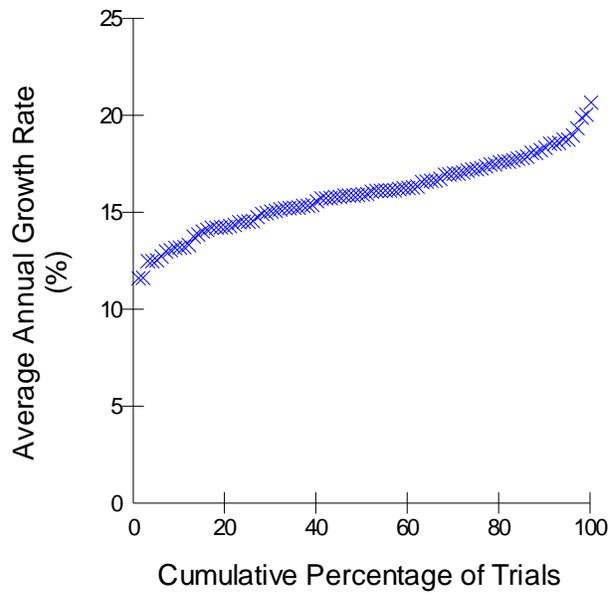


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	132	241	427
10th Percentile	172	267	437
25th Percentile	178	276	449
Median Trial	190	284	458
75th Percentile	199	294	480
90th Percentile	204	300	508
Highest Trial	223	320	585

* 0 to 20+ year-old horses

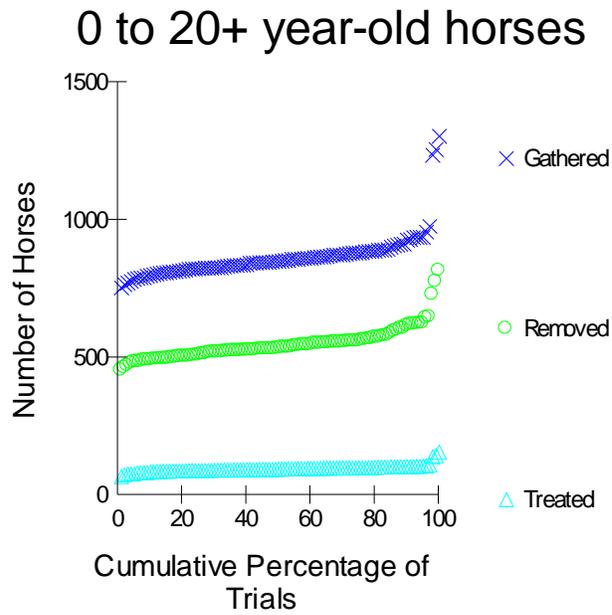
Growth Rate Modeling Graph and Table



Average Growth Rate in 10 Years

Lowest Trial	11.6
10th Percentile	13.2
25th Percentile	14.6
Median Trial	16.0
75th Percentile	17.3
90th Percentile	18.5
Highest Trial	20.7

Number of Horses Gathered Modeling Graph and Table



Totals in 11 Years*

	Gathered	Removed	Treated
Lowest Trial	754	453	68
10th Percentile	800	492	86
25th Percentile	824	510	91
Median Trial	851	534	96
75th Percentile	882	562	101
90th Percentile	929	617	105
Highest Trial	1305	815	157

* 0 to 20+ year-old horses

Ending Age-Sex Distribution in 11 Years

Based on the most typical trial (#4) from the population model:

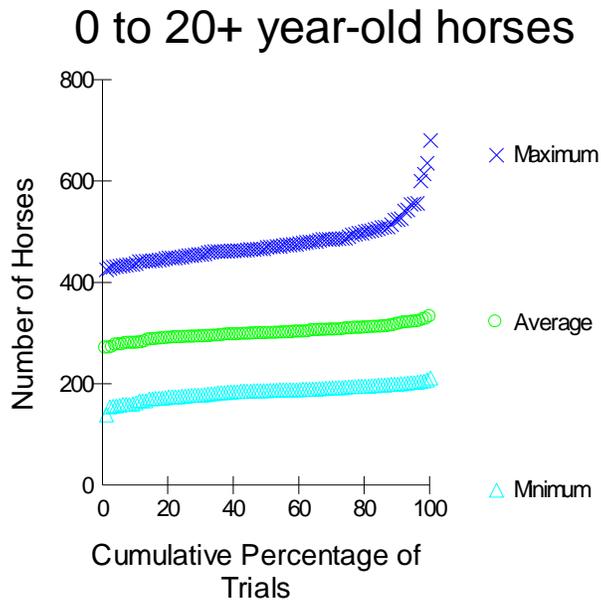
Age in Years	Female	Male
0	23	31
1	27	20
2	15	21
3	18	18
4	19	17
5	12	19
6	3	10
7	6	3
8	5	4
9	6	4
10-14	13	7
15-19	5	2
20 and older	0	1
Total	152	157
Total Population	309	

Results – Alternative 2 – Removal to 163 with No Fertility Control

The parameters for the population modeling were:

- 1-10. same as parameters listed above.
- 11. No, do not treat mares released with fertility control.

Population Size Modeling Graph and Table

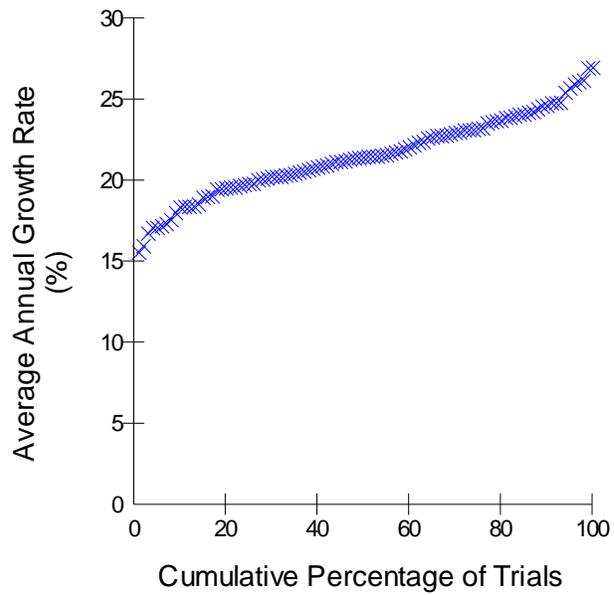


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	140	271	427
10th Percentile	166	280	441
25th Percentile	178	292	454
Median Trial	188	300	472
75th Percentile	196	309	494
90th Percentile	202	318	527
Highest Trial	213	333	682

* 0 to 20+ year-old horses

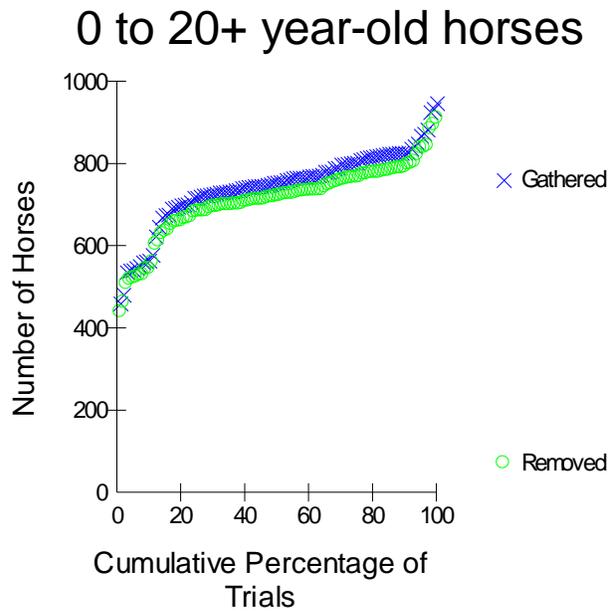
Growth Rate Modeling Graph and Table



Average Growth Rate in 10 Years

Lowest Trial	15.6
10th Percentile	18.4
25th Percentile	19.8
Median Trial	21.5
75th Percentile	23.2
90th Percentile	24.7
Highest Trial	27.0

Number of Horses Gathered Modeling Graph and Table



Totals in 11 Years*

	Gathered	Removed
Lowest Trial	461	440
10th Percentile	572	553
25th Percentile	720	684
Median Trial	756	722
75th Percentile	806	768
90th Percentile	828	796
Highest Trial	948	911

* 0 to 20+ year-old horses

Ending Age-Sex Distribution in 11 Years

Based on the most typical trial (#19) from the population model:

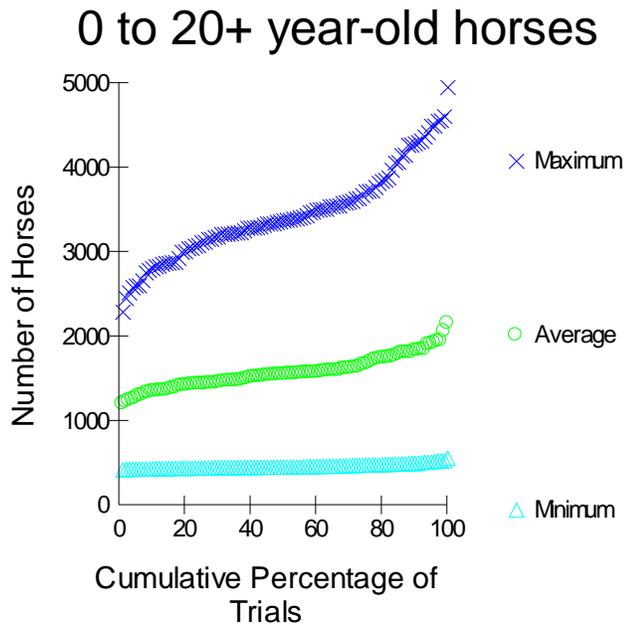
Age in Years	Female	Male
0	34	42
1	34	36
2	28	34
3	27	20
4	6	10
5	15	13
6	7	3
7	14	7
8	2	3
9	2	2
10-14	14	7
15-19	1	1
20 and older	0	0
Total	184	178
Total Population	362	

Results – No Action

The parameters for the population modeling were:

1. do not gather in 2008
2. foals are included in AML
3. percent to gather 0

Population Size Modeling Graph and Table

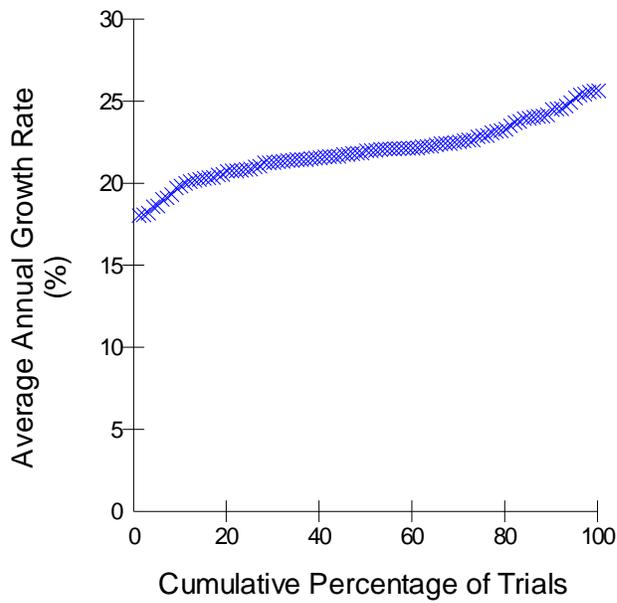


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	426	1201	2293
10th Percentile	438	1350	2821
25th Percentile	448	1437	3118
Median Trial	458	1551	3378
75th Percentile	484	1678	3722
90th Percentile	502	1834	4296
Highest Trial	559	2155	4954

* 0 to 20+ year-old horses

Growth Rate Modeling Graph and Table



Average Growth Rate in 10 Years

Lowest Trial	18.1
10th Percentile	20.0
25th Percentile	21.0
Median Trial	22.0
75th Percentile	23.0
90th Percentile	24.6
Highest Trial	25.7

Ending Age-Sex Distribution in 11 Years

Based on the most typical trial (#10) from the population model:

Age in Years	Female	Male
0	87	141
1	207	300
2	103	150
3	119	156
4	76	104
5	83	124
6	65	98
7	43	22
8	34	19
9	49	27
10-14	118	43
15-19	22	4
20 and older	1	14
Total	1,007	1,202
Total Population	2,209	

This table compares the projected population growth for the Proposed Action and the alternatives at the end of the ten-year simulation. The population averages are from the median trial.

Modeling Statistic Sand Wash HMA	Proposed Action	Alternative 2 – No Fertility Control	No Action
Population in Year One	163	163	463
Median Growth Rate	16%	22%	22%
Average Population	284	300	1551
Lowest Average Population	190	188	458
Highest Average Population	458	472	3,378
Average Number of Horses Removed from HMA	534	722	0

Appendix III

Current Standard Operating Procedures (Gather Operation)

Gathers would be conducted by utilizing contractors from the Wild Horse and Burro Gathers-Western States Contract, or BLM personnel. The following procedures for gathering and handling wild horses and burros would apply whether a contractor or BLM personnel conduct a gather. For helicopter gathers conducted by BLM personnel, gather operations will be conducted in conformance with the *Wild Horse and Burro Aviation Management Handbook* (March 2000).

Prior to any gathering operation, the BLM will provide for a pre-capture evaluation of existing conditions in the gather area(s). The evaluation will include animal conditions, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with wilderness boundaries, the location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine whether the proposed activities will necessitate the presence of a veterinarian during operations. If it is determined that gather operations necessitate the services of a veterinarian, one would be obtained before the gather would proceed. The contractor will be apprised of all conditions and will be given instructions regarding the gather and handling of animals to ensure their health and welfare is protected.

Trap sites and temporary holding sites will be located to reduce the likelihood of undue injury and stress to the animals, and to minimize potential damage to the natural resources of the area. These sites would be located on or near existing roads.

The primary gather methods used in the performance of gather operations include:

1. Helicopter Drive Trapping. This gather method involves utilizing a helicopter to herd wild horses and burros into a temporary trap.
2. Helicopter Assisted Roping. This gather method involves utilizing a helicopter to herd wild horses or burros to ropers.
3. Bait Trapping. This gather method involves utilizing bait (water or feed) to lure wild horses and burros into a temporary trap.

The following procedures and stipulations will be followed to ensure the welfare, safety and humane treatment of wild horses and burros in accordance with the provisions of 43 CFR 4700.

A. Capture Methods used in the Performance of Gather Contract Operations

1. The primary concern of the contractor is the safe and humane handling of all animals gathered. All gather attempts shall incorporate the following: All trap and holding facilities locations must be approved by the Contracting Officer's Representative (COR) and/or the Project Inspector (PI) prior to construction. The Contractor may also be required to change or move trap locations as determined by the COR/PI. All traps and holding facilities not located on public land must have prior written approval of the landowner.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.
3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:
 - a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.
 - b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood or metal without holes.
 - c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses. The location of the government furnished portable fly chute to restrain, age, or provide additional care for the animals shall be placed in the runway in a manner as instructed by or in concurrence with the COR/PI.
 - d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, plastic snow fence, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses.
 - e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking gates.
4. No modification of existing fences will be made without authorization from the COR/PI. The Contractor shall be responsible for restoration of any fence modification which he has made.
5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor shall be required to wet down the ground with water.
6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens

shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the gather area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the COR.

7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. An animal that is held at a temporary holding facility after 5:00 p.m. and on through the night, is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.
8. It is the responsibility of the Contractor to provide security to prevent loss, injury or death of gathered animals until delivery to final destination.
9. The Contractor shall restrain sick or injured animals if treatment is necessary. The COR/PI will determine if injured animals must be destroyed and provide for destruction of such animals. The Contractor may be required to humanely euthanize animals in the field and to dispose of the carcasses as directed by the COR/PI.
10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR/PI. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COR.

B. Capture Methods that May be Used in the Performance of a Gather

1. Capture attempts may be accomplished by utilizing bait (feed or water) to lure animals into a temporary trap. If the contractor selects this method the following applies:
 - a. Finger gates shall not be constructed of materials such as "T" posts, sharpened willows, etc., that may be injurious to animals.
 - b. All trigger and/or trip gate devices must be approved by the COR/PI prior to capture of animals.
 - c. Traps shall be checked a minimum of once every 10 hours.

2. Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If the contractor selects this method the following applies:
 - a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one hour.
 - b. The contractor shall assure that foals shall not be left behind, and orphaned.
3. Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If the contractor with the approval of the COR/PI selects this method the following applies:
 - a. Under no circumstances shall animals be tied down for more than one hour.
 - b. The contractor shall assure that foals shall not be left behind, or orphaned.
 - c. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

C. Use of Motorized Equipment

1. All motorized equipment employed in the transportation of gathered animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals. The Contractor shall provide the COR/PI with a current safety inspection (less than one year old) for all motorized equipment and tractor-trailers used to transport animals to final destination.
2. All motorized equipment, tractor-trailers, and stock trailers shall be in good repair, of adequate rated capacity, and operated so as to ensure that gathered animals are transported without undue risk or injury.
3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.

4. All tractor-trailers used to transport animals to final destination(s) shall be equipped with at least one (1) door at the rear end of the trailer which is capable of sliding either horizontally or vertically. The rear door(s) of tractor-trailers and stock trailers must be capable of opening the full width of the trailer. Panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of all trailers must be strong enough so that the animals cannot push their hooves through the side. Final approval of tractor-trailers and stock trailers used to transport animals shall be held by the COR/PI.

5. Floors of tractor-trailers, stock trailers and loading chutes shall be covered and maintained with wood shavings to prevent the animals from slipping.

6. Animals to be loaded and transported in any trailer shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. The following minimum square feet per animal shall be allowed in all trailers:

- 11 square feet per adult horse (1.4 linear foot in an 8 foot wide trailer);
- 8 square feet per adult burro (1.0 linear foot in an 8 foot wide trailer);
- 6 square feet per horse foal (.75 linear foot in an 8 foot wide trailer);
- 4 square feet per burro foal (.50 linear feet in an 8 foot wide trailer).

7. The COR/PI shall consider the condition and size of the animals, weather conditions, distance to be transported, or other factors when planning for the movement of gathered animals. The COR/PI shall provide for any brand and/or inspection services required for the gathered animals.

8. If the COR/PI determines that dust conditions are such that the animals could be endangered during transportation, the Contractor will be instructed to adjust speed.

D. Safety and Communications

1. The Contractor shall have the means to communicate with the COR/PI and all contractor personnel engaged in the capture of wild horses and burros utilizing a VHF/FM Transceiver or VHF/FM portable Two-Way radio. If communications are ineffective the government will take steps necessary to protect the welfare of the animals.

a. The proper operation, service and maintenance of all contractor furnished property is the responsibility of the Contractor. The BLM reserves the right to remove from service any contractor personnel or contractor furnished equipment which, in the opinion of the contracting officer or COR/PI violate contract rules, are unsafe or otherwise unsatisfactory. In this event, the Contractor will be notified in writing to furnish replacement personnel or equipment within 48 hours of notification. All such replacements must be approved in advance of operation by the Contracting Officer or his/her representative.

b. The Contractor shall obtain the necessary FCC licenses for the radio system

- c. All accidents occurring during the performance of any task order shall be immediately reported to the COR/PI.

2. Should the contractor choose to utilize a helicopter the following will apply:

- a. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.

- b. Fueling operations shall not take place within 1,000 feet of animals.

E. Site Clearances

Personnel working at gather sites will be advised of the illegality of collecting artifacts. Prior to setting up a trap or temporary holding facility, BLM will conduct all necessary clearances (archaeological, T&E, etc). All proposed site(s) must be inspected by a government archaeologist. Once archaeological clearance has been obtained, the trap or temporary holding facility may be set up. Said clearance shall be arranged for by the COR, PI, or other BLM employees.

Gather sites and temporary holding facilities would not be constructed on wetlands or riparian zones.

F. Special Stipulations.

1. Private landowners or the proper administering agency(s) would be contacted and authorization obtained prior to setting up traps on any lands that are not administered by BLM. Wherever possible, traps would be constructed in such a manner as to not block vehicular access on existing roads.

2. Gathering would be conducted when soils are dry or frozen and conditions are optimal for safety and protection of the horses and wranglers. Whenever possible, gathering activities will be scheduled to minimize impacts with big game hunting seasons.

3. Gathers would not be conducted 6 weeks on either side of peak foaling season recognized between March 1 and June 30 to reduce the risk of injury or stress to pregnant mares and mares with young foals.

4. The helicopter would avoid eagles and other raptors, and would not be flown repeatedly over any identified active raptor nests. Unnecessary flying would not occur over big game on their winter ranges or active fawning/calving grounds during the period of use.

5. Standard operating procedures in the construction of traps will avoid adverse impacts from trap construction, or operation to wildlife species, including threatened, endangered, or sensitive species.

G. Animal Characteristics and Behavior

Releases of wild horses would be near available water. If the area is new to them, a short-term adjustment period may be required while the wild horses become familiar with the new area.

H. Public Participation

Opportunities for public viewing (i.e. media, interested public) of gather operations will be made available to the extent possible, however, the primary consideration will be to protect the health and welfare of the animals being gathered. The public must adhere to guidance from the on site BLM representative. It is BLM policy that the public will not be allowed to come into direct contact with wild horses or burros being held in BLM facilities. Only authorized BLM personnel, or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at anytime or for any reason during BLM operations.

I. Responsibility and Lines of Communication

Little Snake Field Office - Contracting Officer's Representative, Rangeland Management Specialist; White River Field Office - Project Inspector, Range Technician

The Contracting Officer's Representatives (CORs) and the project inspectors (PIs) have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. The Little Snake Associate Field Manager and the Little Snake Field Manager will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, National Program Office and Cañon City Corrals offices. All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times. All publicity, formal public contact and inquiries will be handled through the Associate Field Manager. This individual will be the primary contact and will coordinate the contract with the BLM Corrals to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition. The contract specifications require humane treatment and care of the animals during removal operations. These specifications are designed to minimize the risk of injury and death during and after capture of the animals. The specifications will be vigorously enforced. Should the Contractor show negligence and/or not perform according to contract stipulations, he will be issued written instructions, stop work orders, or defaulted.

Appendix IV

Current Standard Operating Procedures (Fertility Control Treatment)

The following management and monitoring requirements are part of the Proposed Action:

- PZP vaccine would be administered by trained HSUS and/or BLM personnel.
- The fertility control drug is administered with two separate injections: (1) a liquid dose of PZP is administered using an 18 gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14 gauge needle. These are loaded on the end of a trocar (dry syringe with a metal rod) which is loaded into the jabstick which then pushes the pellets into the breeding mares being returned to the range. The pellets and liquid are designed to release the PZP over time similar to a time release cold capsule.
- Delivery of the vaccine would be as an intramuscular injection while the mares are restrained in a working chute. 0.5 cubic centimeters (cc) of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid and pellets would be propelled into the left hind quarters of the mare, just below the imaginary line that connects the point of the hip and the point of the buttocks.
- Treated mares may be freeze-marked on the hip to enable researchers to positively identify the animals during the research project as part of the data collection phase.
- At a minimum, monitoring of reproductive rates using helicopter flyovers will be conducted in years 2 through 4 by checking for presence/absence of foals. The flight scheduled for year 4 will also assist in determining the percentage of mares that have returned to fertility. In addition, field monitoring will be routinely conducted as part of other regular ground-based monitoring activities.
- A field data sheet will be used by the field applicators to record all the pertinent data relating to identification of the mare (including a photograph when possible), date of treatment, type of treatment (1 or 2 year vaccine, adjuvant used) and HMA, etc. The original form with the data sheets will be forwarded to the authorized officer at NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.
- A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and state along with the freeze-mark (if used) applied by HMA.

Appendix V

Current Euthanasia Policy

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

October 20, 2005

In Reply Refer To:
4730/4700 (WO-260) P

EMS TRANSMISSION 11/03/2005
Instruction Memorandum No. 2006-023
Expires: 09/30/2007

To: All Field Officials (except Alaska)

From: Assistant Director, Renewable Resources and Planning

Subject: Euthanasia of Wild Horses and Burros

Program Area: Wild Horses and Burros

Purpose: This policy identifies requirements for euthanasia of wild horses and burros.

Policy/Action: A Bureau of Land Management (BLM) authorized officer may authorize the euthanasia of a wild horse or burro in field situations (includes free-roaming horses and burros encountered during gather operations) as well as short- and long-term wild horse and burro holding facilities with any of the following conditions:

- (1) Displays a hopeless prognosis for life;
- (2) suffers from a chronic or incurable disease, injury or serious physical defect; (includes severe tooth loss or wear, severe club feet, and other severe acquired or congenital abnormalities)
- (3) would require continuous treatment for the relief of pain and suffering in a domestic setting;
- (4) is incapable of maintaining a Henneke body condition score greater than two, in its present environment;
- (5) has an acute or chronic injury, physical defect or lameness that would not allow the animal to live and interact with other horses, keep up with its peers or exhibit behaviors which may be considered essential for an acceptable quality of life constantly or for the foreseeable future;

(6) suffers from an acute or chronic infectious disease where State or Federal animal health officials order the humane destruction of the animal as a disease control measure.

Euthanasia in field situations (includes on-the-range and during gathers):

There are three circumstances where the authority for euthanasia would be applied in a field situation:

(A) If an animal suffers from a condition as described in 1-6 above that causes acute pain or suffering and immediate euthanasia would be an act of mercy, the authorized officer has the authority and the obligation to promptly euthanize the animal. If the animal is euthanized during a gather operation, the authorized officer will describe the animal's condition and report the action using the gather report in the comment section that summarizes gather operations (See attachment 1). If the euthanasia is performed during routine monitoring, the Field Manager will be notified of the incident as soon as practical after returning from the field.

(B) Older wild horses and burros encountered during gather operations should be released if, in the opinion of the authorized officer, the criteria described in 1-6 above for euthanasia do not apply, but the animals would not tolerate the stress of transportation, adoption preparation, or holding and may survive if returned to the range. This may include older animals with significant tooth wear or tooth loss that have a Henneke body condition score greater than two. However, if the authorized officer has inspected the animal's teeth and feels the animal's quality of life will suffer and include health problems due to dental abnormalities, significant tooth wear or tooth loss; the animal should be euthanized as an act of mercy.

(C) If an animal suffers from any of the conditions listed in 1-6 above, but is not in acute pain, the authorized officer has the authority to euthanize the animal in a humane manner. The authorized officer will prepare a written statement documenting the action taken and notify the Field Manager and State Office Wild Horse and Burro (WH&B) Program Lead. If available, consultation and advice from a veterinarian is recommended, especially where significant numbers of wild horses or burros are involved.

If, for humane or other reasons, the need for euthanasia of an unusually large number of animals during a gather operation is anticipated, the euthanasia procedures should be identified in the pre-gather planning process. When pre-gather planning identifies an increased likelihood that animals may need to be euthanized, plans should be made for an APHIS veterinarian to visit the gather site and consult with the authorized officer on euthanasia decisions.

In all cases, the final responsibility and decision regarding euthanasia of a wild horse or burro rests solely with the authorized officer (43 CFR 4730). Euthanasia will be carried out following the procedures described in the 4730 manual.

Euthanasia at short-term holding facilities:

Under ideal circumstances horses would not arrive at preparation or other facilities that hold horses for any length of time with conditions that require euthanasia. However, problems can develop during or be exacerbated by handling, transportation or captivity. In these situations the authority for euthanasia would be applied:

(A) If an animal suffers from a traumatic injury or other condition as described in 1-6 above that causes acute pain or suffering and immediate euthanasia would be an act of mercy, the authorized officer has the authority and the obligation to promptly euthanize the animal. A veterinarian should be consulted if possible.

(B) If in the opinion of the authorized officer and a veterinarian, older wild horses and burros in short-term holding facilities cannot tolerate the stress of transportation, adoption preparation, or long-term holding they should be euthanized. However, if the authorized officer has inspected the animal and feels the animal's quality of life will not suffer, and the animal could live a healthy life in long-term holding, the animal should be shipped to a long-term holding facility.

(C) It is recommended that consultation with a veterinarian is obtained prior to euthanasia. If an animal suffers from any of the conditions listed in 1-6 above, but is not in acute pain, the authorized officer has the authority to euthanize the animal in a humane manner. Situations where acute suffering of the animal is not involved could include a physical defect or deformity that would adversely impact the quality of life of the animal if placed in the adoption program or on long-term holding. The authorized officer will ensure that there is a report from a veterinarian describing the condition of the animal that was euthanized. These records will be maintained by the holding facility.

If, for humane reasons, the need for the euthanasia of a large number of animals is anticipated, the euthanasia procedures should be identified to the WH&B State Lead or the National Program Office (NPO) when appropriate. A report that summarizes the condition, circumstances and number of animals involved must be obtained from a veterinarian who has examined the animals and sent to the WH&B State Lead and the NPO.

In all cases, final decisions regarding euthanasia of a wild horse or burro rest solely with the authorized officer (43 CFR 4730). Euthanasia will be carried out following the procedures described in the 4750-1 Handbook.

Euthanasia at long-term holding facilities:

This portion of the policy covers additional euthanasia conditions that are related to long-term holding facilities and includes existing facilities and any that may be added in the future.

At long-term holding facilities the authority for euthanasia would be applied:

(A) If an animal suffers from a traumatic injury or other condition as described in 1-6 above that causes acute pain or suffering and immediate euthanasia would be an act of

mercy, the authorized officer has the authority and the obligation to promptly euthanize the animal.

(B) If an animal suffers from any of the conditions listed in 1-6 above, but is not in acute pain, the authorized officer has the authority and obligation to euthanize the animal in a humane and timely manner. In situations where acute suffering of the animal is not involved, it is recommended that a consultation with a veterinarian is obtained prior to euthanasia. The authorized officer will ensure that there is a report from a veterinarian describing the condition of the animal that was euthanized. These records will be maintained by the authorized officer.

The following action plan will be followed for animals at long-term holding facilities:

The WH&B Specialist who is the Project Inspector and the contractor will evaluate all horses and their body condition throughout the year. Once a year a formal evaluation as well as a formal count of all horses at longterm holding facilities will be conducted. The action plan for the formal evaluation is as follows:

1. All animals will be inspected by field observation to evaluate body condition and identify animals that may need to be euthanized to prevent a slow death due to deterioration of condition as a result of aging. This evaluation will be based on the Henneke body condition scoring system. The evaluation team will consist of a BLM WH&B Specialist and a veterinarian not involved with regular clinical work or contract work at the long-term holding facilities. The evaluations will be conducted in the fall (September through November) to identify horses with body condition scores of 3 or less. Each member of the team will complete an individual rating sheet for animals that rate a category 3 or less. In the event that there is not agreement between the ratings, an average of the 2 scores will be used and final decisions will be up to the BLM authorized officer.
2. Animals that are rated less than a body condition score of 3 will be euthanized in the field soon after the evaluation by the authorized officer or their designated representative. The horses that rate a score 3 will remain in the field and should be re-evaluated by the contractor and WH&B Specialist that is the Project Inspector, for that contract, in 60 days to see if their condition is improving, staying the same or declining. Those that are declining in condition should be euthanized soon after the second evaluation.
3. The euthanasia process that will be used is a firearm. The authorized officer or their designated representative will carry out the process. Field euthanasia does not require the gathering of the animals which would result in increased stress and may cause unnecessary injury to other horses on the facility.
4. Documentation for each animal euthanized will include sex, color, and freeze/hip brand (if readable). Copies of all documentation will be given to the contractor and retained by BLM.

5. Arrangements for carcass disposal for euthanized animal(s) will be in accordance with applicable state and county regulations.

In all cases, the final decisions regarding euthanasia of a wild horse or burro for humane reasons rests solely with the authorized officer (43 CFR 4730). Euthanasia will be carried out following the procedures described in the 4750-1 Handbook.

Timeframe: This action is effective from the date of approval through September 30, 2007.

Budget Impact: Implementation of these actions would not result in additional expenditures over present policies.

Manual/Handbook Sections Affected: No manual or handbook sections are affected.

Background: The authority for euthanasia of wild horses or burros is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A) 43 CFR4730.1 and BLM Manual 4730-Destruction of Wild Horses and Burros and Disposal of their Remains.

Decisions to euthanize require an evaluation of individual horses that suffer due to injury, physical defect, chronic or incurable disease, severe tooth loss or old age. The animal's ability to survive the stress of removal and/or their probability of surviving on the range if released, transportation to a BLM facility and to adoption or long-term holding should be determined. The long term care of these animals requires periodic evaluation of their condition to prevent long term suffering. These evaluations will, at times, result in decisions that will require the euthanasia of horses or burros if this is the most humane course of action.

Coordination: This document was coordinated with the Wild Horse and Burro Specialists in each affected state, the National Program Office and Wild Horse and Burro Advisory Board.

Contact: Questions regarding this memorandum should be directed to Lili Thomas, Wild Horse and Burro Specialist, Wild Horse and Burro National Program Office, at (775) 861-6457.

Signed by:
Thomas H. Dyer
Deputy Assistant Director

Authenticated by:
Robert M. Williams
Policy and Records Group, WO-560

Appendix VI

Current Selective Removal Criteria Policy

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

August 10, 2005

In Reply Refer To:
4710 (WO 260) P
Ref: IM 2004-138
IM 2004-151

EMS TRANSMISSION 08/16/2005
Instruction Memorandum No. 2005-206
Expires: 09/30/2006

To: All Field Officials (except Alaska)

From: Assistant Director, Renewable Resources and Planning

Subject: Gather Policy & Selective Removal Criteria

Program Area: Wild Horse and Burro Program

Purpose: This Instruction Memorandum (IM) establishes gather policy and selective removal criteria for wild horses and burros.

A. Gather Requirements

1. Appropriate Management Level Achievement (AML)
Periodic removals will be planned and conducted to achieve and maintain AML and be consistent with AML establishment and removal decisions. Removals below AML may be warranted when a gather is being conducted as an “emergency gather” as defined in I.M. 2004-151 or where significant rationale is presented to justify a reduction below AML.
2. National Environmental Policy Act (NEPA) Analysis and Decision
A current NEPA analysis and gather plan is required. This NEPA analysis and determination to remove excess animals must include and be supported by the following elements required by case law and the Public Rangelands Improvement Act (1978): vegetative utilization and trend, actual use, climatic data and current census. Along with standard components, the NEPA analysis must also contain the following:

- a. Results of population modeling that forecast impacts to the Herd Management Area's (HMA's) population resulting from removals and fertility control treatments.
 - b. The desired post-gather on-the-range population number, age structure and sex ratio for the managed population.
 - c. Fertility control will be considered in all Gather Plan/NEPA documents (IM No. 2004-138) and will be addressed in the population model analysis. A "do not apply" decision will be justified in the rationale.
 - d. The collection of blood samples for development of genetic baseline data.
3. Where removals are necessary to achieve or maintain thriving natural ecological balance, all decisions shall be issued full force and effect under the authority of 43 CFR § 4770.3(c).
 4. All gathers that have been approved by Washington Office (WO) through the annual work plan process and that are listed on the National Gather Schedule may proceed without further approval. Changes to the gather schedule involving increased removal numbers for listed gathers, adding new gathers, or substituting gathers require approval by WO-260. Requests for such gathers will be submitted using Attachment 1 to WO-260, Reno National Program Office (NPO), for review and approval by the WO-260 Group Manager. No WO approval is required for the removal of up to 10 nuisance animals per instance unless a national contractor conducts the removal.
 5. A gather and removal report (Attachment 2) is required for each wild horse and burro gather. Partial completion reports shall be filed periodically (every 2 to 5 days) during large lengthy gathers. A final report for all gathers will be submitted to the State WH&B Lead and WO-260, NPO, within ten days of gather completion.

B. Selective Removal Requirements

The selective removal criteria described below applies to all excess wild horses removed from the range. These criteria are not applicable to wild burros. When gathers are conducted emphasis will be placed on the removal of younger more adoptable animals. However, the long term welfare of wild horse herds is critical and it is imperative that close attention be given to the post-gather on-the-range herd sex ratio and age structure to assure a healthy sustainable population. Animals with conditions that may prevent adoption should be released to the range if herd health will not be compromised or harmed. Example conditions are disease, congenital or genetic defects, physical defect due to previous injury, and recent but not life threatening injury.

1. Age Criteria: Wild Horses will be removed in the following priority order:

- a). Age Class - Five Years and Younger

Wild horses five years of age and younger should be the first priority for removal and placement into the national adoption program.

b). Age Class - Six to Fifteen Years Old

Wild horses six to fifteen years of age should be removed last and only if management goals and objectives for the herd can't be achieved through the removal of younger animals. Animals encountered during gather operations should be released if, in the opinion of the Authorized Officer, they may not tolerate the stress of transportation, preparation and holding but would survive if released. Older animals in acceptable body condition with significant tooth loss and/or excessive tooth wear should also be released. Some situations, such as removals from private land, total removals, or emergency situations require exceptions to this.

c). Age Class Sixteen Years and Older

Wild horses aged sixteen years and older should not be removed from the range unless specific exceptions prevent them from being turned back and left on the range.

C. Potential Exceptions to Selective Removal Requirements

1. Nuisance animals
2. Animals outside of an HMA
3. Land use plan or activity plan identifies certain characteristics that are to be selectively managed for in a particular HMA (Examples: Spanish characteristics, Bashkir "Curly" or others).
4. Total removals required by law or land use plan decisions
5. Court ordered gathers
6. Emergency gathers (see IM 2004-151)
7. Removal of wild horses treated with fertility control PZP. Specific instructions are outlined in IM 2004-138 in regards to removal of these animals.

Timeframe: The wild horse and burro gather and selective removal requirements identified in this IM are effective immediately and will expire on September 30, 2006.

Budget Impact: Once AML is attained, it will cost approximately \$1.7 million in additional gather costs annually to implement the selective removal policy. This action, on an annual basis, will avoid removal of about 1,500 unadoptable animals (older than five years) that would cost about \$10 million to maintain in captivity over their lifetime.

This policy will achieve significant cost savings by minimizing the numbers of less adoptable animals removed prior to the achievement of AML and making the removal of older animals negligible in future years.

Background: The 1992 Strategic plan for the WH&B program defined criteria for limiting the age classes of animals removed so that only the most adoptable animals were removed. The selective removal criteria from Fiscal Years 1992 through 1995 allowed the removal of animals five years of age and younger. In 1996, because of drought conditions in many western states, the selective removal policy was changed to allow for the removal of animals nine years of age and younger. In 2002, the removal policy was modified to allow for prioritized age specific removals: 1st priority remove five years of age and younger animals, 2nd priority 10 years and older and last priority animals aged six to nine years if AML could not be achieved.

This selective removal policy provides for the long term welfare of on the range populations, emphasizes the removal of the most adoptable younger animals to maintain and achieve AML and directs that older horses less able to stand the rigors of capture, preparation, and transportation stay on the range.

Manual/Handbook Sections Affected: The gather and selective removal requirements do not change or affect any section of any manual or handbook.

Coordination: Varying policies on selective removal have been in place and coordinated with field staffs since the early 1990's. The revised policy was developed by the WO, circulated to field offices for review and comment, and presented to the National Wild Horse and Burro Advisory Board. In addition, the concept of selective removal was part of the FY 2001 Strategy to Achieve Healthy Lands and Viable Herds; The Restoration of Threatened Watersheds Initiative that was widely communicated to Congress and the general public.

Contact: Questions concerning this policy should be directed to Dean Bolstad in the Wild Horse and Burro National Program Office, at (775) 861-6611.

Signed by:
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Renewable Resources and Planning

Authenticated by:
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Policy & Records Group, WO-560

2 Attachments

- 1 - Request to Gather Memo (1 p)
- 2 - Gather and Removal Report (1 p)