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Bureau of Land Management**

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FINAL

**Callaghan & New Pass/Ravenswood Complex
Wild Horse Gather Plan**

Fertility Control with Limited Removal



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U.S. Department of the Interior
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Photos on cover clockwise from upper left: Riparian area within the New Pass/Ravenswood HMA, August 2010, wild horses released back to the Rocky Hills HMA January 2009, morning sky, Callaghan HMA December 2008, wild horses running in the Bald Mountain HMA, September 2009, lone wild horses in the Callaghan HMA August 2010.

1. Introduction

The Bureau of Land Management (BLM) is proposing to gather 866 wild horses and remove 221 excess wild horses from the Callaghan Complex and New Pass Ravenswood Herd Management Area (HMA) beginning in December 2010. Approximately 645 wild horses would be released back to the range following the gather. Of these, about 323 mares would be vaccinated with PZP-22 (Porcine Zona Pellucida) fertility control vaccine to slow population growth, maintain population size within the Appropriate Management Levels (AMLs), and extend the time before another gather to remove excess wild horses would be needed. Although only mares would be administered the fertility control vaccine, a sufficient number of wild horses need to be gathered so as to treat the targeted number of mares.

This Environmental Assessment (EA) is a site-specific analysis of the potential impacts that could result from the implementation of the Proposed Action or alternatives to the Proposed Action. Preparation of an EA assists the BLM authorized officer to determine whether to prepare an Environmental Impact Statement (EIS) if significant impacts could result, or a Finding of No Significant Impact (FONSI) if no significant impacts are expected.

1.1. Background

The Callaghan Complex consists of the Callaghan, Bald Mountain and Rocky Hills HMAs, and is located in Lander County, about 55 miles south of Battle Mountain, Nevada and 45 miles northwest of Eureka, Nevada. See Map 1. The New Pass/Ravenswood HMA is located several miles west of the Callaghan HMA, also within Lander County, and several miles northwest of Austin, Nevada. A portion of the New Pass/Ravenswood HMA is located within Churchill County within the administrative boundaries of the Carson City District Office (CCDO). The Battle Mountain District Office (BMDO) currently maintains the administration of the entire HMA. The Appropriate Management Levels (AMLs) for wild horses within these HMAs is displayed in the following table.

Table 1: HMA Acreage and AML

HMA	Acres	AML
Callaghan	156,157	134-237
Bald Mountain	139,878	129-215
Rocky Hills	83,994	86-143
New Pass/Ravenswood	285,800	545-566
Total	640,148	894-1,161

The AMLs for these HMAs were established in Final Multiple Use Decisions (FMUDs) issued by the Mount Lewis Field Office following completion of Allotment Evaluations or Rangeland Health Assessments and EAs between 1991 and 2005 (refer to Section 1.4). These AMLs were established following the collection, analysis, and interpretation of many years of monitoring data, which included precipitation, use pattern mapping, trend, production, census/inventory, and carrying capacity analysis, and through coordination with the interested public. Monitoring data including vegetation trend, utilization, riparian functioning condition, wild horse inventory and distribution, actual use and climate data has been collected through an ongoing monitoring program since the AMLs were established. Refer to the documents identified below and in section 1.4 for more detail about the AMLs for the HMAs involved.

Establishing AML as a population range allows for the periodic removal of excess animals (to the low range) and subsequent population growth (to the high range) between removals. The upper limit of the

AML is the maximum number of wild horses that can graze in a thriving natural ecological balance and multiple use relationship on the public lands in the area. The BLM's current guidance is to establish AMLs as a range; however the AML for the BMDO portion of the New Pass/Ravenswood HMA was established prior to this guidance and was set as a single number, which represents the upper limit of AML. The CCDO portion of the AML was established as a range (69-90 animals) thus resulting in the above identified AML range for the whole HMA. As a result, the AML is not a true range and overstates the low AML. A true range will be established in the future which would set a low AML which would allow an approximate 4 year gather cycle (or other appropriate cycle) based on the anticipated annual population increases. The low range of AML based on 17.5-20% annual increase and four year interval between gathers would approximate 330-350 wild horses. In other cases where the BLM has not established an AML low range, gathers are conducted to gather below the AML so as to allow for 3-4 years before the population would exceed AML.

Additionally, the New Pass/Ravenswood HMA has endured serious wildfires on two occasions (1999 and 2007). Following each, gathers were conducted to remove wild horses from the burned areas so as to allow for recovery of the burned areas and not jeopardize the success of rehabilitation/re-seeding efforts. Most recently, the 2007 New Pass Ravenswood EA described below identified the need (Section 1.1) to remove 300 wild horses from the northern portion of the HMA in order to exclude wild horses from the burned areas, leaving an estimated post gather population of 229 wild horses within the southern portion of the HMA. Due to resource concerns, the need was identified to manage the population within the HMA at a level lower than the established AML range and lower than a true range as described above in order to allow rangeland resources to recover. Currently, the estimated population is 504 wild horses, with a large portion of the animals located within the areas previously burned and still in recovery from wildfire.

The BLM prepared EAs to analyze the potential impacts associated with the previous gathers which were completed in November 2007 (New Pass/Ravenswood) and December 2008/January 2009 (Callaghan Complex); this EA tiers to the prior gather EAs and the analysis contained therein is incorporated by reference. These EAs are available on the Battle Mountain District web-site located at this address. http://www.blm.gov/nv/st/en/fo/battle_mountain_field/blm_information/national_environmental.html. The following EAs were completed for these previous gathers:

New Pass/Ravenswood HMA

*New Pass/Ravenswood and Augusta Mountains HMAs Burned Area Wild Horse Removal Gather Plan and EA # NV062-EA07-188 (September 2007).*¹

This EA was completed for both the New Pass/Ravenswood and Augusta Mountains HMAs after wildfire burned within the HMAs in July 2007. The Augusta Mountains HMA is not included within this proposed gather and a future gather of this area would be analyzed within a separate document completed by the Winnemucca District Office.

The New Pass/Ravenswood HMA was last gathered in November 2007. At that time, 622 animals were captured, 464 removed and 92 mares treated with PZP-22 before being re-released back to the HMA. A total of 158 animals were re-released to the range to result in a post gather estimated population of 208-268.

1. Hereafter referred to as the 2007 New Pass/Ravenswood EA.

A flight was conducted in September 2008 and September 2009 to monitor the population size and growth rates following the application of fertility control. Both of these were aerial population inventories using the direct count method. A total of 407 wild horses were observed in 2008, of which 20% or 81 were foals. Refer to Section 3.2 for more information. The 2009 flight represents the first year of fertility control effectiveness. During the flight, a total of 444 animals were observed with 50 or 11.2% representing foals. Percent foals observed during September inventory flights within this HMA have been 18-21% since 2005. The current estimated population based on the 2009 inventory and 2010 foal crop is 504 wild horses.

Callaghan Complex

The Callaghan Complex Wild Horse Gather Environmental Assessment NV062-EA08-134 (September 2008)² was completed for a gather of the Callaghan Complex HMAs in December 2008 and January 2009. At the time, the gather also included capture of horses from a horse-free area of the South Shoshone HMA and from areas outside of HMA boundaries in the Simpson Park Mountains. A small number of wild horses were also removed from United States Forest Service (USFS) lands outside of any HMA or Wild Horse Territory boundaries. A total of 1,705 wild horses were captured, of which 1,462 were removed and 243 re-released back to the range. A total of 121 mares were treated with the fertility control vaccine PZP-22 prior to release back into the Complex. The estimated post-gather population after the gather was 343-349. Refer to Section 3.2 and Appendix B for more information about these gathers.

A post gather flight of the Callaghan Complex was completed in September 2009 to observe animal health, percent of foals and post gather population size as compared to the estimate. A direct count of 525 wild horses was observed within the three HMAs; with 16.9% of the population comprised of foals (fertility control would not have been effective until 2010). The current 2010 population is estimated to be 579 wild horses based on the 2009 inventory and the estimated 2010 foal crop resulting from year-one fertility control effectiveness. Refer to Section 3.2 for more information.

1.2. Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to manage wild horses for a thriving natural ecological balance by gathering approximately 866³ wild horses, removing some 221 excess wild horses, and releasing approximately 645 wild horses after treating or re-treating all released mares with PZP-22 vaccine.

This action is needed to continue to slow population growth rates, maintain population size within AML, and extend the time before another gather would be needed to remove excess wild horses. By maintaining population size within AML, rangeland resources would be protected from the deterioration associated with wild horse overpopulation, and a thriving natural ecological balance and multiple use relationship on public lands in the area consistent with the provisions of Section 1333(a) of the Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA) would be



Wild horses run through the snow in the Callaghan HMA prior to the December 2008 gather.

2. Hereafter referred to as the 2008 Callaghan Complex EA.

3. The estimated gather number is based on 80% gather efficiency which would be affected by terrain, climate, cover and other factors.

maintained. The action would also result in fewer wild horses being placed in short or long-term holding or the adoption and sale programs over the next 10-20 years.

Comments received from the public for BLM gathers over the past few years have emphasized the desire for BLM to increase the use of fertility control in order to reduce the number of wild horses that have to be removed from the range or maintained in Long Term Holding Pastures. This proposed gather is the result of National BLM direction to increase the use of fertility control to maintain wild horses within AML with fewer necessary removals.

The following is a message from the BLM Director Bob Abbey: *“The BLM finds itself in the predicament of needing to gather overpopulated herds from the Western range each year while its holding costs keep rising – with no end in sight. Recognizing this unsustainable situation, the Government Accountability Office, in a report issued in October 2008, found the Bureau to be at a “critical crossroads” because of spiraling off-the-range holding costs and its limited management options concerning unadopted horses.*

*In response, Secretary of the Interior Ken Salazar and I announced on October 7, 2009, a new and sustainable way forward for managing our nation’s wild horse horses and burros. We recommended **applying new strategies aimed at balancing wild horse and burro population growth rates with public adoption demand to control holding costs** [emphasis in original]. This effort would involve slowing population growth rates of wild horses on Western public rangelands through the aggressive use of fertility control, the active management of sex ratios on the range, and perhaps even the introduction of non-reproducing herds in some of the BLM’s existing Herd Management Areas in 10 Western states”. Refer to the entire message at http://www.blm.gov/wo/st/en/prog/wild_horse_and_burro/national/about/director.html*

The following is a quote from the Humane Society for the United States (HSUS): *“The HSUS strongly supports an increase in the use of fertility control – specifically the Porcine Zona Pellucida (PZP) immunocontraception vaccine – and sex ratio adjustments to slow population growth. This work should immediately be expanded to as many herds as possible as an alternative to gathers and long term holding. With an efficacy rate of over 90%², a comprehensive contraception program could dramatically reduce the financial burden on the agency and allow the BLM to once again focus its resources and efforts on range management programs” (HSUS 2010).*

To further implement this strategy of increasing population controls as a management tool, the 2011 BLM wild horse gather schedule includes numerous gathers that are identified as “Capture, Treat and Release, with Limited Removals”, where the objective is to re-gather areas that are not substantially in excess of AML (thus reducing the number of excess animals that have to be removed), treat (or re-treat as applicable) gathered mares with fertility control and release most horses back to the range. This strategy would result in the removal of only limited numbers of excess wild horses consisting mainly of weanlings, for which there is the greatest adoption demand.

The Proposed Action and the Purpose and Need for the Proposed Action are consistent with these messages and National direction.

1.3. Land Use Plan Conformance

The Proposed Action is in conformance with the Shoshone-Eureka Resource Area (SERA) Resource Management Plan (RMP) Objectives (Shoshone-Eureka RMP Record of Decision dated 1986 and Shoshone-Eureka RMP Amendment, Record of Decision dated 1987).

Wild Horse & Burro Management Objectives:

- 1) To manage viable herds of sound, healthy wild horses in a wild and free roaming state.
- 2) To initially manage wild horse populations at existing numbers based on the 1982 aerial counts and determine if this level of use can be maintained.
- 3) To manage wild horses within the areas which constituted their habitat at the time the Wild and Free-Roaming Horse and Burro Act became law in 1971.

1.4. Relationship to Statutes, Regulations, Policy, Plans or Other Environmental Analysis

The Proposed Action is in conformance with the Wild Free-Roaming Horses and Burros Act (WFRHBA) of 1971 (Public Law 92-195, as amended), Section 302 (a) and (b) of the Federal Land Policy and Management Act (FLPMA) of 1976, the Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4), the Code of Federal Regulations (CFR) at 43 CFR §4700, and policies. Applicable excerpts are as follows:

Where the Secretary determines . . . that an overpopulation exists . . . he shall immediately remove excess animals from the range so as to achieve appropriate management levels. Such action shall be taken . . . until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation.

The law also provides that determinations will be made “*whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels)*” [emphasis added]. FLPMA amended the WFRHBA with “*In administering this Act, the Secretary may use or contract for the use of helicopters or, for the purpose of transporting captured animals, motor vehicles. Such use shall be undertaken only after a public hearing and under the direct supervision of the Secretary or of a duly authorized official or employee of the Department*”.

PRIA directs the continued “*policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values*”.

BLM policy IM 210-135, states at Section E: “*During gather or herd management area planning, the authorized officer will consider a range of alternatives to reduce (slow) population growth rates and extend gather cycles for all wild horse herds with annual growth rates greater than or equal to 5%. These alternatives may include (but are not limited to): fertility control, adjustments in the sex ratio in favor of males, a combination of fertility control and sex ratio adjustment, and management of selected HMAs for non-reproducing wild horses*”. Similar direction is also located at Section 4.5.3 of the Wild Horses and Burros Management Handbook H 4700-1.

The numerous FMUDs, Evaluations, Rangeland Health Assessments and EAs completed during AML

establishment and prior wild horse gather EAs for these HMAs are listed below:

The Callaghan Complex Wild Horse Gather Environmental Assessment NV062-EA08-134 (September 2008)

New Pass/Ravenswood and Augusta Mountains HMAs Burned Area Wild Horse Removal Gather Plan and EA # NV062-EA07-188 (September 2007)

Area Managers Final "Full force and effect" Multiple Use Decision for the Austin Allotment (1995)
Final Austin Allotment Evaluation (1994)

Environmental Assessment NV062-00-03, Burned Area Wild Horse Removal, Rocky Hills, New Pass/Ravenswood, Simpson Park Mountains (1999)

Grass Valley Allotment Rangeland Health Assessment Data Summary (2002)

Final Multiple Use Decision for the Grass Valley Allotment (2002)

Callaghan Herd Management Area Wild Horse Gather Plan and Environmental Assessment NV062-02-41 (2002)

JD Allotment Rangeland Health Assessment Data Summary (2003)

JD Allotment Evaluation Environmental Assessment NV062-04-07 (2004)

Final Multiple Use Decision for the JD Allotment (2004)

Carico Lake Allotment Final Multiple Use Decision (2005)

Carico Lake Allotment Rangeland Health Assessment (2005)

Carico Lake Allotment Rangeland Health Assessment Environmental Assessment NV062-05-61 (2005)

Simpson Park Complex Evaluation and Rangeland Health Assessment (2005)

Final Multiple Use Decision Kingston and Simpson Park Allotments (2005)

Environmental Assessment NV062-EA04-35, Simpson Park Range Wild Horse Removal (2005)

Austin Complex Monitoring Report (2007)

Austin Complex Environmental Assessment NV-062-07-83 (2007)

Final Decision, Austin Complex Permit Renewal (2007)

South Shoshone Complex Wild Horse Gather, Environmental Assessment NV062-07-104 (2007)

Burned Area Wild Horse Removal Environmental Assessment NV062-EA00-03 (1999)

Final Multiple Use Decision for the Manhattan Mountain Allotment (1991)

Final Multiple Use Decision for the Gilbert Creek Allotment (1992)

1.5. Conformance with Rangeland Health Standards and Guidelines

Refer to the 2008 Callaghan Complex EA page 5 and the 2007 New Pass/Ravenswood EA page 9. Maintenance of wild horse population size within AML would avoid the damage to the range that results from wild horse overpopulation.

1.6. Decision to be Made

The authorized officer would determine whether to implement the proposed gather in order to bring the wild horse population back to AML and to vaccinate all of the captured mares that would be released with fertility control vaccine in order to maintain population size within the established AML and avoid the deterioration of the range that can result from wild horse overpopulation. Approximately 221 excess wild horses, mostly weaned foals or yearlings, and any wild horses residing outside the HMA boundaries would be removed from the range to return the population size to within the AML ranges. The authorized officer's decision would not set or adjust AML, or adjust livestock use, as these were set through previous decisions (refer to the EAs identified in Section 1.1).

1.7. Scoping and Identification of Issues

Due to the lack of substantial comment to the original EAs in 2007 and 2008, scoping letters were not issued to the interested public list for this proposed gather. Comments were instead solicited with the issuance of a Preliminary EA and have been incorporated, as appropriate, into this Final EA. The following issues were identified as a result of internal scoping relative to the BLM's proposed fertility control treatment of wild horses (mares) in the planning area.

1. Impacts to individual wild horses and the herd. Measurement indicators for this issue include:
 - Projected population size and annual growth rate (Win-Equus population modeling)
 - Expected impacts to individual wild horses from handling stress
 - Expected impacts to herd social structure
 - Expected effectiveness of proposed fertility control application
 - Potential effects to genetic diversity
 - Potential impacts to animal health and condition
2. Impacts to vegetation/soils, and riparian/wetland. Measurement indicators for this issue include:
 - Expected forage utilization, and changes in vegetation trend
 - Potential impacts to vegetation/soils and riparian/wetland resources
3. Impacts to wildlife, migratory birds, and special status species and their habitat. Measurement indicators for this issue include:
 - Potential for temporary displacement, trampling or disturbance
 - Potential competition for forage and water over time

Other issues of concern include the following:

New Pass/Ravenswood HMA:

- Concentrations of wild horses within the HMA, especially in the northern portion that burned in 1999 and 2007, which could impede rehabilitation and improvement of these areas
- Potential movement of wild horses from Clan Alpine HMA into the New Pass/Ravenswood HMA.
- Heavy trailing throughout the HMA, especially to water sources
- Riparian areas receiving impacts from concentrated use by wild horses
- Past animal condition less than optimal

Callaghan and Bald Mountain HMAs

- Condition of wild horse habitat due to past overpopulation of wild horses
- Uneven distribution of wild horses throughout the HMAs

Rocky Hills HMA

- Condition of wild horse habitat due to past overpopulation of wild horses
- Uneven distribution of wild horses throughout the HMA
- Limited water sources

The Notice of Availability of the Preliminary EA and Gather Plan for the Callaghan Complex and New Pass/Ravenswood HMA was sent to the interested public list for the gather area on September 2, 2010

for a 30 day review and comment period. This list included ninety individuals, organizations, County officials, and State and Federal Agencies. Among these was the Nevada State Clearinghouse which made the EA available for review by thirty-seven Nevada State Agencies. The EA and associated documents were posted on the Battle Mountain District and Nevada BLM websites, and the Nevada State Office issued a news release notifying the general public of the availability of the document for review which was also posted on BLM's external website. The news release was issued to a list of over 100 media sources in Nevada and California as well as Nevada Congressional representatives. The 2007 New Pass/Ravenswood HMA EA and 2008 Callaghan Complex EA were also posted on BLM's website for the public's information.

The comment period was extended to October 10 as a result of errors printed in the news release which incorrectly identified the e-mail address for comments. The web link to the EA was also found to be confusing for some members of the public who wished to view the document, which was also fixed.

All comments were reviewed and considered prior to completing the Final Gather EA. Several letters were received in support of the gather as well as against the gather. Numerous form letters were received, which were generated from members of an animal welfare organization. These comments are summarized within Appendix E. Some additions were made to the EA for clarification purposes; however, no substantial modifications were made to the EA as a result of the comments received.

2.0. Proposed Action and Alternatives

2.1. Introduction

This section of the EA describes the Proposed Action and alternatives, including any that were considered but eliminated from detailed analysis. Two alternatives are considered in detail:

- **Proposed Action Alternative:** Capture about 866 wild horses in order to remove 221 excess animals and release all remaining gathered horses after vaccinating or re-vaccinating all the released mares (approximately 323 animals if 50% of captured horses are mares) with PZP-22 fertility control vaccine. All wild horses residing outside the HMA boundaries would be removed from the range, as well as weanlings and any additional horses necessary to achieve a population at or near the low range of AML.
- **Alternative 1:** Delay of gather. A gather to apply fertility control vaccine to mares would not occur at this time; however, future gathers to remove excess wild horses would be scheduled when the AML upper limit is exceeded and/or other resource management objectives are not being met. Wild horses would continue to reside outside the HMA boundaries.

The Proposed Action was developed to respond to the Purpose and Need. The BLM intends to return to these areas in 2-3 years to re-treat any previously treated mares and any new mares to continue with population control activities as well as to remove excess wild horses as specified in this EA. Alternative 1 takes the place of No Action in this EA (refer to Section 2.4) as no gather would take place at this time and would be re-considered in future years (and analyzed in an appropriate NEPA document). Alternative 1 would not achieve the identified Purpose and Need. However, it is analyzed in this EA to provide a basis for comparison with the Proposed Action, and to assess the effects of not conducting a gather at this time. Alternative 1 was developed to represent status quo, or the present management of

gathering HMAs on a frequency of about 5 years without implementation of population control measures.

2.2. Description of Alternatives Considered in Detail

Proposed Action Alternative: Under the Proposed Action, about 866 wild horses would be gathered from within and outside the Callaghan Complex and New Pass Ravenswood HMA. The proposed gather would begin in December 2010 and take about 4 weeks to complete. All gather operations would be completed in accordance with the Standard Operating Procedures (SOPs) located in Appendix A. The BLM intends to return to these areas in 2-3 years to re-treat mares to continue with population control activities as well as to remove excess wild horses as specified in this EA. Approximately 221 excess wild horses, mostly weaned foals and yearlings, and any wild horses residing outside of the HMA boundaries would be removed from the range. Approximately 645 of the captured wild horses would be released; of these, about 323 would be mares treated with fertility control vaccine as follows:

- All of the release mares would be treated/retreated with a two-year Porcine Zona Pellucida (PZP-22) vaccine and released back to the range. Fertility control treatment would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs, Appendix C).
- Post-gather, every effort would be made to return the released horses to the same general area from which they were gathered.
- The removal target would be to attain low AML for each HMA, when possible, with an emphasis on primarily young animals that are weanlings or yearlings, returning all remaining wild horses to the HMAs.
- All wild horses located outside of HMA boundaries would be removed.
- Several factors such as animal condition, herd health, weather conditions, or other considerations could result in adjustments in the schedule.

The estimated gather figure is based on the ability to gather approximately 80% of the population. This figure was chosen based on the estimated gather efficiency of the previous gathers, derived from actual capture numbers and post gather inventory flights. It is possible that gather efficiency could be higher, or lower which could result in slight changes to the number of animals captured, removed and treated. The current population and gather and removal numbers are based on the most recent inventory flight. Due to terrain, vegetation, topography and seasonal movement, the current population is based on the best available data and may change with subsequent population inventories.

The target number of animals for removal represents approximately 20% of the current estimated population. The objective for this proposed gather is to remove primarily weanlings and some yearlings and all animals residing outside of HMA boundaries; regardless of age. Younger animals removed from the range would be healthy and highly adoptable and would not be shipped to Long Term Holding Pastures (LTHPs). If necessary to meet gather objectives all ages of wild horses could be removed, but would be limited to mostly young animals less than 3 years of age, if possible. It is estimated that few animals would be removed that would need to be maintained in LTHPs. The goal of the gather and removal for each HMA would be to achieve the low AML if possible. The proposed gather would not include any US Forest Service managed lands, as it is estimated that less than 6 wild horses exist on the USFS outside of the Callaghan HMA boundaries.

The primary gather (capture) method would be the helicopter drive method with occasional helicopter assisted roping (from horseback). Gather corral sites and temporary holding facilities would be located

in previously used sites or other disturbed areas whenever possible. Undisturbed areas identified as potential trap sites or holding facilities would be inventoried for cultural resources. If cultural resources are encountered, these locations would not be utilized unless they could be modified to avoid any impacts.

An Animal and Plant Inspection Service (APHIS) or other veterinarian may be on-site during the gather, as needed, to examine animals and make recommendations to the BLM for care and treatment of wild horses. All excess wild horses removed from within and outside the HMAs would be made available for adoption or sale to qualified individuals. Any old, sick or lame horses unable to maintain an acceptable body condition (greater than or equal to a Henneke⁴ body condition score (BCS) of 3 or with serious physical defects such as club feet, severe limb deformities, or sway back would be humanely euthanized as an act of mercy. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy (Washington Office Instruction Memorandum 2009-041). Refer to: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-041.html

Terrain throughout the proposed gather area is variable. Wild horses would typically be trailed approximately 4-7 miles to gather corrals. Some groups of horses could be herded 10 miles or more at the discretion of the BLM staff on site at the gather. Most horses would be located throughout foothills and other rolling terrain, and some animals could be trailed from within drainages or higher elevation areas. The pilot uses the helicopter to direct the wild horses towards the capture location, then stays back away from them (1/4 mile or farther), allowing them to travel at their own pace – usually a trot or light gallop. Only if the wild horses begin to deviate from the desired path, does the pilot redirect them with the helicopter.

When the wild horses approach the gather corrals, the pilot moves the helicopter closer to the animals to apply additional pressure to make sure that the group does not scatter before entering the wings of the capture corrals, to avoid the need to regroup or rope the animals by horseback, which would add additional stresses to the animals and increase risk of injury. Contrary to the view of some members of the public, wild horses and burros are not “driven” or “stampeded” during the helicopter gather or upon reaching the capture corrals. Experience has proven over the last 30 years of gathers that helicopters provide an effective, safe and humane method of gathering wild horses and this is done by having helicopter bring the animals to the capture corrals slowly.

The pilot allows the wild horses to travel at their own pace. This allows the wild horses that are old, young animals that may be in the group, or animals that are suffering from lack of food or water and are in a weakened state to travel safely to the gather location without much additional stress or complications⁵. If foals are separated from mothers, the pilot alerts crew members of the foal’s location. The crew members will then go to the area and guide the foal to the gather location by horseback or by loading the foal into a stock trailer for transport to the gather corrals where it is reunited with its mother. BLM staff would coordinate with the contractor on a daily basis to determine animal locations in proximity to trap corrals, and to discuss terrain, animal health, gather distances and other gather logistics to ensure the safety and well-being of the animals being gathered.

4. Refer to the Henneke body condition score chart at the end of Appendix A.

5. Animal health issues relating to lack of forage or water are not expected during the proposed gather, as the population is currently near the upper limit of AML due to the gathers conducted in 2007 and 2008/2009.

Data including sex and age distribution, condition class information (using the Henneke rating system), color, size and other information may also be recorded. Genetics sampling was conducted during the most recent gathers and would not be re-sampled during this proposed gather, as the results do not indicate the need to re-assess the genetics of these herds this soon.

Alternative 1: Under Alternative 1, a gather would be delayed for several years and fertility control application would not be undertaken to control the size of the wild horse population within the established AML range at this time. Gathers would be scheduled in the future depending upon National and State budget and gather priorities. It is estimated that another gather within the New Pass/Ravenswood HMA would not be scheduled before fall of 2012, and within the Callaghan Complex before fall of 2013. The current populations would be allowed to increase until the next gather occurred to remove excess wild horses.

2.3. Summary Comparison of Alternatives

Table 2. Comparison of Alternatives

Alternative	HMA	2010 Estimated Population ⁶	2010 Est. Gather Numbers ⁷	2010 Removal Numbers	2010 Post Gather Population ⁸	2010 Fertility Control (mares)
Proposed Action	Callaghan	264	211	60	204	79
	Bald Mountain	150	120	21	129	43
	Rocky Hills	165	132	40	125	49
	New Pass/Ravenswood	504	403	100	404	152
	Total	1,083	866	221	862	323
Alternative 1	Callaghan	264	0	0	264	0
	Bald Mountain	150	0	0	150	0
	Rocky Hills	165	0	0	165	0
	New Pass/Ravenswood	504	0	0	504	0
	Total	1,083	0	0	1,083	0
AML: 894-1,161						

The above table reflects a post gather population for the Callaghan, Bald Mountain and Rocky Hills HMAs within the established AML ranges. The New Pass/Ravenswood HMA post gather population is also lower than the AML range. The New Pass/Ravenswood HMA does not have a true or official low AML range established, and thus the existing range which is a result of a range set on only a small portion of the HMA, overstates the low end of AML. As described in Section 1.1, the low AML for this HMA would approximate 330-350 wild horses, and the low AML for the entire gather Complex would approximate 679-699. Additionally, the current population of the New Pass/Ravenswood HMA has resulted from removals during the 2007 gather which reduced the population below the existing AML range due to extensive wildfire in the northern portion of the HMA, which is still recovering at this time (refer to the 2007 Gather EA). It is for these reasons that the post gather population of the New Pass/Ravenswood HMA is identified as 404 wild horses.

6. A pre-gather inventory flight will be conducted in mid-November and gather and removal numbers adjusted accordingly.
 7. Gather target based on the ability to gather 80% of the population. The gather efficiency will depend upon weather and site specific conditions of the gather and could be greater or less than the estimate.
 8. The post gather population equals the estimated 20% un-captured wild horses plus the wild horses released.

2.4. Alternatives Considered but Eliminated from Detailed Analysis

Numerous alternatives were considered but eliminated from detailed analysis within the 2008 Callaghan Complex and the 2007 New Pass/Ravenswood Gather EAs identified in Section 1.1. Please refer to those documents for more information. Through issuance of Gather EAs by the BMDO, most comments received have focused on those already addressed in these documents. Additional Alternatives not included in those documents are discussed below.

Alternative capture techniques instead of helicopter capture of excess wild horses

Within Nevada, scoping and issuance of Gather Plan EAs for wild horse and burro gathers has resulted in comments from the public requesting that the BLM capture animals through alternative methods. The following is a summary of some of those methods with information about their use.

- Net gunning techniques normally used to capture big game animals also rely on helicopters. These methods can be safe and effective on a small scale with optimum ground conditions and access. The use of this method is not practical on a large scale and can result in additional injury to animals, humans and environmental impacts due to the need for cross country off-road travel to access netted animals.
- Chemical immobilization is a very specialized technique and strictly regulated. Currently the BLM does not have sufficient expertise to implement this method and it would be impractical to use given the size of the HMAs, access limitations and approachability of the horses.
- Use of wrangler on horseback drive-trapping to remove excess wild horses can be fairly effective on a small scale but due to number of horses to gather, the large geographic size of the HMAs, and approachability of the animals this technique would be ineffective and impractical. Wild horses often outrun and outlast domestic horses carrying riders. Helicopter assisted roping is typically only used if necessary and when the wild horses are in close proximity to the gather site.
- Horseback drive-trapping is also very labor intensive and can be very harmful to the domestic horses used to herd the wild horses and dangerous to humans. For these reasons, this method was eliminated from further consideration.

No Action Alternative

A detailed No Action Alternative was analyzed within the previous EAs completed for these HMAs (identified in Section 1.1). Additionally, Alternative 1 is similar to a No Action Alternative in that a gather would not occur at this time, and would be scheduled in future years depending upon National and Nevada gather priorities. A “true” No Action Alternative that reflects a situation where a gather *never* occurs was previously analyzed and would be analyzed again in future gather planning documents. For these reasons it is not analyzed in detail in this document. Refer to Appendix D, Population Modeling Summary which includes some information pertaining to a true No Action Alternative.

3. Affected Environment and Environmental Consequences

This section of the EA briefly discusses the relevant components of the human environment which would be either affected or potentially affected by the Proposed Action or Alternative 1. Direct impacts are those that result from the management actions while indirect impacts are those that exist once the management action has occurred.

In preparing this environmental analysis, the elements of the human environment subject to requirements in statute, regulation, or executive order (supplemental authorities) which were considered in preparing the 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs, identified in Section 1.1 were reviewed. No change to the supplemental authorities or other resources of the human environment was identified, with the exception of a Health and Safety Section. Those supplemental authorities present and potentially affected by the Proposed Action and/or Alternative 1 and analyzed below include:

Cultural Resources ⁹	Threatened or Endangered Plant and Animal Species
Riparian-Wetland Zones and Water Quality	Noxious weeds, Invasive & Non-Native Species
Migratory Birds	

In addition to the supplemental authorities, the following resources may be affected by the Proposed Action and/or Alternative 1:

Livestock Management	Special Status Species (plants and animals)
Rangeland Vegetation Resources	Wild Horses and Burros
Soils	Wildlife
Health and Safety	

The 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs described the Affected Environment and Environmental Consequences of a wild horse gather of these areas in detail. These documents have been reviewed and determined to be current and completely applicable to the proposed gather. Please refer to those documents for more detail. The following sections describe the existing situation (affected environment) relative to these resources. Only pertinent and current information is included within the sections below.

3.1. General Description of the Affected Environment

The New Pass/Ravenswood HMA is located 35 miles northwest of Austin, Nevada in Lander and Churchill Counties. The HMA encompasses 285,800 acres, is 18 miles wide and 24 miles long, and consists of north-south trending mountain ranges surrounded by valley bottoms. The New Pass Range provides the western boundary of the HMA, with the Ravenswood Mountains in the eastern portion of the HMA. Antelope Valley is located between these ranges. A small portion of the HMA exists within public lands administered by the Carson City District. The remainder is located on public lands administered by the Mount Lewis Field Office (MLFO).

The Callaghan HMA is located northeast of the town of Austin, Nevada and encompasses over 156,230 acres of public land. The HMA is approximately 27 miles long and 16 miles wide. The entire Callaghan HMA lies in Lander County at the north end of the Toiyabe Mountain Range.

The Bald Mountain HMA is approximately 139,879 acres in size, and covers an area that is 15 miles wide and 22 miles long. The southern boundary of the Carico Lake Allotment serves as the southern

9. Through adherence of the Standard Operating Procedures (SOPs) (Appendix A), potential impacts to cultural sites would be eliminated. Archeological clearance of gather corrals, holding corrals and others areas of potential effects would occur prior to construction. If cultural resources should be encountered, those locations would not be utilized unless impacts could be avoided.

boundary of the HMA, which borders the Callaghan HMA to the south. The HMA is also in close proximity to the Rocky Hills HMA to the east, and South Shoshone HMA to the west.

The Rocky Hills Herd Management Area is located 54 miles southwest of Elko, Nevada in Eureka County, and encompasses 84,315 acres. The HMA is 15 miles wide, and 13 miles long and includes the Rocky Hills, and the northern portion of the Simpson Park Mountain Range. This HMA is in close proximity to the Bald Mountain, Callaghan, and Roberts Mountain HMAs, and mixing among the herds is likely.



Callaghan HMA, September 2009.

The proposed gather area is located within Central Nevada within the Great Basin. Elevations range between 5,400 feet in the Valleys to over 10,000 at the top of Mount Callaghan. Much of the rangeland at lower elevations consists of salt desert shrub and Wyoming big sagebrush communities. Pinyon and Juniper are prevalent in the mid and upper elevations. Precipitation averages 6-10 inches per year in the valleys and up to 16+ inches in the mountains. Drought conditions may occur 1 out of every 3-4 years. Refer to the documents

referenced in Section 1.1 for more information and Map 1 which displays the HMAs.

3.2. Wild Horses

Affected Environment

Detailed information about the history and the wild horses within the affected HMAs is provided in the EAs completed for the most recent gathers, identified in Section 1.1. Refer also to expanded detail in Appendix B. The following table summarizes the AML, current population, and estimated removal numbers for the affected HMA under the Proposed Action.

Table 3: Summary of Wild Horse Population Information

HMA	Acres	AML Range	Current Population ¹⁰
Callaghan	156,230	134-237	264
Bald Mountain	139,879	129-215	150
Rocky Hills	84,315	86-143	165
New Pass/Ravenswood	285,800	545-566 ¹¹	504
Total	663,224	894-1,161	1,083

Callaghan Complex

10. The current population is estimated from the most recent inventory completed in September 2009, and includes estimated 2010 population growth rates of 12% for New Pass/Ravenswood and 11% for the Callaghan Complex. These rates were estimated conservatively based on the number of foals observed during the first and second year of fertility control effectiveness and the number of treated animals in the population.

11. The Gilbert Creek and Manhattan Mountain Allotment (Mount Lewis Field Office) portions of the HMA have a single AML, which represents the upper level of AML. An official range has yet to be established for this HMA, but the low range (representing the population that should remain after a gather) is lower than reflected by this number.

Between December 12, 2008 and January 22, 2009 a total of 1,705 wild horses were gathered from the Callaghan Complex,¹² 1,462 removed, and 243 released back to the range. Of these, 121 mares were treated with fertility control (Porcine Zona Pellucida, PZP-22) vaccine and freeze-marked for future identification. The estimated post gather population within the Complex was 343-349 wild horses. The following table displays the gather, removal, treatment, release and post gather estimates for the gather.

Table 4: Callaghan Complex Gather Results, 2008/2009

Callaghan Complex Gather Results	Callaghan	Bald Mountain	Rocky Hills	Total ¹¹
Total captured	905	609	145	1,659
Released back to HMA	80	98	65	243
Estimated Un-captured	48-54	31	21	100-106
Treated with Fertility Control	40	49	32	121
Est. Post-Gather	128-134	129	86	343-349
Euthanized/died natural/non-gather	5	3	3	11
Euthanized/died gather related	0	8	0	8

The current estimated population of wild horses in the Callaghan Complex is 579, based on a direct count during an aerial population inventory completed in September, 2009 and includes the addition of the estimated 2010 foals. A post gather aerial inventory of the Complex was completed in September 2009. The estimated 2009 population (pre-inventory) and the direct count observations are shown in the table below:

Table 5: 2009 Callaghan Complex Inventory

HMA	2009 estimated population	2009 Inventory Direct Count (Adult/Foals=Total)	Difference in Adults from gather	% foals
Callaghan	157	202/36=238	+68	15.1%
Bald Mountain	152	111/27=138	-18	19.6%
Rocky Hills	101	123/26=149	+37	17.4%
Total	410	436/89=525	+87	16.9%

The 2009 inventory data indicates that across the Complex, at least 87 additional adults were present that were not captured during the 2008/2009 gather. The lower numbers in the Bald Mountain HMA could be due to several factors including movement into the Callaghan HMA or wild horses that were not observed due to the visibility factors within the HMA (trees, terrain etc). Based on this analysis, the Rocky Hills and Bald Mountain HMA gather efficiency percentage was 71% and 95%, respectively. The fertility control administered during the 2008/2009 gather will be effective in 2010, reducing the number of foals born in 2010. Based on previous application of fertility control in other areas, the 2010 population increase is estimated to be 11%.

During the 2009 inventory, animal condition on the Grass Valley side of the Callaghan HMA were noted to be in good condition, with estimated Henneke body condition scores of moderate (5). One thin horse with an estimated body score of 3.5 (thin/moderately thin) was noted. The horses appeared to be well scattered. On the Austin Allotment side of the HMA, wild horse condition was slightly less with an overall average estimated to be 4.5 (moderately thin/moderate). One young foal estimated to be 1 month

12. The 2008/2009 gather also included a horse free portion of the South Shoshone HMA, USFS and a non-HMA area known as the Simpson Park Mountains, in addition to the HMAs identified as the Callaghan Complex. These additional areas are not included in this proposed gather of the Complex.

of age was observed. Only 18 horses (7.6% of observed numbers) were observed outside of the boundaries of the HMA.

Most groups of wild horses within the Bald Mountain HMA were noted to be healthy and in moderate body condition. Two small groups were noted to include horses that were thin. Most wild horses were located within the HMA boundaries with 17 horses (12.3% of observed numbers) located outside of the boundaries in the north east portion of the HMA. Many trails were noted and springs appearing to be in poor condition were noted which would have been residual from the overpopulation of wild horses prior to the gather. At the time, the animals were fairly well scattered within the HMA with some concentration in the southern portion near the boundary with the Callaghan HMA. It was also noted during the flight that it would have been very easy to miss groups of 4-5 horses within the trees in portions of this HMA.

Within the Rocky Hills HMA, wild horses are continuing to concentrate use in the north-east portion of the HMA near Cadet Trough Spring. Approximately 80 percent of the animals were located here, and one large group of nearly 80 animals was observed. All animals appeared to be in good body condition, averaging moderate condition.

The following table displays the estimated actual use for wild horses (in AUMs) based on the 2009 aerial inventory that was completed for the Callaghan Complex. The figures pertain only to adult animals.

Actual Use (AUMs) – Callaghan Complex

HMA	2009 Actual use	2010 Actual Use
Callaghan	2,424	2,856
Bald Mountain	1,332	1,656
Rocky Hills	1,476	1,788
Total	5,232	6,300

Pre-gather inventory flights are planned for November 2010 for both the Callaghan Complex and the New Pass/Ravenswood HMA to document current presence of foals in the populations and distribution of animals throughout the HMAs.

Vegetation monitoring within the HMAs since the most recent gathers has indicated that slight improvement is occurring, with increased observation of key perennial grass plants and seedlings, reduced trampling and overall reduced appearance of heavy density of wild horses. Refer to Section 3.5 for more information.

New Pass/Ravenswood HMA

The most recent gather of the New Pass/Ravenswood HMA took place between November 3 and 14, 2007. The gather was completed as a result of wildfire that burned through the northern portion of the HMA in July 2007. The following table displays the gather results:

Table 6: New Pass/Ravenswood HMA Gather Results, 2007

Total captured	622
Released back to the HMA	158
Estimated Un-captured	50-110
Treated with Fertility Control	92
Est. Post-Gather	208-268
Euthanized/died natural/non-gather	9

Euthanized/died gather related	4
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The current population estimate of 504 wild horses is based on the post gather estimates and two inventory flights completed in September of 2008 and 2009, with the addition of the estimated 2010 foals.

Following the 2007 gather, an inventory flight was conducted during the summer of 2008 to document animal location and foaling rates prior to the first year of effective fertility control. A total of 407 wild horses were observed within and outside of the HMA. Foals represented 20% or of the total population or 81 horses. With this information, the analysis of the 2008 inventory data revealed 85 more animals than anticipated, which would equate to approximately 68 more adult horses in the population than expected based on earlier population estimates. These animals could have moved in from Augusta Mountain or Clan Alpine HMA, or were not captured during the 2007 gather. If the additional animals represent horses that were not captured during the gather, then the estimated gather success was only 78% or less. The percent of foals observed was higher than that observed during previous flights in 2005 and 2007, which percentages were 17 and 18% respectively.



A gather crew member collects a hair sample for genetics analysis from a horse to be released back to the New Pass/Ravenswood HMA in November 2007.

Another flight was conducted in September 2009 to observe the animal distribution and number of foals in the population given the first year of fertility control effectiveness and the number of un-captured animals. The total observed within and outside of the HMA was 444 with 50 of these (11.2%) represented by foals. Given the fact that there was potentially 178 or more animals un-captured (and untreated) after the 2007 gather, the lowered foaling rate is very good.

2009 was the first year that fertility control vaccine given in 2007 would have been effective. Foals were born normally in 2008 and should have been present in reduced numbers in 2009. The total proportion of foals for the 444 animals observed was 11.2% which is a marked reduction from the past two years. The number of adults observed during the 2009 flight differed by 13 animals from the total number observed in 2008, which indicates consistency between the flights. The number of foals present in 2009 is 61% of the number observed in 2008, which indicates that the fertility control is having an effect in slowing down the overall rate of reproduction. Additionally, the actual population increase from 2008 to 2009 was 9.09%, which is substantially lower than the average annual increase experienced by the MLFO of 17.5%.

The most distinct habitat attribute noted during this flight was the density and frequency of trails throughout portions of the HMA. These trails were noted on the map where they appeared to be in higher frequency or of higher use than expected. Areas without wild horse sign were also noted.

Many of the developed water sources observed during the 2008 and 2009 flights were dry and non-functioning, and wild horse distribution and usage patterns appear to be strongly tied to the remaining functional waters. Most waters appeared to be in poor condition (lack of vegetative cover, trampled and bare banks etc). The riparian areas were small, and water was not plentiful at many sites. Several springs were dry or nearly dry.



Wild horses observed during an aerial inventory of the Callaghan HMA in September 2009.

During the flights, large concentrations of wild horses were observed north of the Steiner Spring area. Concentrations in this area have been noted for many years. It is possible that many of the un-captured animals in 2007 were in this location.

Large concentrations of wild horses were also located in and near the New Pass Range in 2008 and 2009 with 125-140 wild horses observed in this location. It is possible that wild horses have moved east from Clan Alpine HMA into this

area since the 2007 gather.

In 2009, most of the animals observed were in good body condition with acceptable body weight and shiny hair coats. One observation of 3 horses noted that their ribs were visible, and one single horse was noted as being thinner. One larger group of horses in the northern portion of the HMA had a young foal. The rest of the foals observed were average size and were likely born in the early spring months.

In 2007 most wild horses residing outside of the HMA were removed. During the flight in 2008, nine horses (2.2%) were observed outside of HMA boundaries. In 2009, 24 horses (5.4%) were observed outside of HMA boundaries.

The following table displays the actual use (in AUMs) for the New Pass/Ravenswood HMA based on aerial inventory flights in 2008 and 2009 and includes only adult animals.

Actual Use (AUMs) New Pass/Ravenswood HMA

Year	Actual Use
2008	3,912
2009	4,728
2010	5,328
Total	13,968

Please refer to Section 1.1 for additional discussion about the AML for the New Pass/Ravenswood HMA. Refer to Appendix B for more information about the most recent gathers, anticipated age structures, and photos from the recent gathers and inventory flights. In general, the condition of the animals noted during the inventory flights is markedly improved from the condition observed during the previous gathers. In 2007, many of the horses gathered from the northern portion of the New Pass/Ravenswood HMA (especially mares) were on the lower end of condition class 4 (moderately thin). Animals gathered from the southern portion were in much better body condition.

Wild horses gathered from Callaghan HMA in 2008/2009 were not in good body condition and suffered from lack of adequate resources due to overpopulation. Throughout the gather of Callaghan and Bald Mountain HMAs, thin wild horses were captured with little reserves to carry them through the winter. These two HMAs were 5-7 times over the established AMLs, and with the area receiving less than 50% of the normal precipitation by the end of October, forage and water became very limiting for this large population. Overall, the horses captured from the Bald Mountain and Callaghan HMAs were weak and

the gather pilot had to bring the animals to the trap sites very slow and easy. Rocky Hills HMA's wild horses were in good body condition (moderate or better) and there were no health concerns with this population during the gather.

Since the previous gathers, slight improvements have been noted throughout some of the uplands and some riparian areas within these HMAs. However, the habitat still needs substantial improvement as many riparian areas are not functioning properly, especially those that endured or continue to endure heavy use by concentrated numbers of wild horses. Additionally, key perennial grass species are lacking or present in sub-adequate amounts throughout the vegetation communities and are at risk of further decline if there is excessive wild horse use. These areas have a history of wildfire that has also affected the vegetation and rangeland health including a 1,200 acre wildfire that burned in the Rocky Hills HMA in August 2010. Refer to Sections 3.5 and 3.6 for more information.

Genetics Discussion

Hair samples were collected from each of the HMAs during the previous gathers for analysis of genetics. Analysis was conducted by Dr. Gus Cothran, Department of Veterinary Integrative Bioscience, Texas A&M University. A total of 293 samples were analyzed from wild horses released back into the HMAs following the most recent gathers. All reports reflect high genetic variability, with evidence of mixing among herds. The Callaghan HMA results indicated virtually no change from the previous sampling in 2002. The Bald Mountain and Callaghan HMAs were very similar which confirms that they share some degree of common history and current and past mixing is likely. The reports concluded that no action was currently needed to preserve genetic variability as the current variability levels were high enough to avoid loss of variation in the future. Refer to Appendix B for more detail from the genetics reports.

Animal health is expected to be very good during the proposed gather, as these populations are currently near or within AML ranges, and precipitation levels in the past two years have been average. Additionally, the New Pass/Ravenswood HMA is experiencing its 2nd year of effective fertility control, with approximately 82% of the treated mares expected to not foal in 2010. Similarly, the Callaghan Complex is currently within the 1st year of effective fertility control with up to 94% of the treated mares experiencing a reprieve from foaling.

Wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes and do not have the ability to self-regulate their population size. Predation and disease have not substantially regulated wild horse population levels within the proposed gather area. Throughout the HMAs administered by the Battle Mountain District, there are few predators that exist to control wild horse or burro populations. Some mountain lion predation occurs, but it is not believed to be substantial. Coyote are not prone to prey on wild horses unless young, or extremely weak. Other predators such as wolf or bear do not exist. Wild horses in general are very resilient and adaptable animals with a metabolism that has evolved to allow them to survive and thrive in poor quality habitat (compared to their domestic counterparts). These wild animals are typically in top fitness, have strong bones and hooves and rarely succumb to ailments



Bald Mountain HMA gather January 2009 – wild mares await release back to the HMA.

that plague domestic horses. Wild horses typically do not begin to show signs of body condition decline until the habitat components are severely deficient. Once the decline begins, their health deteriorates rapidly.

Impacts of the Proposed Action Alternative

Under the Proposed Action, about 866 wild horses would be captured, 221 removed, and 645 would be released back to the range. The animals to be removed would consist mainly of any wild horses residing outside the HMA, or weaned foals and yearlings; however horses from all age groups could be removed based on a management decision by the authorized officer (COR¹³ or WH&B Specialist). These animals would be transported to a BLM short-term corral facility where they would receive appropriate care, and be prepared for adoption, sale (with limitations) or sent to long-term holding pastures (LTHPs). Only older animals would be offered for sale or transported to LTHPs and it is estimated that this number would be very minimal. Any old, sick or lame horses that would be unable to maintain an acceptable body condition (greater than or equal to a Henneke BCS 3) would be humanely euthanized as an act of mercy.

Fertility control would be applied to all the released mares to decrease the future annual population growth. The procedures to be followed for the implementation of fertility control are detailed in Appendix C. Each released mare would receive a single dose of the two-year PZP contraceptive vaccine. When injected, PZP (antigen) causes the mare’s immune system to produce antibodies and these antibodies bind to the mare’s eggs, and effectively block sperm binding and fertilization (Zoo, Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and the environment, and can easily be administered in the field. In addition, among mares, PZP contraception appears to be completely reversible.

The highest success for fertility control has been obtained when applied during the timeframe of November through February. The efficacy for the application of the two-year PZP vaccine based on winter applications follows:

<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Normal	94%	82%	68%

Under the Proposed Action, these mares could be treated again in 2-3 years and thereafter every 2-3 years which could have the following efficacy for a two year protocol (which was used for the population modeling):

<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Normal	94%	82%	94%	82%	94%

The treatment would be controlled, handled, and administered by a trained BLM employee. Mares receiving the vaccine would experience slightly increased stress levels associated with handling while being vaccinated and freeze-marked. Serious injection site reactions associated with fertility control treatments are rare in treated mares. Any direct impacts associated with fertility control, such as swelling or local reactions at the injection site, would be minor in nature and of short duration. Most mares recover quickly once released back to the HMA, and none are expected to have long term impact from

13. COR=Contracting Officer’s Representative. Usually the Wild Horse and Burro Specialist responsible for that area is present on the gather to administer the gather contract by directing the contractor, documenting activities etc.

the fertility control injections. Mares treated and released during the previous gathers were freeze-marked on the left hip with two 4 inch letters for future identification. These identifiers would be recorded along with age and health of the mare for future analysis. Additional letters could be added for future tracking purposes. Newly captured mares that are not marked would be marked with new freeze-mark letters. This information would also be used to determine the number of mares captured that were not previously treated and provide additional insight to gather efficiency.

One-time application at the capture site would not affect normal development of the fetus, hormone health of the mare or behavioral responses to stallions, should the mare already be pregnant when vaccinated (Kirkpatrick 1995). The vaccine has also proven to have no apparent effect on pregnancies in progress, the health of offspring, or the behavior of treated mares (Turner, 1997). Available data from 20 years of application to wild horses contradicts the claim that PZP application in wild mares causes mares to foal out of season or late in the year (Kirkpatrick and Turner 2003). The PZP vaccine is currently being used on over 75 horse management areas for the National Park Service or the Bureau of Land Management and its use is appropriate for all free-ranging wild horse herds. The long-term goal is to reduce or eliminate the need for gathers and removals (Kirkpatrick et al. 2010).

The Food and Drug Administration (FDA), The Humane Society of the United States (HSUS), and animal care committees all carefully review protocols for PZP use, and more than 20 years of data, carried out under these set of rules, clearly show that wild horses are neither injured by this drug, nor do aberrational behaviors occur as a consequence of its application. Too, oversight by The Humane Society of the United States assures that the vaccine is used only to slow reproduction and may not be used for the extermination of entire herds. PZP is designed to bring about short-term infertility and is reversible, if not used beyond five consecutive years. It reduces the need for gathers and preserves the original gene pool in each herd (Kirkpatrick et al. 2010).

PZP use in wild horse herds has been studied extensively for more than two decades, with papers published in peer-reviewed scientific journals by experienced reproductive physiologists, equine scientists, wildlife biologists, geneticists, and animal behaviorists, providing a portrayal of safety, high efficacy, and absence of long-term behavioral, physical, or physiological effects from the vaccine. This data is of scientific merit, supported by field data, with statistically adequate sample sizes. Data was collected by trained, unbiased individuals, who adhere to established research methodology within his or her respective field (Kirkpatrick et al. 2010).

Ransom et al. (2010) found no differences in how PZP-treated and control mares allocated their time between feeding, resting, travel, maintenance, and social behaviors in 3 populations of wild horses, which is consistent with Powell's (1999) findings in another population. Likewise, body condition of PZP-treated and control mares did not differ between treatment groups in Ransom et al.'s (2010) study. Turner and Kirkpatrick (2002) found that PZP-treated mares had higher body condition than control mares in another population. Mortality rates were reduced below historic levels and the population experienced older age groups that had not been present previously. Treatment extended the lives and improved the health condition of older mares, by removing the stresses of pregnancy and lactation (Kirkpatrick 1995; Kirkpatrick and Turner 2002, 2003; Kirkpatrick et al. 1990, 1991, 1992, 1995a, 1996a,b, 1997; Liu et al. 1989; Turner and Kirkpatrick 2002, 2008; Turner et al. 1996a).

In two studies involving a total of 4 wild horse populations, both Nunez et al. (2009) and Ransom et al. (2010) found that PZP-treated mares were involved in reproductive interactions with stallions more often than control mares, which is not surprising given the evidence that PZP-treated females of other

mammal species can regularly demonstrate estrus behavior while contracepted (Shumake and Wilhelm 1995, Heilmann et al. 1998, Curtis et al. 2002). Ransom et al. (2010) found that control mares were herded by stallions more frequently than PZP-treated mares, and Nunez et al. (2009) found that PZP-treated mares exhibited higher infidelity to their band stallion during the non-breeding season than control mares. Madosky et al. (in press) found this infidelity was also evident during the breeding season in the same population that Nunez et al. (2009) studied, resulting in PZP-treated mares changing bands more frequently than control mares. Long-term implications of these changes in social behavior are currently unknown. Kirkpatrick et al. (2010) conclude by stating that *“the larger question is, even if subtle alterations in behavior may occur, this is still far better than the alternative”* and that the *“other victory for horses is that every mare prevented from being removed, by virtue of contraception, is a mare that will only be delaying her reproduction rather than being eliminated permanently from the range. This preserves herd genetics, while gathers and adoption do not.”* (Kirkpatrick and Turner 2002, 2008; Turner and Kirkpatrick 2002, 2003; Willis et al. 1994.)

Bartholow (2007) concluded that the application of 2 or 3-year contraceptives to wild mares could reduce operational costs by 12-20% or up to 30% in carefully planned population management programs and contraceptive treatment would likely reduce the number of horses that must be removed in total, with attendant cost reductions in the number of adoptions and total holding costs.

Furthermore, the Humane Society for the United States (HSUS, 2010) has also completed analysis of the potential of population control with the modeling work showing that *“more aggressive changes in earlier years will yield more dramatic decreases in later years, obviating the need for removing any horses from the range in the future while still achieving AML”*. The HSUS concludes that the current management program is unsustainable and that *“by replacing the current gather-and-remove programs with gather-treat-and-release programs, the BLM would save approximately \$204 million dollars over 12 years while achieving and maintaining Appropriate Management Levels (AML) on wild horse Herd Management Areas (HMA) on public lands in the U.S”*. The HSUS strongly supports the increased use of fertility control and other population controls, advocating the expansion of these programs as alternatives to gathers and Long Term Holding. The Capture, Treat and Release strategy is a “win-win” for everyone and is a significant turning point for BLM (H. Hazard, Pers. Comm 2010).

The New Pass Ravenswood HMA mares were treated for fertility control in November 2007. They foaled normally in 2008 with 20% foals observed in the population. 2009 (year 2) foaling rates fell to 11.2%. In 2010 (year 3), foaling rates should have risen slightly to an estimated 13-15%. 2011 would represent year 4 of the initial fertility control treatment and year 1 for the current proposed fertility treatment. Some slight effects from the original fertility control treatment should be evident in the population through foaling rates slightly less than normal. The current proposed fertility control treatment would then become fully effective in 2012 (year 2).

The treated mares released to the Callaghan Complex following the gather in December 2008/January 2009 are currently within the first year of fertility control effectiveness (year 2). 2011 would represent year 3 of the initial fertility control treatment and year 1 of the current proposed treatment. Foal presence should approximate 11% or less for this Complex in 2010 and 13-15% in 2011 per the initial fertility control treatment administered in 2008/2009. The current proposed fertility control treatment would become effective in 2012 (year 2). Refer to discussion about the population modeling below and in Appendix D for more detail.

Direct and Indirect Gather Impacts

The purpose of this section is to provide relevant information to the proposed gather and summarize the potential direct and indirect effects to wild horses that could occur with implementation of the Proposed

Mare given fertility control during the 2007 New Pass/Ravenswood HMA gather and freeze-marked for identification. Photo taken during an inventory September 2008.



Action, or the No Action Alternative. Under the Proposed Action, impacts to wild horses would be both direct and indirect, occurring to both individual horses and the population as a whole.

The BLM has been gathering excess wild horses from public lands since 1975, and has been using helicopter for such gathers since the late 1970's. Refer to Appendix A for information about methods that are utilized to reduce injury or stress to wild

horses and burros during gathers. Since 2004, BLM Nevada has gathered over 26,000 excess animals. Of these, gather related mortality has averaged only 0.5% which is very low when handling wild animals. Another 0.6% of the animals captured were humanely euthanized due to pre-existing conditions and in accordance with BLM policy. This data affirms that the use of helicopters and motorized vehicles is a safe, humane, effective and practical means for gathering and removing excess wild horses and burros from the range. BLM policy prohibits the gathering of wild horses with a helicopter, (unless under emergency conditions), during the period of March 1 to June 30 which includes and covers the six weeks that precede and follow the peak foaling period (mid-April to mid-May).

The BMDO has been actively conducting wild horse gathers since the mid 1970's. Over time, methods and procedures have been developed and refined so as to minimize stress and impacts to wild horses during implementation of gathers. Injury and death as a direct result of the helicopter herding is minimal. In fact, most injuries or death occur *after* the animal is gathered, e.g., when the animals are sorted or loaded for transport, or while in the holding corrals. BLM staff is on-site at all times to observe the gather, monitor animal health, and coordinate the gather activities with the contractor. The SOPs outlined in Appendix A would be implemented to ensure that the gather is conducted in a safe and humane manner, and to minimize potential impacts to or injury of the wild horses.

Over the past 35 years, various impacts to wild horses during gathers have been observed. Individual, direct impacts to these animals include handling stress associated with the capture, sorting, animal handling, and transportation. The intensity of these impacts varies by individual animal, and is indicated by behaviors ranging from nervous agitation to physical distress. Wild horses are very adaptable animals and assimilate into the environment with new members quite easily. Observations made through completion of gathers indicate that many of the wild horses captured acclimate quickly to the holding corral situation, becoming accustomed to water tanks and hay, as well as human presence. Both the BLM Wild Horse and Burro Specialists and the Gather Contractor and crew are very attentive and sensitive to the needs of foals as well as all wild horses captured during gathers, and ensuring their health, safety and well being during and after the gather is a focus and priority.

Accidental death or the need to humanely euthanize animals as a direct result of gather activities is infrequent and averages less than one half to one percent of the wild horses gathered (0.5-1.0%). Injuries sustained during gathers include nicks and scrapes to legs, face, or body from brush or tree limbs while being herded to the gather corrals by the helicopter. Rarely, wild horses will encounter

barbed wire fences and will receive wire cuts. These injuries are not fatal and are treated with medical spray at the holding corrals until a veterinarian can examine the animal.

Most injuries are sustained once the animal has been captured and is either within the gather corrals or holding corrals, or during transport between the facilities and during sorting. These injuries result from kicks and bites, or from collisions with corral panels or gates. Transport and sorting is completed as quickly and safely as possible to reduce the occurrence of fighting, and then the wild horses are moved into the large holding pens to settle in with hay and water. Injuries received during transport and sorting consist of superficial wounds of the rump, face, or legs. Occasionally, horses may sustain a spinal injury or a fractured limb which requires humane euthanasia but these injuries are rare. Similar injuries could be sustained if wild horses were captured through bait and/or water trapping, as the animals still need to be sorted, aged, transported, and otherwise handled following their capture.

On many gathers, no wild horses are injured or die. On some gathers, due to the temperament of the horses, they are not as calm and injuries are more frequent. This was the case with the gather of the Bald Mountain HMA in 2009. The temperament of these horses was much different than that of the Callaghan or Rocky Hills HMAs and despite the fact that a gather had not occurred on this HMA since 1981, the wild horses were very unruly compared to normal wild horse behavior during gathers, and numerous horses were either injured or accidentally died during that gather. A total of 8 horses from the Bald Mountain HMA were euthanized or died as a result of the gather activities as compared to no gather related deaths from the gather of the Callaghan and Rocky Hills HMAs. This represented 0.46% of the total wild horses gathered. Euthanasia due to pre-existing factors such as blindness, deformity, prior injury, severe tooth loss or body condition was necessary for only 3 horses each for the Bald Mountain and Rocky Hills HMAs, and 5 for the Callaghan HMA, for an average of 0.65% of gathered horses euthanized due to pre-existing conditions. Overall, average mortality for this gather averaged 1.1%, which is low considering the thin body scores and weak condition of many of the wild horses that were gathered.

During the 2007 New Pass/Ravenswood HMA gather, a total of 10 wild horses were euthanized due to pre-existing conditions. Three other animals died during the gather for unknown reasons, which were attributed to the gather activities for purposes of documentation. Therefore 0.48% of the gathered horses died for reasons possibly due to the gather activities and 1.6% were euthanized due to pre-existing conditions.

Indirect individual impacts are those impacts which occur to individual animals after the initial stress event, and may include miscarriage in females, and increased social displacement and conflict in males. These impacts, like direct individual impacts, are known to occur intermittently during gather operations. An example of an indirect individual impact would be the brief skirmish which occurs amongst older studs following sorting and release into the stud pen which lasts less than two minutes and ends when one stud retreats. Traumatic injuries usually do not result from these conflicts. These injuries typically involve a bite and/or kicking with bruises, which don't break the skin.

Injuries and death may occur within the holding pens containing mares awaiting fertility control and studs awaiting release, though these incidents are rare. Oftentimes, these animals must be held for 7-10 days or longer while the gather in a given area is being completed and before they can be released. During this time, through fighting and other behaviors, injuries can occur but rarely result in death. Like direct individual impacts, the frequency of these impacts varies with the population and the individual. Observations following capture indicate the rate of miscarriage varies, but can occur in about 1 to 5% of

the captured mares, particularly if the mares are in very thin body condition or in poor health. No miscarriages were documented during the previous gathers of these HMAs despite the low body condition of mares gathered. Given the timing of this gather, which would occur in December, and the condition of the animals to be gathered, miscarriage is not considered to be an issue for the proposed gather.

Through the capture and sorting process, wild horses are examined for health, injury and other physical defects. BLM Euthanasia Policy IM-2009-041 is used as a guide to determine if animals that meet the criteria and should be euthanized (refer to SOPs Appendix A). Animals that are euthanized for non-gather related reasons include those with old injuries (broken hip, leg) that have caused the animal to suffer from pain or prevents them from being able to travel or maintain adequate body condition; excessive teeth wear or broken teeth, are in poor body condition, or are weak from old age; and wild horses or burros that have congenital (genetic) or serious physical defects such as club foot or sway back and should not be returned to the range.

During summer gathers, roads and corrals may become dusty, depending upon the soils and specific conditions at the gather area. The BLM ensures that contractors mitigate any potential impacts from dust by slowing speeds on dusty roads and watering down corrals and alleyways. Despite precautions, it is possible for some animals to develop complications from dust inhalation and contract dust pneumonia. This is rare, and usually affects animals that are already weak or otherwise debilitated due to old age or poor body condition.

Summer gathers pose increased risk of heat stress; however, this can occur during any gather, especially in older or weaker animals. Adherence to the SOPs as well as the techniques utilized by the gather contractor minimizes heat stress. Individual animals are monitored and veterinary or supportive care is administered as needed. Heat related issues can be mitigated by conducting gather operations during morning hours when the temperatures are cooler. Electrolytes can be administered to the drinking water during gathers that involve animals in weakened conditions or during summer gathers. Additionally, Battle Mountain District Wild Horse and Burro staff maintains supplies of electrolyte paste if needed to directly administer to an affected animal. Heat stress does not occur often, but if it does, death can result. Because the proposed gather is tentatively identified for completion in December, heat or dehydration related issues are not expected.

Wild horses are usually in very good fitness and are able to endure the physical requirements of the gather much better than their domestic counterparts. However, the environmental conditions and the overall health and well being of the animals is continually monitored through both summer and winter gathers to adjust gather operations as necessary to protect the animals from gather related health issues. For example, experience during some past gathers has shown that gathers of HMAs with wild horses that are in very good body condition (moderate, Henneke body condition score 5 or higher), sometimes have more heat or gather related issues than horses that do not have as high of a body condition score. The reasons for this are unknown, but do show that body condition is not always an indication of the animal's ability to easily handle the stresses of a wild horse gather. Due to genetics or other unknown factors, two similar HMAs could be gathered under exactly the same circumstances, with wild horses from one HMA showing more signs of heat or other gather related stresses than the other herd. For these reasons, constant monitoring and adjustment of gather operations on a daily or hourly basis is an inherent part of the gathers.

In some areas, gathering wild horses during the winter may avoid the stress that could be associated with a summer gather. By fall and winter, almost all foals are of good body size and sufficient age (6 months or older) to be easily weaned. Winter gathers are often preferred when terrain and higher elevations make it difficult to gather wild horses during the summer months. Under winter conditions, horses are often located in lower elevations due to snow cover at higher elevations. This typically means the horses are closer to the potential trap sites and are herded shorter distances, thereby reducing the potential for fatigue and stress. While deep snow can tire horses as they are moved to the trap, the helicopter pilots allow the horses to travel slowly at their own pace. Trails in the snow are often followed to make it easier for horses to travel to the trap site. On occasion, trails can be plowed in the snow to facilitate the safe and humane movement of horses to a gather site. During the 2008/2009 Callaghan Complex gather, the conditions were variable and ranged from snow storms and snow coverage up to one foot thick to areas completely clear of snow or of snow melt and mud. Despite the weak condition of many of the wild horses from Callaghan and Bald Mountain HMAs in 2008/2009, the wild horses were not further debilitated from the gather as the pilot brought horses to the gather corrals slowly and carefully, being mindful of their strength and body condition.

A winter gather may also result in less stress as the cold and snow may not affect wild horses to the degree that heat and dust might during a summer gather. Wild horses may be able to travel farther and over terrain that is more difficult during the winter, even if snow covers the ground. Water requirements are lower during the winter months, making distress from heat exhaustion extremely rare. By comparison, during summer gathers, wild horses may travel long distances between water and forage and have the potential to become more easily dehydrated. In any case, wild horses are typically in top physical fitness and are able to endure the physical demands of a wild horse gather (whether in winter or summer) better than a domestic horse, regardless of breed due to the requirements of surviving in the wild. Most temperature related issues during a gather can be mitigated by adjusting daily gather times to avoid the extreme hot or cold periods of the day.

A few foals may be orphaned during a gather. This can occur if the mare rejects the foal, the foal becomes separated from its mother and cannot be matched up following sorting, the mare dies or must be humanely euthanized during the gather, the foal is ill or weak and needs immediate care that requires removal from the mother, or the mother does not produce enough milk to support the foal. On occasion, foals are gathered that were previously orphaned on the range (prior to the gather) because the mother rejected it or died. These foals are usually in poor, unthrifty condition. Every effort is made to provide appropriate care to orphan foals. Veterinarians may administer electrolyte solutions or orphan foals may be fed milk replacer as needed to support their nutritional needs. Orphan foals may be placed in a foster home in order to receive additional care. Despite these efforts, some orphan foals may die or be humanely euthanized as an act of mercy if the prognosis for survival is very poor. Due to the timing of the proposed gather, it is unlikely that orphan foals will be encountered as the majority of the current year's (2010) foals will be weaned already from their mothers.

A total of four orphans were found adoptive homes during the Callaghan Complex gather in 2008/2009. Three were a little too young to wean and could not be matched with their mothers, and one was a young weak filly that needed supportive care due to infection and malnourishment as the mother was moderately thin/thin and was not producing adequate milk for the filly. Refer to Callaghan photo #4 in Appendix B. One foal was placed in a foster home and later adopted during the New Pass Ravenswood Gather in 2007 because it was a little too young to wean and the mother needed to be euthanized due to very thin body condition, excessive tooth wear and no milk production for the foal.

Following the gather, a large percentage of inoculated mares would experience reductions in fertility. Recruitment of foals into the population would be reduced over a three-year period. Up to 94% of the mares treated would not foal the second year following implementation of fertility control, and 82% and 68% of mares in the following two years. The potential multi-year reprieve from foaling would greatly increase overall health and fitness of the mares, as well as the health of the foals born after fertility returns.

Past application of fertility control has shown that mares reflect improvements to overall health and body condition even after fertility resumes. Subsequent observations of mares treated in past gathers showed that many of the mares were larger than the others were, maintained higher body condition than untreated mares, and had large healthy foals.

Following resumption of fertility, the proportion of mares that conceive and foal could be increased due to the increased fitness. Additionally, fertility control treatment could cause breeding and foaling



The pinto in the lead is the mare in the background of the center photo. She was given fertility control and re-released to the HMA. Photo taken during an inventory September 2009.



A group of very colorful horses gathered from the Callaghan HMA in January 2009.



This stud is pictured in the center photo. He was adopted at an event held in Winnemucca Nevada in May, 2009.

seasons to become “out of sync” with foals born earlier or later in the year, or throughout the year but is generally associated with the timing of the treatment and not the vaccine itself. Research is continuing to document and quantify these effects.

The indirect effect of fertility control would be to extend the time before another gather is required. However, under the proposed Capture, Treat and Release (CTR) protocol, it is being recommended that the BLM return to these areas every 2-3 years to re-apply fertility control. By reducing population growth rates, the number of wild horses that would have to be removed from the HMAs during future gathers would also be reduced or eliminated. Future gathers would be dependent upon BLM funding, and National Wild Horse and Burro priorities. Expanding the use of fertility control to slow growth rates and reduce the number of animals removed from the range (especially to LTHPs) is included within new strategies currently being proposed by the Secretary of the Interior. Future gathers could then include these and other strategies and would be analyzed at that time.

Genetic and physical health and future reproductive success of mares within all of the involved HMAs would be sustained. Reduced growth rates and lower population sizes would also allow for improvements to range condition, which would have long-term benefits to wild horse habitat quality and contribute to the achievement and maintenance of a thriving natural ecological balance.

The primary effect of the Proposed Action would be to wild horse population growth rates and numbers of wild horses needing to be gathered and/or removed over the next 10-11 years. Refer to the discussion below and Appendix D for more detail.

Wild Horses Remaining or Released into the HMAs following Gather

Approximately 866 wild horses would be captured from the four HMAs. Of these, about 645 horses ages 1-20+ would be returned to the HMA to result in a post gather population of approximately 862 wild horses. The post gather population represents 80% of the estimated population. This is in contrast to typical gathers where up to 92% of the population must be removed, because of the large number of horses inventoried within the HMA in excess of the AML, just to achieve the low range of AML. During the most recent gather of the Callaghan HMA for example, 46% of the 951 wild horses gathered were 5 years of age or older, for which there would typically be a lower adoption demand. Current BLM data indicates that at least 462 wild horses gathered from the Callaghan, Bald Mountain, New Pass/Ravenswood and Rocky Hills HMAs between 2007 and 2009 are currently held in Long Term Holding Pastures. The goal of the Proposed Action is to break this cycle of gathers and wild horses in holding facilities by reducing the number of horses that must inherently be removed from the range through the use of population controls at effective frequencies. Approximately 217 animals would evade capture and therefore not be captured, given prior gather statistics on gather efficiencies. With about 50% of these uncaptured animals expected to be mares, at least 109 females would not be treated with the fertility control vaccine and would continue to foal normally within the four affected HMAs.

Wild horses not captured may be temporarily disturbed and moved into another area during the gather operation. With the exception of slight changes to herd demographics from removals of mostly young animals, direct population impacts have proven to be temporary in nature with most, if not all, impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

It is not expected that genetic health would be impacted by the Proposed Action. The combined AML range of 894-1,161 wild horses should provide for acceptable genetic diversity. Genetics analysis reports for these herds indicate high genetic variability and recommend no action at this time. Refer to Appendix B for more information.

The primary benefit of achieving and maintaining the established AML within these HMAs would be the improvement of the health and sustainability of rangeland habitat attributes over the long-term. By maintaining wild horse population size within the AML, there would be a lower density of wild horses across the HMA, reducing competition for resources and allowing wild horses to utilize their preferred habitat. Maintaining population size within the established AML would be expected to improve forage quantity and quality and promote healthy, self-sustaining populations of wild horses in a thriving natural ecological balance and multiple use relationship on the public lands in the area.

Deterioration of the range associated with wild horse overpopulation would be avoided and rangelands would have the opportunity to recover from prior overpopulation impacts. Managing wild horse populations in balance with the available habitat and other multiple uses would lessen the potential for individual animals or the herd to be affected by drought, and would avoid or minimize the need for emergency gathers, which would reduce stress to the animals and increase the success of these herds over the long-term. Individuals would be able to maintain optimum body weight and overall health even

in ‘bad’ years marked by poor precipitation or harsh winters. Through maintenance of AML, progress would be made towards the Standards for Rangeland Health, Allotment Specific and RMP Objectives.

Results of WinEquus Population Modeling

The Proposed Action and Alternative 1 were modeled using Version 3.2 of the WinEquus population model (Jenkins, 2000). The results are fully detailed in Appendix D, and summarized briefly below. Following the public comment period, several other scenarios were modeled that are summarized in Appendix D.

The model was used to simulate the possible outcomes of treatment and re-treatment of these HMAs on a two-year fertility control protocol, (as compared to a three year protocol) to display the potential growth rates, population sizes and gather and removal numbers in what could be the most frequent retreatment that could be possible in future gathers. It is likely that in the future, these areas could also be gathered at 3 or 4 year intervals, depending upon the National gather funding and priorities. It should be noted that the WinEquus population model is a management tool to project possible outcomes based on various management scenarios. The actual results of management activities may be similar or quite different than the output provided by the model due to individual herd genetics, foaling rates, age structure, health, survivability rates, environmental conditions and a host of other factors. Routine monitoring of the range and the herd will continue and will be used to evaluate population growth rates, animal health and other population and habitat parameters for use in future planning documents such as Herd Management Area Plans and wild horse gather EAs.

The Proposed Action was modeled for a cycle of 10 years, showing a re-gather and retreatment of the mares every two years (2010, 2012, 2014 etc), with removal of only foals and yearlings. Removal of other age groups or wild horses located outside of HMA boundaries was not included in the model. The outcomes produced represent averages and totals for the *full* ten years that the model was simulated. The model was set for 100 trials or simulations.

Alternative 1 was modeled to simulate current management or status quo with gathers occurring every five years to remove excess wild horses and achieve the AMLs without implementation of additional population controls. Alternative 1 was also set for 10 years and 100 trials. Please refer to the detailed data and further explanation in Appendix D.

Through completion of the proposed gather and subsequent inventory flights, the MLFO would collect data to assess the timing and needs for future gathers. Future gathers could and would likely include treatment of fertility control and be conducted every 2-3 years. Prior to completing future gathers, the MLFO would complete appropriate NEPA documents and analyze data collected since the previous gather including population growth rates, population sizes, animal health and vegetation monitoring data.

The results of the population modeling clearly show that the application of fertility control on a two-year protocol beginning in 2010 could eliminate the need to remove unadoptable wild horses in future gathers, and substantially reduce the number of excess animals that need to be removed from the range and cared for in LTHPs. Though many times more animals would have to be gathered during the more frequent gathers, this would be offset by being able to return most animals (80-90%) back to the range in addition to the increased animal and rangeland health that maintaining populations at AML would bring. Under this strategy, few to no older wild horses would need to be removed from the HMAs and maintained in LTHPs. The following questions were addressed through the modeling:

- **Do any of the Alternatives “crash” the population?**

Results of the modeling do not indicate that implementing the Proposed Action would result in a crash of the population. Results obtained for 10 years and 100 trials for all HMAs showed minimum population levels and growth rates within reasonable levels, indicating that adverse impacts to the population are not likely.

- **What effect do the different alternatives have on the average population size?**

The results of the model indicate that the Proposed Action, with potential retreatment of fertility control every two years would maintain the populations within their respective AML ranges over the course of the next 10 years, with fewer removals necessary and removals of primarily young and adoptable animals if removal is necessary.

Alternative 1, with no population control and gathers approximately every 5 years would not maintain the populations at AML, and could result in populations that average 120-157% of AML, while requiring the removal of many more excess wild horses than with the Proposed Action, and many more older horses that would potentially be sold (with limitation) or go to LTHPs at a substantial cost for their care.

- **What effect does fertility control have on population growth rate?**

The results of the modeling suggest that the Proposed Action when compared to Alternative 1 could substantially reduce population growth rates to the point where growth and mortality (plus minimal removals) are even, resulting in “flat” growth rates that hover around zero (median trial) over the course of the 10 years of trials modeled. The median growth rates displayed by the model ranged from -0.7 to 2.0% for the Proposed Action, and 14.4 to 16.1% for Alternative 1 (as an average of the entire 10 years modeled). As a result, fewer excess wild horses would need to be removed from the range over the next 10 years for the Proposed Action as compared to Alternative 1.

Table 7: Median Trial for Average Growth Rates in 11 years

HMA	Proposed Action	Alternative 1
Callaghan	0.0	15.4
Bald Mountain	-0.7	14.4
Rocky Hills	1.6	14.7
New Pass/Ravenswood	2.0	16.1

The growth rates for the Proposed Action reflect the modeling scenario for gather and retreatment for fertility control every two years in order to show the range of potential outcomes for the most intensive fertility control treatment possible. The actual future schedule of fertility control and gathers would be determined following the analysis of inventory data collected following gathers. Gathers could be repeated every 2-3 years and may or may not include fertility control.

- **What effect do the alternatives have to numbers of horses gathered and removed?**

The modeling consistently reflects that implementation of the Proposed Action and continuing the fertility control protocol every 2 years over the course of the next 10 years would result in wild horse populations being maintained within the AML ranges. Approximately double the number of wild horses would have to be captured during gathers under the Proposed Action and such gathers would occur more frequently. However, only 30-35% of the gathered horses would have to be removed as

excess horses during these gathers when compared to the Alternative 1 (584 excess horses removed under Proposed Action versus 1,850 excess horses removed under Alternative 1), and most of these animals would generally be younger and highly adoptable. More frequent gathers would be costly; however the additional costs would be more than offset because few if any animals would have to be maintained in LTHPs, which itself is very costly.

Table 8: Comparison of wild horses removed – Most Typical Trial

Alternative	Total Removed – all ages	Total Removed 0-4 years of age	Total Removed 5+ years
Proposed Action	584	584	0
Alternative 1	1,850	1,361	489

Under Alternative 1, the modeling under the Most Typical Trial shows that more than 300% more horses would have to be removed over the course of 10 years, of which an estimated 468 would be excess horses aged 5 years of or older. This means that some 26% of the wild horses removed would be less adoptable and likely to be transported to LTHPs, as compared to 0.0% in this age group under the Proposed Action.



Foals gathered from New Pass/Ravenswood November 2007.

The modeling completed for Alternative 1 and the Most Typical Trial also indicates that population sizes in 6 of the 11 years modeled would exceed the upper limits of AML, which would result in degradation of rangeland resources and potentially impact the health and well-being of the wild horses (particularly in times of drought or bad winters).

The following tables display the average population sizes produced, projected number of wild horses gathered, and projected number of wild horses removed for each Alternative between the 10th and 90th percentile.¹⁴

Table 9a: Average Population Sizes in 11 years – 10th -90th Percentile

HMA	Proposed Action (number of wild horses)	Alternative 1 (number of wild horses)
Callaghan	213-271	261-307
Bald Mountain	165-215	215-251
Rocky Hills	118-152	141-167
New Pass/Ravenswood	400-497	576-684
Total	896-1,135	1,193-1,409 (120-157% of AML)
AML	894-1,161	

14. These figures within the 10th-90th percentile represent the following: in 100 trials for an 11 year period, only 10 percent of the trials produced results lower than presented below, and only 10 percent produced results higher than those presented below. In other words, 80 percent of the trials had results that fell within the ranges given in these tables.

As shown in the above table, the modeling results show the Proposed Action scenario maintaining the population within the AML, whereas the Alternative 1 or status quo results in an average population that is 120-157% of the established AMLs.

Table 9b: Horses gathered, removed and treated in 11 years – 10th -90th Percentile

HMA	Action	Proposed Action	Alternative 1
Callaghan	Gathered	981-1216	340-584
	Removed	126-228	311-544
	Treated	358-424	0
Bald Mountain	Gathered	787-1024	253-422
	Removed	44-121	226-396
	Treated	248-370	0
Rocky Hills	Gathered	524-658	167-302
	Removed	36-119	160-287
	Treated	191-242	0
New Pass/Ravenswood	Gathered	1799-2181	562-1090
	Removed	204-418	520-1030
	Treated	640-804	0

The primary long-term and indirect effects to the wild horses through the treatment and re-treatment of fertility control would be to the overall health and well being of the animals and continued improvement to rangeland health as AML is maintained. Many mares would not experience the biological stress of reproduction, foaling and lactation and would reflect better health as noted by higher body condition scores. Foals later born to these mares would be healthier overall, and would benefit from optimum nutrition from mares’ milk and rangeland forage.

As the population is maintained at the level necessary to achieve a thriving natural ecological balance, vegetation resources would continue to improve (as improvement has already been noted in many areas within these HMAs since the most recent gathers), thereby improving the forage available to wild horses throughout the HMAs. With balance and optimum distribution across the HMAs there would also be less trailing and concentrated use of waters which would have many benefits to the wild horses. There would be reduced competition among bands using the waters, and less fighting would occur among studs and individual animals accessing these waters. Water quality and quantity would continue to improve to the benefit of all rangeland users including wild horses. Wild horses would also have to trail less distance back and forth to water and desirable foraging areas.

Should the repeated fertility control treatment be continued into the future, the chronic cycle of over population and large gathers and removals would no longer occur, but instead a consistent cycle of balance and stability would ensue, resulting in continued improvement of overall habitat conditions and animal health.

The modeling discussion above indicates that over the course of 10 years, the implementation of the Proposed Action could result in 1,266 *fewer* excess wild horses needing to be removed from the range (Most Typical Trial, Table 8 above). For every excess horse not adopted or sold, a savings to the American taxpayer of up to \$12,000 per animal over 20 years would accrue. Over the next 20 years, this could equate to savings of up to 5.9 to 15.2 million dollars for excess horses that would otherwise be

removed from these HMAs (depending upon the actual age of animals, adoption demand, total time in holding etc).

Temporary Holding Facilities During Gathers

Wild horses gathered would be transported from the gather corrals (trap sites) to a temporary holding corral within the HMAs in goose-neck trailers. At the temporary holding corrals wild horses would be sorted into different pens based on sex. The horses would be aged and fed good quality hay and water. Mares and any un-weaned foals would be kept in pens together. Wild horses identified for retention in the HMAs and for fertility control treatment would be maintained in these temporary corrals until the fertility control treatment could be implemented and would then be returned to the HMAs (refer to the photo below).

At the temporary holding facility, recommendations regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses is provided by a veterinarian, BLM staff or contractor. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such



Callaghan mares await re-release back to the HMA. Callaghan HMA gather January 2009.

as severe tooth loss or wear, club foot, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the American Veterinary Medical Association (AVMA).

Transport, Short Term Holding, and Adoption (or Sale) Preparation

Approximately 221 excess wild horses consisting primarily of all wild horses residing outside of HMA boundaries along with weanlings and yearlings would be removed, though wild horses of any age could be identified as excess by the authorized officer and removed. Animals would be transported from the capture/temporary holding corrals to the designated BLM short-term holding corral facility(s). From there, they would be made available for adoption or sale to qualified individuals or sent to long-term holding pastures.

Wild horses selected for removal from the range are transported to the receiving short-term holding facility in straight deck semi-trailers or goose-neck stock trailers. Vehicles are inspected by the BLM COR or Project Inspector (PI) prior to use to ensure wild horses can be safely transported and that the interior of the vehicle is in a sanitary condition. Wild horses are segregated by age and sex and loaded into separate compartments. Weanlings and yearlings may be shipped in mixed compartments of both colts and fillies. Transportation of recently captured wild horses is limited to approximately 8 hours. During transport, potential impacts to individual animals can include stress, as well as slipping, falling, kicking, biting, or being stepped on by another animal. Unless wild horses are in extremely poor condition, it is rare for an animal to be seriously injured or to die during transport.

Upon arrival at the short term holding facility, recently captured wild horses are off-loaded by compartment and placed in holding pens where they are fed good quality hay and water. Most wild horses begin to eat and drink immediately and adjust rapidly to their new situation. At the short-term holding facility, a veterinarian examines each load of horses and provides recommendations to the BLM regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such as severe tooth loss or wear, club feet, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the AVMA. Wild horses in very thin condition or animals with injuries are sorted and placed in hospital pens, fed separately and/or treated for their injuries as indicated. Recently captured wild horses in very thin condition may have difficulty transitioning to feed. Some of these animals are in such poor condition that it is unlikely they would have survived if left on the range. Similarly, some mares may lose their pregnancies. Every effort is taken to help the mare make a quiet, low stress transition to captivity and domestic feed to minimize the risk of miscarriage or death.¹⁵

After recently captured wild horses have transitioned to their new environment, they are prepared for adoption or sale. Preparation involves freeze-marking the animals with a unique identification number, drawing a blood sample to test for equine infectious anemia, vaccination against common diseases, castration, and de-worming. During the preparation process, potential impacts to wild horses are similar to those that can occur during handling and transportation. Serious injuries and deaths from injuries during the preparation process are rare, but can occur.

At short-term corral facilities, a minimum of 700 square feet is provided per animal. Mortality at short-term holding facilities averages approximately 5% per year (GAO-09-77, Page 51), and includes animals euthanized due to a pre-existing condition; animals in extremely poor condition; animals that are injured and would not recover; animals which are unable to transition to feed; and animals which are seriously injured or accidentally die during sorting, handling, or preparation.

Adoption or Sale with Limitations, and Long Term Pastures

Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall for wild horses over 18 months of age. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the wild horse or burro for one year and the facilities are inspected to assure the adopter is complying with the BLM's requirements. After one year, the adopter may take title to the horse or burro after an inspection from an official, veterinarian, or other individual approved by the authorized officer to ensure humane care, at which point the horse or burro becomes the property of the adopter. Adoptions are conducted in accordance with 43 CFR Subpart 4750.

15. Due to the current condition of the wild horses within the proposed gather area, issues relating to feed transition or miscarriage are not expected.

A mare and her new born foal. This mare was gathered from Callaghan HMA in January 2009 then bought through the sale program by an individual in North Carolina. The photo was taken just 6 months after the gather.



Potential buyers must fill out an application and be pre-approved before they may buy a wild horse. A sale-eligible wild horse is any animal that is more than 10 years old; or has been offered unsuccessfully for adoption three times. The application also specifies that buyers are not to re-sell the animal to slaughter buyers or anyone who would sell the animal for commercial processing. Sales of wild horses

are conducted in accordance with Bureau policy, and consist of animals over 10 years of age and animals that are generally not adoptable.

Because the large majority of animals removed during the proposed gather would be weanlings and yearlings, these animals would be highly adoptable. Additionally because of the recent gathers within these HMAs to achieve AML, the animals were noted to be in good health and body condition during previous flights, which will help them to endure the gather, preparation and subsequent adoptions better than less healthy animals gathered from ranges that were severely overpopulated. Few animals would be gathered that would need to go to LTHPs or sale.

Between 2007 and 2009, nearly 62% of all excess wild horses or burros removed through BLM gathers were adopted and about 8% were sold with limitation (to good homes) to qualified individuals. Wild horses generally 5 years of age and older (those for which there is less adoption or sale demand) are transported to LTHPs. Each LTHP is subject to a separate environmental analysis and decision making process. Wild horses in LTHPs remain available for adoption or sale to individuals interested in acquiring a larger number of animals and who can provide the animals with a good home. The BLM has maintained LTHPs in the Midwest for over 20 years.

Potential impacts to wild horses from transport to adoption, sale or LTHP are similar to those previously described. One difference is that when shipping wild horses and for adoption, sale or LTHP, animals may be transported for a maximum of 24 hours. Immediately prior to transportation, and after every 18-24 hours of transportation, animals are offloaded and provided a minimum of 8 hours on-the-ground rest. During the rest period, each animal is provided access to unlimited amounts of clean water and 15-25 pounds of good quality hay per horse/burro with adequate bunk space to allow all animals to eat at one time. Most animals are not shipped more than 18 hours before they are rested. The rest period may be waived in situations where the travel time exceeds the 24-hour limit by just a few hours and the stress of offloading and reloading is likely to be greater to the animals than the stress involved in the additional period of uninterrupted travel.

LTHPs are designed to provide excess wild horses with humane, life-long care in a natural setting off the public rangelands. There, wild horses are maintained in grassland pastures large enough to allow free-roaming behavior (i.e., the horses are not kept in corrals) and with the forage, water, and shelter necessary to sustain them in good condition. About 22,700 wild horses, that are in excess of the existing adoption or sale demand (because of age or other factors), are currently located on private land pastures in Iowa, Kansas, Oklahoma, and South Dakota. Located in mid or tall grass prairie regions of the

United States, these LTHP are highly productive grasslands as compared to more arid western rangelands. These pastures comprise about 256,000 acres (an average of about 8-10 acres per animal). The majority of these animals are older in age.

Mares and castrated stallions (geldings) are segregated into separate pastures except one facility where geldings and mares coexist. No reproduction occurs in the long-term grassland pastures, but some foals are born to mares that were pregnant when they were removed from the range and placed onto the LTHP. These foals are gathered and weaned when they reach about 8-10 months of age and are then shipped to short-term facilities where they are made available for adoption. Handling of wild horses at LTHPs by humans is minimized to the extent possible although regular on-the-ground observation and weekly counts of the wild horses to ascertain their numbers, well-being, and safety are conducted. A very small percentage of the animals may be humanely euthanized if they are in very thin condition and are not expected to improve to a Henneke Body Condition Score of 3 or greater due to age or other factors. Natural mortality of wild horses in LTHP averages approximately 8% per year, but can be higher or lower depending on the average age of the horses pastured there (GAO-09-77, Page 52). The savings to the American taxpayer which results from contracting for LTHP averages about \$4.45 per horse per day as compared to maintaining the excess animals in short-term holding facilities.

Euthanasia and Sale without Limitation

While humane euthanasia and sale without limitation of healthy horses for which there is no adoption demand is required under the WFRHBA, Congress prohibited the use of appropriated funds between 1987 and 2004 and again in 2010 for this purpose. It is unknown if a similar limitation will be placed on the use of Fiscal Year 2011 appropriated funds.

Alternative 1

Under Alternative 1, there would be no active management to maintain the population size within the established AML at this time. In the absence of a gather, wild horse populations would continue to grow. The New Pass/Ravenswood HMA would benefit from one additional year of partial fertility control effectiveness in 2011 before returning to normal growth rates of 17-20% annually. The Callaghan Complex would benefit from two more years of fertility control effectiveness through 2012 before resuming normal growth rates averaging 17.5% annually.

The Callaghan Complex is near the upper limit of AML and would exceed that limit in 2011 without a gather and removal now. The New Pass/Ravenswood HMA would also exceed the AML in 2011 without a gather. To delay a gather would result in impacts to the range associated with an overpopulation of wild horses over AML. Additionally, delay of a gather would require that a greater number of animals are removed from the range in the future. Based on National and State gather priorities, it is estimated that New Pass/Ravenswood would not be gathered until at least 2012, and the Callaghan Complex in 2013, as the average gather cycle for the Battle Mountain District is 5-7 years, regardless of population size.

Population modeling indicates that gathers under Alternative 1 would involve the removal of approximately 1,850 wild horses or 300% of that removed under the Proposed Action over a 10 year time period. The excess animals would be transported to BLM short-term corral facilities where they would be prepared for adoption, sale or long-term holding. The 10-year modeling indicates that approximately 1,361 wild horses 0-4 years of age would be removed under Alternative 1 as compared to only 584 removed under the Proposed Action. Additionally, the model indicates that 468 wild horses 5 years of age or older would be removed under Alternative 1 over the next 10 years. Any excess animals

not adopted or sold would be maintained at a cost of up to \$12,000 per horse which could equate to costs of up to 5.9 to 15.2 million dollars for excess horses that would otherwise be removed from these HMAs (depending upon the actual age of animals, adoption demand, total time in holding etc).

3.3. Livestock Management

Affected Environment

Detailed information about the authorized livestock use within these HMAs is provided in the 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs identified in Section 1.1. Refer to Map 1 which displays the Allotment boundaries in addition to the HMA boundaries within the proposed gather area.

As detailed in the 2007 and 2008 gather EAs, numerous changes to the livestock management systems have been made in recent years which include reductions in permitted use and changes to the season of use. Observations made during monitoring completed in 2010 found improvements to riparian areas in portions of some allotments that could be attributed to the changes in the livestock grazing systems and to the removal of excess wild horses in the recent wild horse gathers.

No additional changes to the livestock management systems have taken place since issuance of the most recent gather EAs, and livestock use within the allotments associated with the HMAs has been in accordance with the grazing permits. The tables below display the actual use¹⁶ that has occurred within these areas since the most recent gather EA. The grazing allotment and pasture boundaries within the allotments do not correspond to the HMA boundaries, and therefore, permitted use and actual use within these allotments does not perfectly correspond to (and overstate) use by livestock within the HMA boundaries. The actual use figures in the tables below are estimates of the use that has occurred within the portions of the allotments that overlap the HMAs.

Austin Allotment (Callaghan HMA)

Refer to the 2008 Callaghan EA for more detailed information about the livestock grazing permitted within the proposed gather area. The following table provides actual use incurred within the pastures or use areas that are partially or entirely within the HMA since the issuance of the previous gather EAs. The permitted use reflected below is only for overlapping allotment and HMA areas and does not reflect the permit for the entire allotment.

Table 10. Austin Allotment 2008 Actual Use (AUMs)

Pasture	Silver Creek Ranch, Inc. (sheep and cattle) (AUMs)	Gallagher (AUMs)
Mountain	1,806	-
Italian Canyon	-	-
Elkhorn	237	75
Upper & Middle Italian	150	-
Total	2,268 AUMs	

Table 11. Austin Allotment 2009 Actual Use

Pasture	Silver Creek Ranch, Inc.	Gallagher
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16. If actual use was not submitted by the permittee then billed use was used instead. 43 CFR 4100.0-5 defines Animal Unit Month (AUM) as the amount of forage necessary for the sustenance of one cow or its equivalent for 1 month (which equates to 5 sheep).

	(sheep and cattle) (AUMs)	(AUMs)
Mountain	1,725	-
Italian Canyon	-	-
Elkhorn	123	134
Upper & Middle Italian	85 ¹⁷	-
Total	2,067 AUMs	

The actual use within the Austin Allotment ranged from 42% to 86% of permitted use for the permittees within these use areas between 2008 and 2009. The total permitted use for these use areas within the HMA is 2,538 for Silver Creek and 178 for Gallagher.

Gilbert Creek and Manhattan Mountain Allotments (New Pass/Ravenswood HMA)

The permitted livestock grazing was discussed in detail within the 2007 New Pass/Ravenswood Gather EA. Please refer to that document for more information. The following tables display the actual use that has occurred since issuance of that EA. The New Pass/Ravenswood HMA encompasses 82% of the Manhattan Mountain Allotment and 86% of the Gilbert Creek Allotment. The permitted use for the Gilbert Creek Allotment is 6,453 AUMs cattle and 6,618 AUMs sheep. Permitted use for the Manhattan Mountain Allotment is 1,746 AUMs cattle.

Table 12. Gilbert Creek/Manhattan Mountain Allotments -- 2007 Actual Use (AUMs)

Pasture	Silver Creek Ranch, Inc. (sheep) (AUMs)	Silver Creek Ranch, Inc. (cattle) (AUMs)	Silver Creek Ranch, Inc. (cattle) (AUMs)	Ellison Ranching Company (sheep) (AUMs)
Silver Creek Use Area	356	-	4,673	-
Ellison Ranching Co. Use Area	-	-	-	1,026
Manhattan Mountain	-	467	-	-
Total	6,522 AUMs			

Table 13. Gilbert Creek/Manhattan Mountain Allotments -- 2008 Actual Use (AUMs)

Pasture	Silver Creek Ranch, Inc. (sheep) (AUMs)	Silver Creek Ranch, Inc. (cattle) (AUMs)	Silver Creek Ranch, Inc. (cattle) (AUMs)	Ellison Ranching Company (sheep) (AUMs)
Silver Creek Use Area	208	-	4,525	-
Ellison Ranching Co. Use Area	-	-	-	2,710
Manhattan Mountain	-	368	-	-
Total	7,811 AUMs			

Table 14. Gilbert Creek/Manhattan Mountain Allotments -- 2009 Actual Use (AUMs)

Pasture	Silver Creek Ranch, Inc. (sheep) (AUMs)	Silver Creek Ranch, Inc. (cattle) (AUMs)	Silver Creek Ranch, Inc. (cattle) (AUMs)	Ellison Ranching Company (sheep) (AUMs)
Silver Creek Use Area	194	-	4,548	-
Ellison Ranching Co. Use Area	-	-	-	3,383 ¹⁸
Manhattan Mountain	--	431	-	-

17. Actual use information was either incomplete or missing; AUMs derived from billing.

18. Actual use information was either incomplete or missing; AUMs derived from billing.

Total	8,556 AUMs
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The above tables show that the actual use between 2007 and 2009 ranged from 21-54% of the permitted sheep AUMs, and 70-72% of the permitted cattle AUMs within the Gilbert Creek Allotment. The actual use on the Manhattan Mountain Allotment ranged from 21-25% of the permitted use.

Carico Lake Allotment (Bald Mountain HMA)

Refer to the 2008 Callaghan EA for more detailed information about the livestock grazing permitted within the proposed gather area. The following table provides actual use incurred in the use areas within the HMA since the issuance of the previous gather EA. The permitted use is also only for those areas of overlap between the HMA and allotment and does not reflect the permit for the entire allotment.

Table 15. Actual Use (AUMs) within the Bald Mountain HMA portion of the Carico Lake Allotment

Use Area	Actual Use AUMS	Permitted AUMS
2008		
Toiyabe Mountain	1,330	1,795
Toiyabe Flat	1,006	2,722
Silver Creek Ranch	36	884
Total	2,372	5,401
2009		
Toiyabe Mountain	0	1,795
Toiyabe Flat	1,111	2,722
Silver Creek Ranch	82	884
Total	1,193	5,401

The actual use in 2008 and 2009 ranged from 0% to 74% of the permitted use within these use areas.

JD and Grass Valley Allotment (Rocky Hills HMA)

The following tables display the actual use that has occurred since the most recent gather within the use areas that fall partially or entirely within the Rocky Hills HMA. The permitted use is also only for those areas and does not reflect the permit for the entire allotment. Refer to the 2008 Callaghan EA for more information.

Table 16. 2009 Actual Use (AUMs) within the Rocky Hills HMA portion of affected Allotments

Allotment	Pasture	Actual Use (AUMs)	Permitted AUMs
Grass Valley	Upper McClusky	107	4,011
	Native Mtn	774	
	Native Valley Floor	2,039	
	Buckingham	1,034	
JD	Rocky Hills	1,392	4,276
	Trail Canyon	1,831	
	Tonkin Summit	571	
Total		7,748	8,287

Table 17. 2008 Actual Use (AUMs) within the Rocky Hills HMA portion of affected Allotments

Allotment	Pasture	Actual Use (AUMs)	Permitted AUMs
Grass Valley	Upper McClusky	150	4011
	Native Mtn	709	
	Native Valley Floor	1,686	
	Buckingham	1,034	
JD	Rocky Hills	60	4276
	Trail Canyon	2,355	
	Tonkin Summit	558	
Total		6,552	8,287

Within the Rocky Hills HMA, the actual use for livestock ranged from 89-98% of the permitted use within the Grass Valley Allotment and 69-88% within the JD Allotment.

Simpson Park and Grass Valley Allotments (East Callaghan HMA)

The following tables display the actual use for the use areas that fall entirely or partially within the Callaghan HMA on the east side of the HMA. Only the permitted use for these use areas is displayed and does not represent the permitted use for the entire allotment.

Table 18. 2009 Actual Use (AUMs) within the Callaghan HMA portion of affected Allotments

Allotment	Pasture	Actual Use (AUMs)	Permitted AUMs
Simpson Park	Willow/Barton (sheep)	116	1,196
	Willow/Barton (cattle)	569	
Grass Valley	Callaghan Mtn	649	4,868 (odd years)
	Cowboy Flat	325	
Total		1,659	6,064

Table 19. 2008 Actual Use (AUMs) within the Callaghan HMA portion of affected Allotments

Allotment	Pasture	Actual Use (AUMs)	Permitted AUMs
Simpson Park	Willow/Barton (sheep)	118	1196
	Willow/Barton (cattle)	240	
Grass Valley	Callaghan Mtn	506	6,503 (even years)

Allotment	Pasture	Actual Use (AUMs)	Permitted AUMs
	Cowboy Flat	1,282	
Total		2,146	7,699

As displayed in the tables, actual use for the Simpson Park allotment ranged from 30-57% of the permitted use and the actual use within the Grass Valley Allotment ranged from 20-27% of the permitted use within this portion of the Callaghan HMA.

Environmental Consequences

Proposed Action

Impacts to livestock would be similar to those described in the EAs referenced above, which analysis is incorporated by reference. Indirect impacts resulting from the Proposed Action would include continued improvement to rangeland and riparian habitat as the wild horse populations in these HMAs are maintained within the established AML ranges, and preventing degradation to the resources due to an overpopulation of wild horses.

Alternative 1

The population model indicates that if the gather is delayed, population sizes within these HMAs would reach average population sizes of 120-157% of AML before another gather occurs (estimated to be 2012 or 2013). Populations of wild horses in excess of AML would have negative impacts to vegetation and riparian resources, preventing improvements to and recovery of these resources that would otherwise occur by maintaining wild horse populations within AML. These indirect impacts would affect livestock through reduced condition and availability of forage and water within these HMAs.

3.4. Noxious Weeds, Invasive and Non-Native species

Detailed information about the noxious weeds and invasive species within these HMAs is provided in the 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs identified in Section 1.1.

Environmental Consequences

Proposed Action

Impacts to noxious weeds and invasive species would be similar to those described in the two supporting EAs referenced above. This analysis is incorporated by reference. As the populations are maintained within the established AML ranges, there would be continued improvement to rangeland health. Healthy rangelands are more resistant to the establishment and spread of noxious weeds, invasive or non-native plant species.

Alternative 1

The population modeling indicates that under Alternative 1, wild horse populations would likely reach at least 120-157% of the upper limit of the established AML before a gather could be conducted to remove excess wild horses. With an over population of wild horses, trailing, soil disturbance, utilization and trampling would increase. These disturbances increase the range’s vulnerability to the establishment and spread of noxious weeds, invasive or non-native plant species, negatively impacting rangeland health.

3.5. Rangeland Vegetation Resources (Forest and Rangeland)

Detailed information about the vegetation resources within these HMAs is provided in the 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs identified in Section 1.1.

Additional monitoring has been completed within the New Pass/Ravenswood, Callaghan and Rocky Hills HMAs in 2009 and 2010. Sixteen new Key Management Areas (KMAs) were established within these HMAs to collect long and short term monitoring data. The field work included installation and reading of nested frequency studies (for baseline trend data), measuring line intercept, soil stability and documentation of apparent trend and rangeland vegetation characteristics and other rangeland health information. Within a portion of the Rocky Hills HMA, Eastern Nevada Landscape Coalition collected nested frequency, production, gap intercept, line point cover and soil stability data as part of the monitoring for the Three Bars Landscape Restoration Project. Riparian monitoring was completed within the New Pass/Ravenswood HMA in 2010. Refer to Section 3.6 for this information.

The precipitation patterns of the area were discussed in detail in the 2008 Callaghan Complex Gather EA. Prior to the most recent Callaghan Complex Gather, the area experienced drought conditions marked by precipitation levels that were only 58% of the historic record average in 2008. Drought conditions may occur 1 of every 3-4 years throughout central Nevada. Precipitation levels were 99% of the average in 2009, and are currently 73% of average in 2010 (through July)¹⁹. The recent gathers in conjunction with moderately increased precipitation levels have helped to encourage improvement in these HMAs. Changes in vegetation communities in the Great Basin are slow and may take decades to be measurable. Protecting the wild horse habitat in these areas from further decline and ensuring continued upward trends depends on the ability to maintain wild horse populations at proper levels over the long-term.



New key area in the Callaghan HMA – nested frequency transect July 2010.



An example of "pedestalling" of the bluegrass plants, in which wind or water erosion of the soil results in exposure of plant roots to the drying effects of the environment.

Through the monitoring, the impacts of past overpopulation of wild horses in these HMAs was evident as indicated by pedestalling of perennial grasses, severe past use and death of perennial grass species, limited or absence of key perennial species in the plant communities, evidence of trailing and large expanses of bare ground in some areas. However, some slight improvement was noted through

19. Beowawe University of Nevada Gund Ranch Weather Station COOP 260800. <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nv0800>

increased presence of some key grasses caged within shrubs²⁰, reduced levels of utilization and reduced signs of trampling and trailing by wild horses. These observations are encouraging and provide a preview of further improvement possibilities in the years to come if the wild horse population levels are kept at proper levels.

In 2009, additional KMAs were established throughout the Grass Valley Allotment in preparation for a Rangeland Health Evaluation that will be completed in the coming years. New KMAs were established in the Callaghan and Rocky Hills HMAs and nested frequency data collected at these locations to establish baseline trend. Documentation of vegetation resources has also been recorded through aerial photos taken throughout all of the involved HMAs during inventory flights.

The following table includes a brief summary of vegetation and other conditions noted at eight key areas monitored in 2010. The frequency data collected at these locations has not yet been compiled. These key areas were established between 2007 and 2010 specifically (though not exclusively) for monitoring of wild horse habitat, as limited key areas existed within the HMAs.

Table 20. Vegetation observations within Callaghan HMA – 2010.

HMA	Key Area/Area	Comments/Observations
Callaghan	A-15 (Upper Alex Canyon)	Key grass species primarily caged within woody species such as rabbitbrush and sagebrush. Cheat grass is dominant throughout area. Rabbitbrush seedlings are present which suggests it may be increasing. Utilization on this year's plant growth has occurred. Younger squirreltail and basin wildrye plants in interspaces which may suggest increasing. Wild horses and cattle were observed in and around Alex Canyon.
	A-20 (Lower Alex Canyon)	Utilization has occurred on squirreltail and basin wildrye species with heavier levels of utilization occurring on lupine. The more vigorous species of squirreltail and basin wildrye are often caged. Sandberg's bluegrass and squirreltail are the dominant grass species present at the site (key grasses limited or missing). Wild horses were observed approximately 500 yards from key area.
	A-21 (Near Seeding)	This site shows a possibility of heavy past use due to the low amounts of key grass species and high levels of Sandberg's bluegrass. Pedastalling of bluegrass is occurring at moderate levels. Squirreltail is mostly caged and the site lacks key species such as Indian ricegrass and bluebunch wheatgrass.
	A-22 (North of Hall Creek)	Caging of basin wildrye and Indian ricegrass is uncommon. Slight levels of utilization on Indian ricegrass and basin wildrye. Vegetation at this site appears healthy and vigorous in size, shape, color, and reproductive capability. Seed stalks are still attached to basin wildrye and Thurber's needlegrass.
Grass Valley	GV-33 (Cowboy Rest)	Sandberg's bluegrass and other grasses are dead centered which may suggest heavier past use of the area. Utilization has occurred on this year's growth. Sandberg's bluegrass is the dominant species and pedastalling is common. Low amounts of key grass species present at the site and squirreltail and Indian ricegrass caging is common. Grass species show lower levels of vigor in size, shape, and color.

20 In degraded ranges, the limited grasses left on the site are often "caged" within or under shrubs. These grasses remain because they were less accessible being protected by the shrub that surrounds it.

HMA	Key Area/Area	Comments/Observations
	<p>GV-34 (Corral Canyon)</p>	<p>Caging of key species is common throughout this area. Thurber's needlegrass is showing both pedastalling and caging. There is a low vigor level (color, height, shape) especially in Thurber's needlegrass and Indian ricegrass species. Bluebunch wheatgrass present but rarely encountered. There is utilization on Thurber's needlegrass and Indian ricegrass. Sandberg's bluegrass appears to be increasing throughout the interspaces at this site. Many of the grasses have matured and seeded.</p>
	<p>GV-35 (North Skull Creek)</p>	<p>Some areas express water erosion (erosion pavement, pedastalled areas, and water flow pattern) and slight terraces in the soil. Low species diversity among the grasses. Sandberg's bluegrass is the dominant species at this site. Squirreltail is of low vigor and mostly caged. Utilization has occurred on vetch and <i>astragalus spp.</i> . Ground litter is minimal and "paved" surface areas are common. Shrubs are dominant throughout the site.</p>
	<p>GV-36 (South Skull Creek)</p>	<p>Overall, species diversity and vigor is high. There is slight utilization on key species such as Thurber's needlegrass and bluebunch wheatgrass. Squirreltail is also showing low levels of utilization. More vigorous individuals of bluebunch and squirrel tail are often found caged. Some Thurber's needlegrass plants are dead centered and pedastalled, and appears less vigorous than other species such as Sandberg's bluegrass, squirreltail, bluebunch wheatgrass, and basin wildrye. Younger individuals of basin wildrye are common at this area. Browse species such as service berry and snow berry did not show hedging or heavy utilization.</p>

In addition to these monitoring efforts, monitoring within previously burned areas was also completed within the New Pass/Ravenswood and Callaghan HMAs within the Raven and Silver Creek burned areas. The Raven Fire burned in the New Pass/Ravenswood HMA in 2007. Refer to the 2007 New Pass/Ravenswood HMA EA for more information. Currently, most sites monitored within the burned area are dominated by Russian thistle, annual mustard, clasping pepper weed, cheatgrass, and halogeton. Sandberg bluegrass and bottlebrush squirreltail are lesser species on these sites. Seeded species were rarely seen along transect, and those present in the area include basin wildrye and Indian ricegrass. Young sagebrush, greasewood, and rabbitbrush are present at some sites.



Site of 2007 Raven burn.



Site of 1999 Antelope Burn

Both photos taken during the aerial inventory of the New Pass/Ravenswood HMA in September 2009.

The Grass Valley fire burned 1,200 acres within the western portion of the Rocky Hills HMA in August 2010.

Environmental Consequences

Proposed Action

Impacts to rangeland vegetation resources would be similar to those described in the EAs referenced above, which analysis is incorporated by reference. Through the Proposed Action, the wild horse populations would be maintained within the established AML ranges, allowing for improvements in vegetative resource condition and preventing the degradation that would occur from an over population of wild horses if the gather does not take place. Riparian and upland vegetation resources would benefit and would exhibit improvement as indicated by increased vigor, production and frequency of desirable key plant species and improved soil stability. Given the current condition of the vegetative resources, however, improvement would be slow to occur, and would occur most often during years of average or above average precipitation levels. During years of drought or low precipitation, improvement would be stalled or could be reversed. Healthy plants that are able to finish their life cycles, set seed and store carbohydrates before the end of the growing season are more capable of withstanding drought, maintaining their presence in the plant community for years to come. Slight improvement has already been observed within the HMAs since the last gathers. Maintaining AML would further continue this improvement and promote progress towards attainment of Rangeland Health Standards.

Alternative 1

The population modeling indicates that without a gather until 2012 or 2013 (which is the estimated earliest time for a future gather if the gather is delayed), wild horse populations within the AMLs would reach at least 120-157% of the upper limit of the established AMLs. Impacts to the rangeland vegetation resources would include signs of trailing, trampling, and excessive utilization levels (i.e., above the utilization levels necessary to promote rangeland health) throughout portions of the HMAs depending on wild horse distribution, environmental conditions and precipitation levels. The severity of the impacts would correspond to population levels in excess of AMLs and specific areas of concentration of wild horses within the HMAs. Improvement to rangeland health (increased vigor, production, frequency of plant species and improved soil stability) that has been realized since the last gather would be offset by impacts due to overpopulation and increasing numbers of wild horses. As the population increases above the established AMLs, impacts would continue and would include reduced presence of key perennial grasses and forbs in the understory, increased occurrence of cheatgrass and other annual species, increased bare ground and soil erosion and decreased rangeland health. Progress would not be made towards attaining Rangeland Health Standards and native vegetative communities would be further degraded and unable to recover from the effects of the prior excess wild horse populations.

3.6. Riparian-Wetland Resources and Water Quality

Detailed information about the riparian and wetland resources within these HMAs is provided in the 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs identified in Section 1.1. Additional monitoring has taken place at numerous riparian areas within the affected HMAs through on the ground site visits and aerial observations and documentation during wild horse inventory. Despite the recent gathers, the wild horse populations within Rocky Hills and New Pass/Ravenswood HMAs continue to be represented by an uneven distribution of wild horses consisting of large concentrations of animals in certain locations of the HMA. These concentrations are in some cases being caused by limited water availability, but are also resulting in concentrated uses on these riparian areas as indicated by trailing to water sources and trampling, utilization and bare ground at spring and other water sources.

Twelve riparian locations were assessed in 2010 within the New Pass/Ravenswood HMA through site visits, field notes and photos. Functioning condition assessments were not completed at this time. The observers noted the species present and whether they were early seral (colonizing species) or late seral (stabilizing species), the amount of vegetation cover or bare ground, soil movement, bank alteration, water available and the use by livestock, wild horses or wildlife.

These riparian areas consisted of springs and developed water improvements that were observed during wild horse inventory flights in September 2008. Some of these sites had been previously rated for functioning condition (2006) and some had not. The data recorded and the photos taken at these sites indicate that wild horse use of most of these springs has been heavy. These sites may have experienced slight improvement since the previous gather but are at serious risk of further decline due to lack of vegetation and lack of appropriate riparian species, excessive bare ground, severe disturbance of banks from hoof action, and trailing. These sites are located primarily in the Manhattan Mountain Allotment, with two sites located within the Gilbert Creek Allotment. The table below summarizes the observations made at these locations.

Table 21. Riparian monitoring observations, New Pass/Ravenswood HMA 2010.

Area #	Name/Location	Site Type	Previous Rating	Type of vegetation	Sign Present
1	Caton Spring	Undeveloped Spring	Non-functional in 2006	Late and Mid Seral	Wild horse and deer
	Issues/Comments: No riparian vegetation at ponded area. Excessive disturbance from hoof action. Light use of rushes (<30%).				
2	Rocky Gap Spring	Undeveloped Spring	Non-functional in 2006	Early and Mid Seral	Fresh wild horse sign and tracks prevalent
	Issues/Comments: Excessive bare soil, one of two springs has no vegetation. Utilization of rushes est. 30-50%. No recruitment (increase) of willow. Heavy bank alteration. Many trails into the area. Water is low flowing.				
3	South of Ravenswood Peak	Stringer Meadow with pipeline/trough	Not Rated	Early and Mid Seral	Fresh wild horse sign, historic livestock
	Issues/Comments: Horse hoof disturbance concentrated near spring source. No stabilizing species present at source. Some recruitment of narrowleaf willow occurring from existing mature clump. Current minimal utilization (<10%). Trickle of water into trough.				
4	Near Meadow Spring	Undeveloped Spring	Not Rated	All Early Seral	Fresh wild horse and historic cattle
	Issues/Comments: Poor condition with excessive hoof alterations and bare soil. Riparian area shrinking from erosion and terracing. Hummocking. Colonizing species. Trailing into the spring.				
5	Lower Meadow Spring	Spring source/stream channel	Not Rated	Mid Seral and Canada thistle (noxious)	Fresh wild horse tracks, wild horse sign and old cattle sign
	Issues/Comments: Lack of adequate vegetation. Accelerated erosion and active downcutting occurring. Trailing to the stream. Ponded water. Large amounts of bare soil and excessive bank alteration				
6	Steiner Spring	Developed Spring (pipeline to a trough)	Non-Functional in 2006	Mid Seral	Old cattle sign
	Issues/Comments: Browse of wild rose shrub est. 30%. Water overflows the trough.				
7	Upper Willow Creek	Spring source/stream channel	Not Rated	Primarily Early Seral, some Mid Seral	Wild horses at the location. Fresh wild horse sign and tracks
	Issues/Comments: Bare soil at the spring source. Stream reach lacks vegetation. Unstable banks. Bank alteration from hoof disturbance. Trails. Excessive bare soil and erosion affecting water quality.				
8	Upper Willow	Undeveloped Spring	Not Rated	Early, Mid and	Old wild horse and cattle

Area #	Name/Location	Site Type	Previous Rating	Type of vegetation	Sign Present
	Creek			Late Seral	sign
	Issues/Comments: Spring is terraced (sunk in). Some water available. Low utilization levels. 2010 photo reflects more vegetation than observed aerially in 2008.				
9	Willow Creek Spring	Spring source/stream channel	Not Rated	Mix of Early, Mid and Late Seral	Fresh wild horse and cattle tracks and sign
	Issues/Comments: Water available throughout reach. Reach is good condition. Minimal bank alteration and utilization. 3 foot head cut is a threat to the system. Vegetation consists of stabilizers, colonizers and willow. Nebraska sedge present at lower end. Utilization of woody species estimated 20-40%. Good vegetation cover. Recruitment of Booths Willow.				
10	Lower Willow Creek Spring	Spring source/stream channel	Properly Functioning in 2006	Early, Mid and Late Seral	Cattle present. No wild horse sign
	Issues/Comments: Some of the vegetation present indicates disturbance. Baltic Rush is present, but not throughout. Utilization of rush is 20-40%. Water available in 2 pools at top and bottom of reach. Lacks stabilizing vegetation and bank cover. Disturbance from hoof action created excessive bank alteration. Bare banks and trailing.				
11	West of 305 by private land fence	Well/Spring/Developed trough	Not Rated	Mid and Late Seral	Fresh wild horse sign, historic cattle sign
	Issues/Comments: Borders private land. Pipe exits the ground, water accessible in ponded area around the pipe. Troughs are non-functional.				
12	Gilbert Creek Southeast Spring	Undeveloped Spring	Not Rated	Mid and Late Seral	Wild horses and cattle present. Fresh sign and tracks.
	Water ponded at surface is sufficient for more vegetation cover. Lack of vegetation. Some stabilizing species in sparse amounts. Poor vigor. Utilization of Nebraska Sedge est. 40-60%. Excessive bank alteration from hoof action.				

The following photos reflect the various conditions at the riparian areas assessed in the New Pass/Ravenswood HMA in 2010.



Riparian area #4, near Meadow Spring. Photo on the left taken August 2010, Photo on the right taken September 2009 during an aerial inventory.



Caton Spring – riparian area #1.



Rocky Gap Spring – riparian area #2



Upper Willow Creek. Riparian area #7 above.



Willow Creek Spring. Riparian area #9



New Pass/Ravenswood HMA --- Big Antelope Spring, located on private land, and often heavily relied on by wild horses.



New Pass/Ravenswood HMA --- Big George Spring, developed for, but not exclusively for wild horses in the 1990's.

Many sites in different allotments within the HMAs are recovering sufficient vegetative and landform attributes to provide for riparian/wetland function. Wild horses and burros have a defined home range and visit spring features more frequently than others. Populations above AML and passive, continuous livestock grazing management regimes tend to cumulatively degrade certain riparian/wetland resources,

because the intensity, duration and frequency of herbivory, browse and hoof alteration magnitudes are simply too great to allow for riparian function. The MLFO, through Rangeland Health Evaluations and permit renewals has made changes in recent years to the livestock grazing systems within the affected allotments designed to make progress towards attaining RAC Standards and Guidelines. In many cases livestock permits were modified regarding season of use and eliminated or reduced use of riparian areas during the “hot season” to better manage for riparian function.

Site visits were conducted within the Austin Allotment at Hall, Iowa, Boone and Italian Creeks in August of 2010 to determine whether utilization rates were meeting management objectives and to determine overall condition/trend of each stream system. Prominent highlights are as follows. Hall Creek had increased recruitment from key woody vegetation (i.e. willow species) supporting multiple age class structure. Iowa Creek also had good recruitment from key woody and herbaceous vegetation, particularly increased plant vigor and distribution of sedge and rush species. Sites in Boone showed largely the same improvements as above, however, gully erosion is continuing to accelerate erosion into the aquatic habitat until the gully develops a stable dimension, pattern and profile. Italian Creek is also going through gully erosion channel evolution processes that need to establish a dynamic equilibrium with sediment, water, slope and channel width before stabilizing vegetation can establish over the long term. These improvements in riparian function and trend can be attributed to both the recent changes to livestock management in the allotment as well as to the removal of excess wild horses from the Callaghan HMA in 2008/2009.

Environmental Consequences

Proposed Action

Impacts to riparian wetland resources would be similar to those described in the EAs referenced above, which analysis is incorporated by reference. Maintaining the wild horse populations within the established AML ranges and promoting a thriving natural ecological balance within the HMAs would



Cadet Trough Spring – major watering location for large numbers of horses in the Rocky Hills HMA, Sept. 2009.



Wild horses within a tributary of Pat Canyon in the Rocky Hills HMA, Sept. 2009.

offer the best opportunity to improve riparian resources that have historically been heavily used by wild horses. Maintaining appropriate population levels and preventing over population resulting from excess wild horses would promote more even distribution throughout the HMAs, reducing concentrated use in the regions near critical water sources and would encourage improvement of these areas through

stabilization of banks and soils in the area, increased production of key riparian vegetation such as sedges, rushes and willow, and would improve overall quantity and quality of these areas for use by wildlife in addition to wild horses and livestock. Through continued improvement, riparian systems would increase trends in functioning condition and make significant progress towards meeting the Standards for Rangeland Health.

Alternative 1

Without a gather to administer fertility control and to remove a minimal number of wild horses at this time, the population would continue to grow and exceed the upper limit of the established AMLs in all of the HMAs by spring 2011, and could exceed 120-157% of these AMLs by the time another gather could be scheduled to remove excess wild horses. Populations above AML would compete for available waters and may result in increased trailing between desired forage areas and perennial water sources. In drought years, water could become limiting especially within the Rocky Hills and New Pass/Ravenswood HMAs. Increased density of wild horses within the HMAs would increase the disturbance and impacts to riparian areas, which would include trailing, trampling and utilization of riparian vegetation. Soils would be disturbed in these areas leading to increased erosion and sedimentation of the riparian systems. Impacts to these areas would correspond to the levels of the populations in excess of AMLs and the number of available waters in relation to the populations. Progress would not be made towards attaining Proper Functioning Condition on these systems or towards meeting Rangeland Health Standards.

3.7. Soils

Detailed information about soils within these HMAs is provided in the 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs identified in Section 1.1. Some soil stability sampling has been completed within the Rocky Hills and Callaghan HMAs, but has not been analyzed or summarized at this time.

Environmental Consequences

Proposed Action

Impacts to soils would be similar to those described in the EAs referenced above, which analysis is incorporated by reference. Similar to other resources within the proposed gather area, soils would benefit if the wild horse populations are maintained within the established AMLs. Trailing is excessive in some portions of the HMAs leading to accelerated wind and water erosion. By maintaining wild horse populations at AML, these impacts would be lessened and soil stability could improve. As vegetation and riparian resources experience upward trends, soils would improve as well, as perennial key plant species increase and develop deep roots to maintain soil health.



Trailing within the New Pass/Ravenswood HMA which causes accelerated erosion (on the left).

Alternative 1

As noted under other resource sections, populations of wild horses within these HMAs could exceed 120-157% by the time a delayed gather could be conducted in the future to remove excess wild horses. Current disturbances to soils (trailing, trampling) would continue and the severity of the impacts would

correspond to population levels in excess of AMLs and specific areas of concentration of wild horses within the HMAs. Improvements that have been realized since the most recent gathers would be offset by new and increased disturbance caused by an overpopulation of wild horses.

3.8. Threatened & Endangered Species, Special Status Species, Migratory Birds and Wildlife

Detailed information about wildlife within these HMAs is provided in the 2007 New Pass/Ravenswood and 2008 Callaghan Complex Gather Plan EAs identified in Section 1.1.

No federally listed threatened or endangered species inhabit the Callaghan Complex. BLM protects by policy (see 6840 section of the BLM Manual), *special status* plant and animal species. The list includes certain species designated by the state of Nevada, as well as species designated as “sensitive” by the Nevada BLM State Director.

Sage-grouse occupy most of the proposed gather area though populations seem to be experiencing long-term declines. Sage-grouse are currently a candidate species (warranted, but not listed). Generally, risks to sage grouse within the Population Management Units (PMUs) that fall within the HMAs are thought to include:

- reduction in brood rearing habitat due to erosion of stream channels (channelization),
- down-cutting and drying of meadows;
- a reduction in size of spring and seep sites due to the removal of vegetative cover and shade by ungulates;
- reduction of native perennial grasses necessary for nesting cover;
- reduction of native forbs for pre-egg laying and chick development; pinyon-juniper encroachment into big sagebrush sites;
- old, decadent big sagebrush stands;
- human disturbance;
- the loss of big sagebrush due to wildfire.

The Callaghan HMA is found within the Toiyabe PMU, one of the larger PMUs in the Battle Mountain District, with 64 leks and 3,440-4,010 sage-grouse (South Central Nevada Sage Grouse Conservation Plan 2004). Because of the number of sage-grouse found in this PMU, conservation planning has been deferred, and conservation planning for more imperiled PMUs was given priority.

The New Ravenswood HMA spans 3 PMUs: Clan Alpine, Desatoya, and Toiyabe. The Clan Alpine and Desatoya PMUs fall under the management of the BLMs Carson City Field Office. These PMUs have sage-grouse that are considered members of metapopulations that migrate and genetically mix within the Desatoya Range. There are 19 known leks in the Desatoya PMU, and numbers in the Clan Alpine PMU are unknown. Conservation strategies for these PMUs include moving tanks and troughs away from the spring sources and riparian areas to lessen impacts from horses and livestock, and fencing some spring sources to further protection (http://www.ndow.org/wild/conservation/sg/plan/SGPlan063004_N.pdf).

As sage-grouse conservation plans are written and revised in Nevada, BLM will be develop conservation strategies regarding use by wild horses in affected PMUs.

Environmental Consequences

Proposed Action

Impacts to Threatened, Endangered and Special Status Species, Migratory Birds and Wildlife would be similar to those described in the EAs referenced above, which analysis is incorporated by reference. Direct impacts to sage-grouse are not anticipated as the proposed gather would be completed during winter months and would not interfere with strutting, nesting or brood rearing activities. Refer to the SOPs. Indirect impacts to various wildlife species through the Proposed Action would be positive and would include improved wildlife habitat as in the health of vegetation communities and riparian areas used by wildlife species improves over time. Managing wild horse populations within the established AMLs would ensure that unacceptable levels of competition with wildlife species do not occur since a thriving natural ecological balance would be maintained.



Pronghorn Antelope in the Austin Allotment portion of the Callaghan HMA. Summer 2010.



Mule deer in the Grass Valley Allotment portion of the Callaghan HMA. Summer 2010.

Alternative 1

Under Alternative 1, it was estimated that the next gather in these areas could occur in 5-7 years from the most recent gather. According to the population model, populations would reach and could exceed 120-157% of the upper limit of the established AMLs. A thriving natural ecological balance would not be maintained and excess wild horse populations would impact wildlife by causing downward trends in rangeland and riparian health and through direct competition with various species of wildlife for forage and water.

3.9 Health and Safety

In recent gathers, members of the public have increasingly traveled to the public lands to observe BLM's gather operations. Members of the public can inadvertently wander into areas that put them in the path of wild horses that are being herded or handled during the gather operations, creating the potential for injury to the wild horses or burros and to the BLM employees and contractors conducting the gather and/or handling the horses as well as to the public themselves. Because these horses are wild animals, there is always the potential for injury when individuals get too close or inadvertently get in the way of gather activities.

The helicopter work is done at various heights above the ground, from as little as 10-15 feet (when herding the animals the last short distance to the gather corral) to several hundred feet (when doing a recon of the area). While helicopters are highly maneuverable and the pilots are very skilled in their

operation, unknown and unexpected obstacles in their path can impact their ability to react in time to avoid members of the public in their path. These same unknown and unexpected obstacles can impact the wild horses or burros being herded by the helicopter in that they may not be able to react and can be potentially harmed or caused to flee which can lead to injury and additional stress. When the helicopter is working close to the ground, the rotor wash of the helicopter is a safety concern by potentially causing loose vegetation, dirt, and other objects to fly through the air which can strike or land on anyone in close proximity as well as cause decreased vision.

During the herding process, wild horses or burros will try to flee if they perceive that something or someone suddenly blocks or crosses their path. Fleeing horses can go through wire fences, traverse unstable terrain, and go through areas that they normally don't travel in order to get away, all of which can lead them to injure people by striking or trampling them if they are in the animal's path.

Disturbances in and around the gather and holding corral have the potential to injure the government and contractor staff who are trying to sort, move and care for the horses and burros by causing them to be kicked, struck, and possibly trampled by the animals trying to flee. Such disturbances also have the potential for similar harm to the public themselves.

Public observation of the gather activities on public lands will be allowed and would be consistent with BLM IM No. 2010-164 and visitation protocols for scheduled and non-schedule visitation in Appendix F.

Environmental Consequences

Proposed Action

Public safety as well as that of the BLM and contractor staff is always a concern during the gather operations and would be addressed through Observation Protocols that have been used in recent gathers to ensure that the public remains at a safe distance and does not get in the way of gather operations, and by the presence of law enforcement officers at the site. These measures minimize the risks to the health and safety of the public, BLM staff and contractors, and to the wild horses themselves during the gather operations.

No Action Alternative

There would be no gather related safety concerns for BLM employees, contractors and the general public as no gather activities would occur at this time.

3.10. Wild Horse Gather Mitigation Measures

This EA has analyzed the potential impacts that could occur with completion of a gather to remove excess wild horses and apply fertility treatment to released mares. The following section summarizes the measures developed to ensure that these potential impacts are minimized or avoided entirely.

BLM staff is on-site at all times to observe the gather, monitor animal health, and coordinate the gather activities with the contractor. The SOPs outlined in Appendix A would be implemented to ensure that the gather is conducted in a safe and humane manner, and to minimize potential impacts to or injury of the wild horses. Both the BLM Wild Horse and Burro Specialists and the Gather Contractor and crew are very attentive and sensitive to the needs of all wild horses captured during gathers, and ensuring their health, safety and well being during and after the gather is a focus and priority.

BLM staff would coordinate with the contractor on a daily basis to determine animal locations in proximity to trap corrals, and to discuss terrain, animal health, gather distances and other gather logistics to ensure animal safety.

An Animal and Plant Inspection Service (APHIS) or other veterinarian may be on-site during the gather, as needed, to examine animals and make recommendations to the BLM for care and treatment of wild horses. Injuries would be examined and treated if needed by a veterinarian at the holding corrals.

Fertility control treatment would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs, Appendix C). The treatment would be controlled, handled, and administered by a trained BLM employee.

BLM policy prohibits the gathering of wild horses with a helicopter, (unless under emergency conditions), during the period of March 1 to June 30 which includes and covers the six weeks that precede and follow the peak of foaling period (mid-April to mid-May).

The gather helicopter pilot allows the wild horses to travel at their own pace for most of the distance to the gather location. The pilots are very experienced and do not place undue pressure on the horses until just the right time when entering the wings of the gather trap, when it is important to move the horses safely into the gather corrals and prevent them from turning back or trying to disband at the last minute. This is to avoid the need to re-gather or to rope the horses from horseback which could expose the wild horses to additional stress or injury. Foals separated during the gather process are safely gathered and transported to the gather corrals to be reunited with their mother.

Transport and sorting is completed as quickly and safely as possible so as to move the horses into the large holding pens where they can settle in with hay and water. When releasing animals back to the range, they would be returned to same general area from which they were gathered.

Any old, sick or lame horses unable to maintain an acceptable body condition (greater than or equal to a Henneke body condition score (BCS) 3) or with serious physical defects such as club feet, severe limb deformities, or sway back would be humanely euthanized as an act of mercy. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy (Washington Office Instruction Memorandum 2009-041).

Individual animals are monitored and veterinary or supportive care is administered as needed. Electrolyte powder can be administered to the drinking water and electrolyte paste administered to individual animals if needed. The overall health and well being of the animals is continually monitored through both summer and winter gathers to adjust gather operations as necessary to protect the animals from gather related health issues. Any orphan foals are attentively cared for through administering electrolyte solutions and/or feeding milk replacer as needed to support their nutritional needs. Foster or adoptive homes are identified to ensure good care to these young animals.

Should the need arise; BLM equipment operators would plow trails in the snow to facilitate the safe and humane movement of horses to a gather site. If dust becomes an issue, BLM ensures that contractors reduce speeds on dusty roads and water down corrals and alleyways.

The SOPs in Appendix A identify additional measures implemented during the completion of wild horses gathers to minimize or avoid impacts to wildlife, and other resources in addition to wild horses.

Gather corral sites and temporary holding facilities would be located in previously used sites or other disturbed areas whenever possible (such as gravel pits, or road pull outs or junctions). Gather areas would not be constructed near riparian areas or near infestations of noxious weeds. Potential trap sites or holding facilities would be inventoried for cultural resources and noxious weeds. If cultural resources or noxious weeds are encountered, these locations would not be utilized unless they could be modified to avoid any impacts.

Observation Protocols would be implemented to ensure the safety of the public, BLM employees and contractors and the wild horses while members of the public are in the area to observe the gather operations. These protocols are detailed in Appendix F.

4. Cumulative Effects Analysis

The NEPA regulations define cumulative impacts as impacts on the environment that result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The cumulative impacts study area (CSA) for the purposes of evaluating cumulative impacts is the Callaghan, Bald Mountain, Rocky Hills and New Pass Ravenswood HMAs.

According to the 1994 BLM *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values identified during scoping that are of major importance. Accordingly, the issues of major importance to be analyzed are: Wild Horses and Vegetation.

The cumulative affects analysis completed for the 2007 New Pass/Ravenswood and 2008 Callaghan Complex EAs has been reviewed and found to be very comprehensive and address most cumulative impacts of the Proposed Action and Alternative 1. Please refer to these documents for this information. The section below will only address specific cumulative impacts that differ from those already addressed.

4.1. Past and Present Actions

Wild Horses

The actions which have influenced today's wild horse populations are primarily wild horse gathers, which have resulted in the capture and removal of excess horses, and release of horses back into the HMAs (refer to Chapter 4 of the above referenced EAs for additional information). Section 3.3 summarizes the results of the most recent gathers conducted in these areas.

Vegetation

Refer to the EAs referenced above for cumulative effects analysis. Currently slight improvement has been observed within portions of these HMAs which is attributed to the previous gathers and removals of excess wild horses, changes to livestock management (refer to previous EAs), and moderately increased precipitation levels since 2008. Past impacts by wild horse overpopulation have included heavy and severe utilization levels, trampling, heavy trailing and concentrated use of riparian areas. The present condition of the vegetation resources is characterized by a lack or absence of many of the key

perennial species that are part of the Potential Natural Community for these areas, especially in the lower elevations that receive lower precipitation levels.

4.2. Reasonably Foreseeable Future Actions

Wild Horses

Over the next 10-20 year period, reasonably foreseeable future actions include gathers to remove excess wild horses in order to manage population sizes within the established AML ranges. These gathers could continue on a two year schedule, retreating with fertility control as described for the Proposed Action. Another scenario which could occur would be to repeat gathers every 3-5 or 5-7 years with or without fertility control. Future gathers could also involve adjustment of sex ratios to slow population growth. A Herd Management Area Plan (HMAP) could also be completed which would establish short and long-term management and monitoring objectives for the HMAs and their habitat. It is anticipated that analysis of monitoring data will result in the need to reduce the AML of the New Pass/Ravenswood HMA as well as to set an AML range in future years. Conversely, future improvements in habitat could result in increases to AMLs in any or all of these HMAs.

Any future wild horse management would be analyzed in appropriate environmental documents following site-specific planning with public involvement.

Other reasonably foreseeable future actions include the transport, handling, care, and disposition of the excess wild horses removed from the range. Initially wild horses would be transported from the capture/temporary holding corrals to a designated BLM short-term holding corral facility. From there, the animals would be made available for adoption or sale to individuals who can provide a good home, or to LTH pastures.

While there is no anticipation for amendments to the Wild Free-Roaming Horses and Burros Act that would change the way wild horses and burros could be managed on the public lands, the Act has been amended three times since 1971. Therefore, there is potential for amendment as a reasonably foreseeable future action, though the specifics any such amendments are unknown.

Similarly, the BMDO is in the process of revising the Tonopah and Shoshone-Eureka Land Use Plans. The revised Plan could influence the management of wild horses within the District in the future pertaining to Herd Management Area Plans, gathers, allocation of use to wild horses, burros, livestock and wildlife, monitoring and setting and adjusting AMLs.

Vegetation

Livestock grazing is expected to continue at similar stocking rates and utilization of the available vegetation (forage) would also be expected to continue at similar levels. Rangeland Health Assessments would be planned to be completed in future years which could result in changes to livestock grazing systems such as changes to season of use, reduced or increased permitted use levels, or implementation of rotational grazing systems. The Grass Valley Allotment is tentatively schedule for evaluation in the next few years and could involve changes to the permitted use for livestock or changes to the season of use. Continuing to graze livestock in a manner consistent with grazing permit terms and conditions would be expected to make significant progress towards achieving Standards for Rangeland Health. Other actions which could affect vegetation include future wild horse gathers as identified above. Currently, geothermal power exploration and development is occurring within portions of the New Pass/Ravenswood HMA and near the southeast boundary of the Callaghan HMA. Mining exploration

and development activities could continue and increase, causing disturbance to vegetation resources. These actions could be large in magnitude and could span 10-50 years into the future. Wildfire and the associated stabilization/rehabilitation is another reasonably foreseeable future action. Wildfire changes the vegetative composition and could affect forage quality and quantity and the habitat for wild horses, livestock and wildlife.

4.3. Cumulative Impacts Summary

Impacts Common to the Proposed Action Alternative

The cumulative effects associated with the capture and removal of excess wild horses or the application of fertility control vaccine to release mares includes gather-related mortality of less than 1% of the captured animals, about 5% per year associated with transportation, short term holding, adoption or sale with limitations and about 8% per year associated with long-term holding. This compares with natural mortality on the range ranging from about 5-8% per year for foals (animals under age 1), about 5% per year for horses ages 1-15, and 5-100% for animals age 16 and older (Stephen Jenkins, 1996, Garrott and Taylor, 1990). In situations where forage and/or water are limited, mortality rates increase, with the greatest impact to young foals, nursing mares and older horses. Animals can experience lameness associated with trailing to/from water and forage, foals may be orphaned (left behind) if they cannot keep up with their mare, or animals may become too weak to travel. After suffering, often for an extended period, the animals may die. Before these conditions arise, the BLM generally removes the excess animals to prevent their suffering from dehydration or starvation.

The other cumulative effects which would be expected when incrementally adding the Proposed Action Alternative to the CSA would include continued improvement of upland vegetation conditions, which would in turn benefit permitted livestock, native wildlife, and wild horse population as forage (habitat) quality and quantity is improved over the current level.



Release of Rocky Hills HMA mares back to the HMA following the gather in January 2009.

A continued two-year capture, treat for fertility control and release protocol would result in the population growth balancing with the minimal removals of young horses and natural mortality levels. Eventually, few or no horses would need to be removed from the range in future gathers. Under the two year protocol, negligible numbers of animals would have to be put in long term holding or through the sale program, and all young horses removed from the range would be healthy and highly adoptable.

A cycle of AML maintenance, improved rangeland and improvements to animal health could result. In past years, the gather frequency has averaged 5-7 years with populations increasing to many times the AML, followed by gathers that required the removal of a large portion of the population (up to 92%) to reach AML given the high population growth rate and length of time between gathers. Animal health was an issue during some of these gathers due to over population coupled with drought conditions, which often precluded the ability to select animals for release based on characteristics, age or other

traits. The two-year protocol would result in the *release* of approximately 80 percent of the animals gathered (after application of fertility treatment to mares), removal of primarily young animals, and would maintain stable populations within the established AML ranges, avoiding the cycle of over populated ranges, necessitating the gather and removal of large numbers of excess animals in order to achieve the lower limit of AML.

Through a two-year protocol, repeated gathers would have the effect of reducing the gather efficiency as wild horses learn to avoid the helicopter. Though horses would be disturbed every two years, most horses would be re-released back to the range resulting in less disturbance to existing social structures.

If a two year protocol is not continued, and a gather cycle of every 3-4 or 5-7 years with fertility control occurs, the effects would be similar with a few exceptions. Increased numbers of horses would need to be removed during each gather to achieve the lower limit of AML. Fertility control would not be completely effective at controlling the population because of the increased gather interval, which would exceed the period during which the fertility control vaccine is effective. Increased numbers of older wild horses could need to be removed that may need to be maintained in LTHPs. Age selection criteria could be implemented that would restrict removal of older horses, thus increasing the proportion of older horses remaining on the range.

Cumulatively, there should be more stable wild horse populations, less competition for limited forage and water resources, healthier rangelands, and wild horses, and fewer multiple-use conflicts in the area over the short and long-term. Over the next 10-20 years, continuing to manage wild horses within the established AML range would ensure a thriving natural ecological balance and multiple use relationship on public lands in the area.

Impacts of Alternative 1

Under Alternative 1, the wild horse populations would exceed the established AMLs in 2011 and could exceed 1,800 horses or 150%+ of the upper limit of AML. Movement outside the HMAs would be expected as greater numbers of horses compete for food, water and space. Habitat decline would occur and improvements experienced since the last gather would be offset by increasing degradation to the range as the wild horse population size increases. Animal health would also not improve and condition of mares and foals could be less than optimum, as documented in past gathers within the Callaghan, Bald Mountain and New Pass/Ravenswood HMAs. Cumulative impacts would be decreased rangeland health. Attainment of site-specific vegetation management objectives and Standards for Rangeland Health would not be achieved. AML would not be achieved and the opportunity to collect the scientific data necessary to re-evaluate AML levels, in relationship to rangeland health standards, would be foregone.

5.0. Monitoring and Mitigation Measures

The BLM COR and PIs assigned to the gather would be responsible for ensuring contract personnel abide by the contract specifications and the SOPs (Appendix A). Ongoing monitoring of range vegetation, riparian areas, aerial population surveys, and animal health would continue.

Fertility control monitoring would be conducted in accordance with the SOPs (Appendix C). In future gathers, biological samples would be collected to analyze genetic diversity of the wild horses within these HMAs and compare to the baseline samples already analyzed.

6.0. List of Preparers

The following list identifies the interdisciplinary team member's area of responsibility:

Shawna Richardson	Project Lead/Wild Horse and Burro Specialist
Angelica Rose	Planning and Environmental Coordinator
Dustin Hollowell	Wild Horse and Burro Specialist (Tonopah)
Gerald Dixon	Native American Coordinator
Robert Hassmiller	Hydrologist
Michael Vermeys	Noxious and Invasive Species Specialist
Jason Spence	Rangeland Management Specialist
Ruth Luke	Rangeland Management Specialist
Susan Cooper	Wildlife Biologist

7.0. Consultation and Coordination

Public hearings are held annually on a state-wide basis regarding the use of helicopters and motorized vehicles to capture and transport wild horses and burros. During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses and burros. The Elko District Office held the state-wide meeting on July 1, 2010; thirteen public participants attended and their comments were entered into the record for this hearing. Most were in support of the use of helicopters and the gathering of excess wild horses. Standard Operating Procedures were reviewed following this public hearing and no changes to the SOPs were indicated based on this review.

8.0. Public Involvement

On October 2, 2007, the Bureau of Land Management (BLM), Battle Mountain Field Office, sent the *New Pass/Ravenswood and Augusta Mountains HMAs Burned Area Wild Horse Removal Gather Plan and Environmental Assessment (EA) # NV062-EA07-188* to sixty-three organizations and individuals on the interested public mailing list for public review. One response in support of the proposed gather was received from the Nevada State Historic Preservation Office. No additional comments were received from the interested public. No prior scoping was done because of the urgent nature of the gather (post wildfire) and the timelines for completion of the EA after the fire. The Finding of No Significant Impact (FONSI) and Decision were issued for this gather on October 31, 2007. No appeals were received on the Decision.

Prior to completion of the 2008 Callaghan Complex EA, a scoping letter dated April 24, 2008, was mailed to sixty-two individuals, organizations or State and Federal agencies which comprise the interested public list for the Callaghan Complex.

Responses were received from the Nevada Division of State Lands and the Nevada State Historic Preservation Office in support for the proposed wild horse gather. Additional responses were received from several individuals and organizations, involving comments, questions and recommended topics for analysis within the EA. The MLFO also received comments from livestock permittees during meetings pertaining to allotment administration and monitoring. These comments/concerns were considered and incorporated in the preparation of the environmental assessment.



Callaghan HMA gather, January 2009.

On September 15, 2008, the MLFO, issued the *Callaghan Complex Wild Horse Gather Environmental Assessment (EA) # NV062-EA08-134* to the interested public for review. No comments were received from the interested public. A letter documenting support for the Callaghan Complex gather was received from the Nevada State Historic Preservation Office and division of State Lands. The FONSI and Decision were issued for this gather on December 9, 2008. No appeals were received on the Decision.

The Notice of Availability for the preliminary Environmental Assessment and Gather Plan was sent to the interested public list for the gather area on September 2, 2010 for a 30 day review and comment period. The EA and associated documents were posted on the Battle Mountain District website at http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html. The 2007 New Pass/Ravenswood HMA EA and 2008 Callaghan Complex EA were also posted on BLM's website at http://www.blm.gov/nv/st/en/fo/battle_mountain_field/blm_information/national_environmental.html for the public's information.

Approximately 2,550 comments were received following the notice of availability of the Preliminary EA, 30 day comment period and subsequent extension of the comment period. The overwhelming majority of these comments were fashioned from a mass form letter from an animal welfare organization. These "form letters" were reviewed and considered, however, only yielded 10 distinct comments. Unique comments or letters were received from approximately 12 individuals, agencies or organizations. Comments ranged from questions requiring additional information or clarification to comments for or against the proposed gather, removal of wild horses and use of fertility control. Many comments were not specific to this Proposed Action but generally addressed the BLMs wild horse and burro program. All comments were reviewed in preparation of the Final EA and are summarized within Appendix E. Some additions were made to the EA for clarification purposes; however, no substantial modifications were made to the EA as a result of the comments received.

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Appendix A: Wild Horse and Burro Gather Plan and Standard Operating Procedures

I. Gather Plan

The purpose of the gather plan is to outline the methods and procedures for conducting a gather to remove excess wild horses from public lands administered by the BMDO. Implementation of the Proposed Action would require the capture and removal of approximately 866²¹ wild horses. Approximately 211 wild horses would be removed to achieve a post-gather population of 862 wild horses within the Callaghan, Bald Mountain, Rocky Hills, and New Pass/Ravenswood HMAs.

A. Gather Area

The Proposed Gather Area includes the above referenced HMAs and areas outside of HMA boundaries where wild horses reside. The area is approximately 640,000 acres in size. Refer to Map 1, which display the HMAs, grazing allotment and the gather area.

B. Administration of the Contract /Gather Operations

The National Wild Horse and Burro Gather Contract would be used to conduct the wild horse and burro gather tentatively scheduled for December 2010. BLM personnel would be responsible for overseeing the contract for the capture, care, aging, and temporary holding of wild horses and burros from the capture area. BLM Wild Horse and Burro Specialists would be present during all aspects of the gather activities.

Standard Operating Procedures (SOPs) described within this document would be utilized for the capture and handling of wild horses and burros. SOPs have been developed over time to ensure minimal impacts associated with gathering, handling, and transporting wild horses and burros and collecting herd data.

It is estimated that between 14-16 gather corrals and 3-4 sets of central holding corrals would be necessary to complete the gather. Ideally, gather corrals would be established in areas of previous soil or vegetation disturbance (such as gravel pits, roads etc.), to avoid impacts to unaltered vegetation and soils. A cultural resources investigation would be conducted prior to the construction of gather corrals and temporary holding facilities. Refer to the SOPs, Section H for more detailed information.

A notice of intent to impound would be made public prior to the gather. Branded and/or claimed horses or burros would be transported to a temporary holding facility. Ownership would be determined under the estray laws of the State of Nevada by a Nevada Brand Inspector. Collection of gather fees and any appropriate trespass charges would be collected per BLM policy and regulation.

A veterinarian would be on-call or on-site for the duration of the gather to provide recommendations to Wild Horse and Burro Specialists for care and treatment of sick or injured wild horses or burros. Consultation with the veterinarian may take place prior to the euthanasia of wild horses or burros in accordance with Washington Office Instruction Memorandum (IM 2009-041). Refer to Part II for more information about the euthanasia policy.

Precautions would be taken to ensure that young or weak horse or burros foals are safely gathered and cared for appropriately. If a foal were determined to be an orphan, qualified adopters would be contacted immediately to provide proper care for the foal. Milk replacer formula and electrolytes would be available to care for orphan foals if necessary.

C. General Overview of Wild Horse Gather Methods

The gather contractor supplies and transports all equipment needed to conduct a gather to a central location where Holding Corrals are constructed. These corrals consist of six or more pens constructed of sturdy panels, with a central alleyway and working/squeeze chute in the center. Corral panels are covered with snow fencing to keep

21. The estimated gather number assumes that 80% of the existing population of 1,083 wild horses would be gathered. This number is dependent upon many factors including animal distribution, terrain, weather etc.

animals calm, and water tanks are located within the pens. The central alley and pen arrangement allows the BLM staff and the contractor to sort recently captured animals, separating animals to ship to the adoption facilities, and mares and foals from studs to prevent fighting and injury. The pen arrangement allows the contractor to off-load wild horses from stock trailers into the pens, and facilitates the loading of the horses to be transported to facilities onto large straight deck trucks. Refer to photos 5, 8, and 13 at the end of this Appendix.

At various locations throughout the gather area, smaller sets of gather corrals are constructed called “traps”. The trap or gather corrals consists of a series of pens made out of panels, and “wings” made out of jute netting that funnel wild horses into the corrals as they are captured. Refer to photos 2-3 and 10-13 at the end of this Appendix. Once captured, the horses are loaded into stock trailers and transported to the central Holding Corrals for sorting. Horses may remain in the gather site or on the stock trailer for no time at all, or up to an hour or more while other groups of horses are brought to the gather corrals.

The contractor utilizes a helicopter and pilot to conduct gathers. Use of a helicopter is humane, safe and effective. Methods for use of helicopter are well established, and the contract pilots very skilled. Wild horses settle down once gathered and do not appear to be more than slightly annoyed by the helicopter.

The pilot locates groups of wild horses within the HMA and guides them towards the gather corrals. In most cases, horses are allowed to travel at their own pace, and are not “pushed”. Distances average 4-7 miles over mixed terrain which may consist of rolling foothills, or steeper terrain, drainages, ridges and valley bottoms. The horses often follow their own trails. The pilot and the BLM staff monitor the condition of the horses to ensure their safety, checking for signs of exhaustion, injuries etc. The contractor and pilots are very skilled at designing and building gather corrals, and safely herding the horses to them. Generally, wild horses are very fit, and recover quickly from being captured. Distances that the horses travel are modified to account for summer temperatures, snow depth, animals in weakened condition, young foals, or older/lame animals. Some horses could occasionally be herded 10 miles or more at the discretion of the COR/Wild Horse and Burro Specialist.

Once near the gather site, the contractor holds a “Prada” horse at the mouth of the wings. As the pilot pushes the wild horses closer, the Prada horse is released, who then runs into the gather corrals, leading all of the wild horses with him. Refer to photos 4, 7, 10, 11, 12 and 14. Crewmembers rush in to secure gates once the horses are within the corrals. Refer to photos 4, and 11. During summer gathers, the crew often separates foals from adults at the gather site so that they may be transported to the Holding Corrals separately and avoids the risk of injury by adult animals. Foals may be loaded into a separate stock trailer where they can have shade, water, and electrolyte if necessary. Once unloaded at the Holding Corrals, foals may be rejoined with the mothers if not old enough to wean, and monitored to ensure that all of the foals “join-up”. Often paint marks are applied to the foals and mothers to assist the contractor and BLM staff in identifying pairs.

Occasionally (and more frequently if it is a difficult to gather area) helicopter-assisted roping is implemented, in which the pilot moves a small group of horses to the gather area, and the crewmembers rope the animals by horseback. This method often prevents overstressing the wild horses from repeated attempts to move them into the gather corrals. The roped horses are then led to the corrals, to awaiting stock trailers, or immobilized on the ground until they can be loaded into stock trailers.

Once horses are loaded and transported to the Holding Corrals, they are sorted by the contractor’s staff and BLM employees. The contractor looks at the horse’s teeth to estimate age while held in the chute, and the BLM staff documents age, color, body condition and lactation status of the horse. Refer to photo 6. Aging wild horses is a process of estimation due to the type of wear that can occur to the teeth of a wild horse on the range.

Injuries are noted and treated if needed. Once sorted, the wild horses are given hay and unlimited water. During this time, the BLM may consult with a veterinarian to treat sick or injured animals, or make recommendations for euthanasia.

When the pens hold enough animals to transport to the BLM adoption facility, they are loaded into the straight deck trailers that hold 35-45 wild horses depending upon their size. The trailers have three compartments so that

mares, studs and foals can be transported separately. It may require 3-6+ hours for the wild horses to arrive at the adoption preparation facility. The BMDO typically transports wild horses to National Wild Horse and Burro Center at Palomino Valley near Sparks, Nevada; or may ship horses to other facilities if needed.

During sorting, the BLM staff identifies wild horses to be re-released back to the HMA according to the objectives for the herd. Mares may be held until the end of the gather so that fertility control can be given to them to slow future population growth rates. When it is time for the release, the mares and studs are each loaded into separate stock trailers and transported back inside the HMA near water sources. The rear of the trailer is opened up, and the horses are allowed to step off and travel back into the HMA. Sometimes the horses are released directly from the holding corrals if they are centrally located within the HMA. Refer to photos 1, 9 and 15.

F. Data Collection

Wild Horse and Burro Specialists (WHB Specialists) are responsible for collecting population data. The extent to which data is collected may vary among the field offices to meet specific needs pertaining to each HMA.

1) Hair Samples/Genetics Analysis

Hair samples would not be collected during this proposed gather as genetics analysis was done following the previous gather and the results do not indicate that re-sampling is necessary at this time.

2) Herd Health and Viability Data Collection

WHB Specialists would document information related to age, sex, color, overall health, pregnancy, or nursing status for each animal captured. An estimate of the number of wild horses evading capture would also be recorded.

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

3) Fertility Control Data

Age, body condition and lactation status (if known) would be determined for any freezemarked mares that are captured that were given fertility control during the previous gathers. This information would be used to document animal health, and re-capture/capture efficiency, and any inferences to animal movement if it could be determined.

4) Characteristics

WHB Specialists would record color and size of the animals, and any characteristics as to type would be noted, if determined. Any incidence of negative genetic traits (parrot mouth, club foot etc.) or other abnormalities would be noted as well.

5) Condition Class

A body condition class score would be recorded based on the Henneke System. This would be recorded for the population in general and/or for specific animals if necessary.

H. Euthanasia

The Authorized Office (or designee) will make decisions regarding euthanasia, in accordance with BLM policy as expressed in Washington Office Instructional Memorandum No. 2009-041. A veterinarian may be called to make a diagnosis and final determination. Euthanasia shall be done by the most humane method available. Authority for humane euthanasia of wild horses is provided by the Wild Free-Roaming Horses and Burros Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Euthanasia of Wild horses and Burros and Disposal of Remains. The following are excerpted from IM 2009-41:

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 or burros, 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 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.*

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.

I. Special Stipulations

- 1) Private landowners or the proper administering agency(s) would be contacted and authorization obtained prior to setting up gather corrals on any lands which are not administered by BLM. Wherever possible, gather corrals would be constructed in such a manner as to not block vehicular access on existing roads.
- 2) Gather corrals would be constructed so that no riparian vegetation is contained within them. No vehicles would be operated on riparian vegetation or on saturated soils associated with riparian/wetland areas.
- 3) The helicopter would avoid eagles and other raptors, and would not be flown repeatedly over any identified active raptor nests. No unnecessary flying would occur over big game on their winter ranges or active fawning/calving grounds during the period of use.

- 4) Standard operating procedures in the site establishment and construction of gather corrals will avoid adverse impacts from gather corrals, construction, or operation to wildlife species, including threatened, endangered, or sensitive species.
- 5) Archeological clearance by a BLM archaeologist or District Archeology Technician of gather corrals, holding corrals, and areas of potential effects would occur prior to construction of gather corrals and holding corrals. If cultural resources were encountered, those locations would not be utilized unless they could be modified to avoid impacts. Due to the inherent nature of wild horse gathers, gather corrals and holding corrals would be identified just prior to use in the field. As a result, Cultural Resource staff would coordinate with Wild Horse and Burro personnel to inventory proposed locations as they are identified, and complete required documentation.
- 6) Wildlife stipulations
The following stipulations would be applied as appropriate.
 - a. Sage Grouse
 - i. Avoid active leks (strutting grounds) by 2 miles. March 1- May 15
 - ii. Avoid nesting and brood rearing areas (especially riparian areas where broods concentrate beginning usually in June) by 2 miles. April 1 – August 15
 - iii. Avoid sage grouse wintering areas by 2 miles while occupied. Most known wintering grounds in the Shoshone-Eureka Resource Area occur at high elevations and are not likely to be affected. Dates vary with severity of winter
 - iv. Minimize and mitigate disturbance to the vegetation in all known sage grouse habitat.
 - b. Ferruginous Hawk: Avoid active nests by 2 miles. March 15- July 1.

II. Standard Operating Procedures for Wild Horse and Horse Gathers

Gathers would be conducted by utilizing contractors from the Wild Horse Gathers-Western States Contract, or BLM personnel. The following procedures for gathering and handling wild horses 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 Aviation Management Handbook* (January 2009).

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 a large number of animals may need to be euthanized or capture operations could be facilitated by a veterinarian, these services would be arranged before the capture would proceed. The contractor will be apprised of all conditions and will be given instructions regarding the capture and handling of animals to ensure their health and welfare is protected.

Gather corrals and temporary holding sites will be located to reduce the likelihood of 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 capture methods used in the performance of gather operations include:

1. Helicopter Assisted Trapping. This capture method involves utilizing a helicopter to direct wild horses or burros into a temporary corral.
2. Helicopter Assisted Roping. This capture method involves utilizing a helicopter to herd wild horses or burros to ropers.
3. Bait Trapping. This capture method involves utilizing bait (e.g., water or feed) to lure wild horses or burros into a temporary corral.

The following procedures and stipulations will be followed to ensure the welfare, safety, and humane treatment of wild horses 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 captured. All capture attempts shall incorporate the following:

All gather corral 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 corral locations as determined by the COR/PI. All gather corrals 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 who will consider terrain, physical barriers, access limitations, weather, extreme temperature (high and low), condition of the animals, urgency of the operation (animals facing drought, starvation, fire rehabilitation, etc.) and other factors. In consultation with the contractor the distance the animals travel will account for the different factors listed above and concerns with each HMA.
3. All gather corrals, 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. Gather corrals 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 gather corrals 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, metal without holes larger than 2"x 4".
 - 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 horses and 1 foot to 6 feet for burros. 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 horses and 2 feet to 6 feet for burros.
 - e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking or sliding 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 mares with small foals, sick and injured animals, estrays, or other animals the COR determines need to be housed in a separate pen 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 capture area(s). In areas requiring one or more satellite gather corrals, 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 gather corrals 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 gather corrals 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 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 captured 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 animals must be euthanized and provide for the 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 their 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 gather corrals 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 in any 24 hour period. Animals that are to be released back into the capture area may need to be transported back to the original gather 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, water, mineral licks) to lure animals into a temporary gather corral. 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. Gather corrals 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 half 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 half 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 captured 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 captured 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 captured animals. The COR/PI shall provide for any brand and/or inspection services required for the captured 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 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 (or designee). 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, riparian zones or weed infested areas.

G. Public Participation

Opportunities for public viewing (i.e. media, interested public) of gather operations would be made available to the extent possible; however, the primary considerations will be to protect the health, safety, and welfare of the animals being gathered and the personnel involved. The public must adhere to guidance from the on-site BLM representatives. It is BLM policy that the public will not be allowed to come into direct contact with wild horses 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.

H. Responsibility and Lines of Communication

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. Shawna Richardson, Wild Horse and Burro Specialist would serve as the primary COR. Alternate COR and PI(s) would be selected prior to the start of the gather. Duane Crimmins, Supervisory Natural Resources Lead and Doug Furtado, Field Manager, MLFO 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 BLM Holding Facility offices. All employees involved in the gather 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 Nevada State Office and Battle Mountain District Office Public Affairs Officer. These individuals will be the primary contact and will coordinate with the COR on any inquiries.

The COR will coordinate with the contractor and 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.



Sorrel pinto mare gathered as a two year old from Callaghan HMA in 2002. She and her mother (to the left) were both re-released to the HMA.



The mare was gathered again in January 2009. She was selected to be released again.



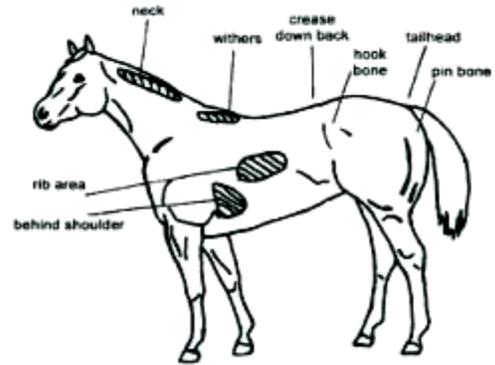
Here she is awaiting her fertility control in the alley way.



Once released the mare (far left) and her friends didn't want to leave and spent some time cleaning up the hay outside of the pens before trotting off.

Henneke Equine Body Condition Scoring System

The Henneke Body Condition Score System was developed by Don Henneke, PhD, in 1983. The Henneke Chart is a standardized scoring system, and is a scientific method of evaluating a horse's body condition regardless of breed, body type, sex or age.



modified from Henneke et al. EVJ 1983;15:371-372

Condition	Neck	Withers	Shoulder	Ribs	Back	Tailhead Area
1 Poor (extremely emaciated)	Bone structure easily noticeable	Bone structure easily noticeable	Bone structure easily noticeable	Ribs projecting prominently	Spinous processes projecting prominently	Tailhead, pinbones, and hook bones projecting prominently
No fatty tissue can be felt						
2 Very Thin (emaciated)	Bone structure faintly discernible	Bone structure faintly discernible	Bone structure faintly discernible	Ribs prominent	Slight fat covering over base of spinous processes. Transverse processes of lumbar vertebrae feel rounded. Spinous processes are prominent	Tailhead prominent Pin bones prominent Hook bones prominent
3 Thin	Neck accentuated	Withers accentuated	Shoulder accentuated	Slight fat cover over ribs. Ribs easily discernible	Fat buildup halfway on spinous processes, but easily discernible. Traverse processes cannot be felt	Tailhead prominent but individual vertebrae cannot be visually identified. Hook bones appear rounded, but are still easily discernible. Pin bones not distinguishable
4 Moderately Thin	Neck not obviously thin	Withers not obviously thin	Shoulder not obviously thin	Faint outline of ribs discernible	Negative crease (peaked appearance) along back	Prominence depends on conformation. Fat can be felt. Hook bones not discernible
5 Moderate	Neck blends smoothly into body	Withers rounded over spinous processes	Shoulder blends smoothly into body	Ribs cannot be visually distinguished, but can be easily felt	Back is level	Fat around tailhead beginning to feel spongy
6 Moderately Fleshy	Fat beginning to be deposited	Fat beginning to be deposited	Fat beginning to be deposited behind shoulder	Fat over ribs feels spongy	May have a slight positive crease (a groove) down back	Fat around tailhead feels soft
7 Fleshy	Fat deposited along neck	Fat deposited along withers	Fat deposited behind shoulder	Individual ribs can be felt, but noticeable fat filling between ribs	May have a positive crease down the back	Fat around tailhead is soft
8 Fat	Noticeable thickening of neck	Area along withers filled with fat	Area behind shoulder filled with fat	Difficult to feel ribs	Positive crease down the back	Fat around tailhead very soft
9 Extremely Fat	Bulging fat	Bulging fat	Bulging fat	Patchy fat appearing over ribs	Obvious crease down the back Flank filled with fat	Bulging fat around tailhead

Photos

The following pages of photos are provided to show examples of the various aspects of wild horse gathers completed by the BLM, MLFO and TFO.



1. Young foal safely released with its mother back to the Fish Creek HMA, February 2006.



2 and 3. Augusta Mountains Gather, November 2007. View of trap corrals and wings.



4. Augusta Mountains Gather, November 2007. Prada horse leads the wild horses into the mouth of the trap. Crew stands by to secure gates.



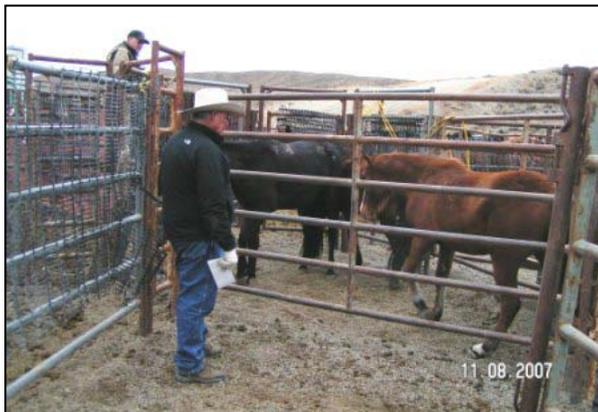
5. *New Pass/Ravenswood Gather, November 2007. Mares settle in at the Holding Corrals and enjoy some hay.*



6. *New Pass/Ravenswood Gather, November 2007. The contractor and crew estimate the age of a horse in the working chute.*



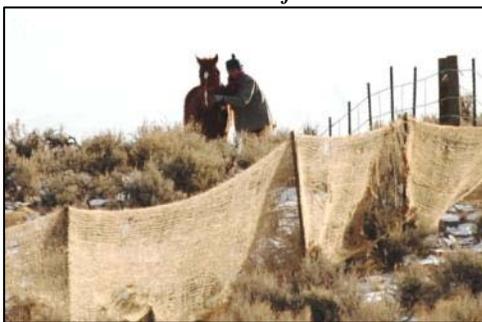
7. *The “Judas” or “prada” horse on the far left is released ahead of the group of horses and then leads them into the jute wings of the trap corrals (photo on the right)*



8. *New Pass/Ravenswood Gather, November 2007. The Brand Inspector checks the horses for possible brands before transport to the BLM WHB facilities.*



9. *New Pass/Ravenswood Gather, November 2007. Release of the horses back to the range at a water location within the HMA.*



10. *A gather crew member holds the prada or Judas horse inside the wings, waiting for the helicopter to push the horses into the mouth of the wings. As soon as the wild horses see the prada horse, the crew member releases him.*





11. The prada horse (sorrel in the front) gallops into the trap corrals and leads the group of wild horses into the corrals. The helicopter is not far behind to make sure that none of the horses turn back. Crew members stand by to rush in and close the gates behind the horses.



12. South Shoshone HMA Gather, January 2008. The wild horses are funneled around the gravel pit and into the gather corrals.



13. South Shoshone HMA Gather, January 2008. Holding Corrals.

14. Prada horse leads in a group of horses during the New Pass/Ravenswood HMA gather November 2007.



15. Studs released back to the Austin side of the Callaghan HMA, December 2008.

16. South Shoshone HMA Gather, January 2008. Release mares in the Holding Corrals on a foggy morning.

Appendix B: Herd Management Area Background Information

Genetic Analysis

Hair samples were collected from all four HMAs during the most recent gathers and analyzed for genetic variability. The reports were received spring and summer 2010. The following table includes discussion provided from Dr. Gus Cothran of Texas A&M University on the hair samples provided following the previous gathers and the analysis of the genetics for these herds. The table includes pertinent excerpts from the reports.

Table 1. Results of Genetics Analysis

HMA/Area	Genetic Variants	Genetic Variation	Genetic Similarity (Domestic)	Genetic Similarity (Feral)
Callaghan (East/Grass Valley Allotment)	93 – Near the highest number yet observed in feral herds.	Well above the feral mean. Results suggest recent mixing with other herds.	Similarity to domestic breeds is above average. Similarity to Old World Iberian, Light Racing, Oriental and Old Spanish Breeds.	Most similar to the same area sampled in 2002 and Callaghan (West/Austin Allotment) and Bald Mountain HMA
	Summary/Recommendations: Genetic variability of this herd is high with measures of both individual and population diversity quite high. There is virtually no change in variation levels from 2002. Results suggest a herd with mixed ancestry that primarily is North American but possibly some Spanish influence. There appears to be mixing of this herd with other nearby herds and these herds show close similarity to each other. Current variability levels are high enough that no action is needed at this point and with the possibility of genetic exchange among several herds there should be no loss of variation for several generations.			
Callaghan (West/Austin Allotment)	87 -- Very high number in a feral herd and is well above the mean for domestic breeds.	Slightly below that seen for the Callaghan East herd but still quite high.	Similarity to domestic breeds is about average for feral herds. Similarity to Light Racing and Riding breeds. Results indicate a population with mixed origins.	Most similar to the same area sampled in 2002 and Callaghan (East/Grass Valley Allotment) and Bald Mountain HMA
	Summary/Recommendations: Genetic variability of this herd is high and has changed little since 2002. The values related to allelic diversity are high and almost the same as seen in 2002 while heterozygosity (genetic variation) is higher than in 2002. Genetic similarity results suggest a herd with highly mixed ancestry. Current variability levels are high enough that no action is needed and due to the apparent continued mixing of this herd with other populations in the area the genetic variation should remain good.			
Bald Mountain	91 -- A very high value.	Well above the feral mean. Results consistent with population mixing.	Similarity to domestic breeds is about average. Highest similarity to Light Racing and Riding breeds. Close relationship to Oriental breeds. Results indicate mixed origin.	Bald Mountain fits most closely with Callaghan HMA.
	Summary/Recommendations: Genetic variability of this herd is high which is true for other herds from this region. Genetic similarity results suggest a herd with mixed ancestry. The variation results plus the fairly close relationship among herds from this region indicates that these herds likely interbreed. Current variability levels are high enough that no action is needed at this point and the evidence of cross breeding with other neighboring herds should maintain a high effective population size.			
Rocky Hills	88 -- Well above the mean for feral herds and for domestic breeds.	High. Results suggest some past and possibly recent mixing with horses from a different population.	Similarity to domestic breeds is above average. Highest similarity to Light Racing and Riding breeds.	The Rocky Hills herd does not pair with any specific HMA but fits in the middle of several herds.
	Summary/Recommendations: The HMA herd does not fit in with any domestic horse cluster			

HMA/Area	Genetic Variants	Genetic Variation	Genetic Similarity (Domestic)	Genetic Similarity (Feral)
	and, in fact, is at the extreme outside of the dendrogram. This is probably an indication of a high degree of genetic mixture. Genetic variability is high and this appears to be due to genetic mixing with another population(s). The values related to allelic diversity are especially high while heterozygosity is also well above average. Genetic similarity results suggest a herd with mixed ancestry but what that ancestry might be is not clear. This herd is quite divergent from all domestic breeds it was compared to in the cluster analysis. Current variability levels are high enough that no action is needed at this point. If there is regular crossing of this herd with one or more other herds, high genetic variation is likely to be maintained.			
New Pass/Ravenswood	89 – High for feral herds and well above the mean for domestic breeds.	Well above the feral mean and the domestic horse mean.	Similarity to domestic breeds was relatively high for a feral herd. Highest similarity to Light Racing and Riding Breeds, and North American Gaited Breeds. Close to the Morgan Horse.	Most similar to Saulsbury followed by Callaghan (West/Austin Allotment).
	Genetic variability of this herd is high. The high variability, particularly the high allelic diversity could be indicative of breeding with trespass horses that were reported in the information received with the samples. However, the data indicates a herd in genetic equilibrium, which would not be expected in a mixed population that included animals with a long history on the HMA and other, unrelated animals. Individual genotypes do not show any individual horse that is clearly different from others. However, if there has been interbreeding for a couple of generations or more, the results seen would be possible. Genetic similarity results suggest a herd with mixed ancestry that primarily is North American. Current variability levels are high enough that no action is needed at this point and the fairly large population size is good so there is little immediate threat to variation levels.			

Recent Gather History

Between December 12 and January 22, the MLFO gathered the Callaghan Complex, comprised of the Callaghan, Bald Mountain and Rocky Hills HMAs. The areas were highly overpopulated and near emergency conditions existed within the Callaghan and Bald Mountain HMAs. Refer to Section 3.3 for gather figures and results. Throughout the gather of Callaghan and Bald Mountain HMAs, thin wild horses were captured with little reserves to carry them through the winter. These two HMAs were 5-7 times over the established AMLs, and with the area receiving less than 50% of the normal precipitation by the end of October, forage and water became very limiting for this large population.

In general, most mares were Body Condition Score (BCS) of thin to moderately thin, with backbone, shoulders and withers accentuated. Many of these mares supported large, older foals that were still suckling, further draining their resources. Ribs and backbone could be felt on most foals regardless of size. Some of the 3-4 year old mares and studs were the worst in body condition and overall health.

Not all animals were in poor condition or health. In many cases, the larger percentage of studs were moderately thin to moderate, and appeared to have more body reserves and body muscling than the mares. Some pockets of healthy horses in moderate or higher body condition were captured from both HMAs. These animals represented less than 20-25% of the population. Overall, the horses captured from the Bald Mountain and Callaghan HMAs were weak, and the gather pilot had to bring the animals to the trap sites slow and easy.

If the gather had not been conducted, wild horses on the Callaghan HMA would likely have been in serious distress by the end of January. A large portion of the population (40-50%) would likely have died, comprised mostly of foals and mares. The Bald Mountain HMA would have fared a little better, with an expected 20-30% death rate comprised mostly of older mares and studs, foals, and 3-4 year old mares and studs.

Callaghan

Animal condition within the west side of the HMA was predominately thin to moderately thin, especially in the northern portion where wild horse concentrations were highest. The back bones and ribs were accentuated on most mares. Overall, the studs were in better condition, but most were BCS 4. The overall appearance of these horses was that they had no reserves and minimal muscling. Older foals were still suckling on the mares, drawing them down in body condition further.

Yellow discharge was observed from the noses of numerous horses (2-5%) gathered from the west side of the HMA, affecting horses of all ages and condition classes (not specific to thinner, younger or older horses). Nasal swabs were taken from some of the affected horses transported to PVC in which the cultures isolated two (heavy level) positive results for *Streptococcus Zooepidemicus* and one (low level) positive result for *Staphylococcus*. The PVC Veterinarian reported that Strep Zo is the non-strangles form of Strep and fairly normal to have this form of upper respiratory infection this time of year. This infection is very treatable with antibiotics if need be. The staph could have been related to some sort of skin disorder and the Veterinarian did not see anything to be alarmed about.

The body condition of the horses captured on the east side of the HMA was similar to that on the west side – thin and moderately thin horses. The horses captured from the Cowboy Rest trap in the northeast portion of the HMA were some of the thinnest horses captured during the whole gather -- many estimated to be BCS 3 – with spines and hip bones accentuated (even some studs). Many of the horses had overall un-thrifty appearance with shaggy haircoats. It was noted that several horses had the appearance of tails that had been chewed on. The horses gathered were of mixed condition and some healthier, well muscled larger horses were captured. The following photos depict the body condition of the wild horses gathered from the Callaghan HMA in 2008/2009.



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Photo 1: Wild horses recently gathered into the holding corrals which also served as the gather corrals. The prada horse is in the far background, which gives a size/condition comparison.

Photo 2, 3 and 5: recently gathered horses in the gather corrals. Note the accentuated hips, ribs and backbones of some horses.

Photo 4. Prada horse in the foreground. This young foal was small and unthrifty because the mother was thin and had poor milk production. The foal was eventually fostered by a local family due to its weak state.

Photo 6: Wild horse in the alleyway leading into the working chute. Note the accentuated hips and backbone.

Because of the condition of the horses, and the sheer number of horses that had to be removed to achieve AML, the choice of animals to remove and to re-release was not based solely on age but also on body condition. 92% of the population needed to be removed in order to meet the gather objectives of bringing the wild horse population back to AML. Selection for horses to release back to the range for the Callaghan HMA focused on health with the horses in BCS 4.5 or higher and good muscling being chosen as a high priority regardless of age. Second priority was overall body size and conformation, followed by historic color traits. All weanling and yearlings were transported to BLM facilities to be prepared for adoption and 95-98% of two and three year olds. The age groups of the rest of the horses removed from the range varied. As shown in the following tables and charts, the age structure of the wild horses gathered reflects a very small number of wild horses over the age of 15 years.

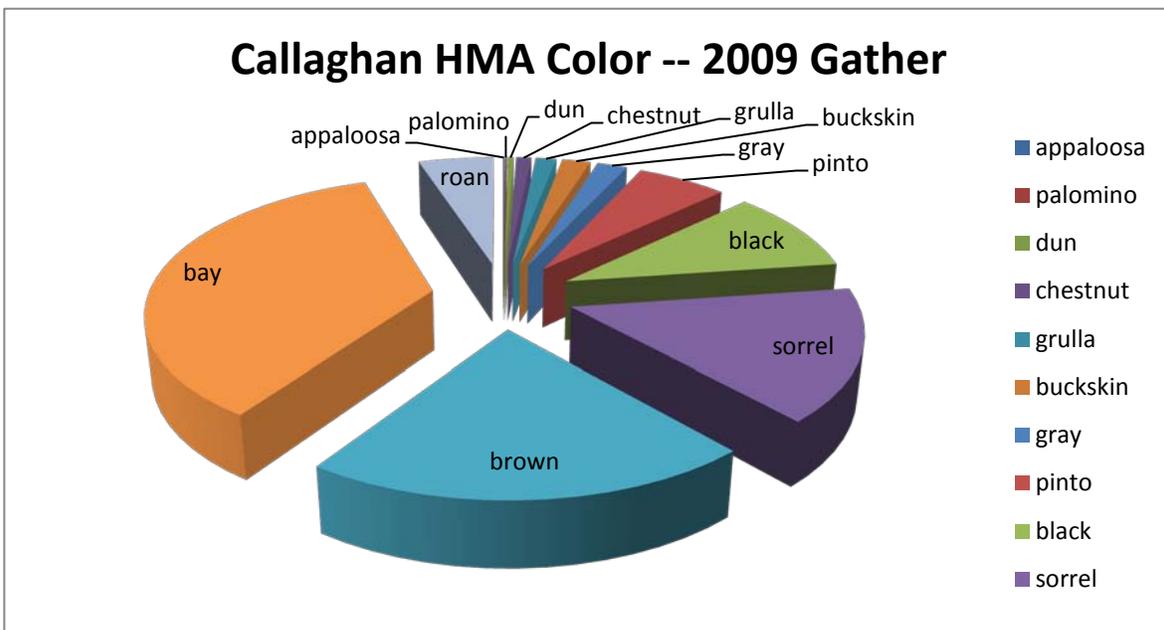
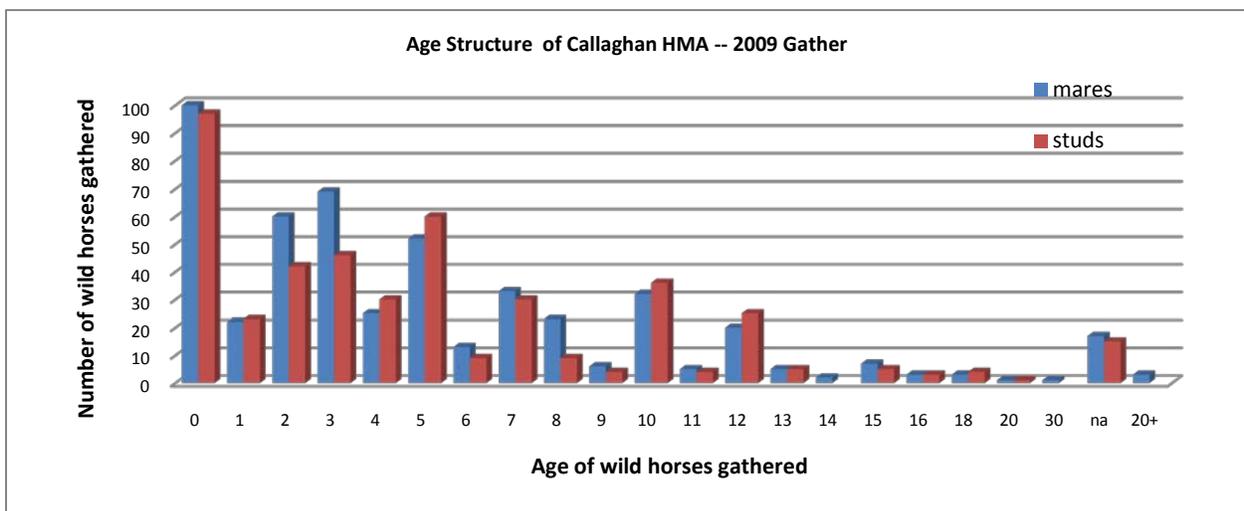
The age structure and sex ratios of the horses gathered is displayed within the tables and charts below.

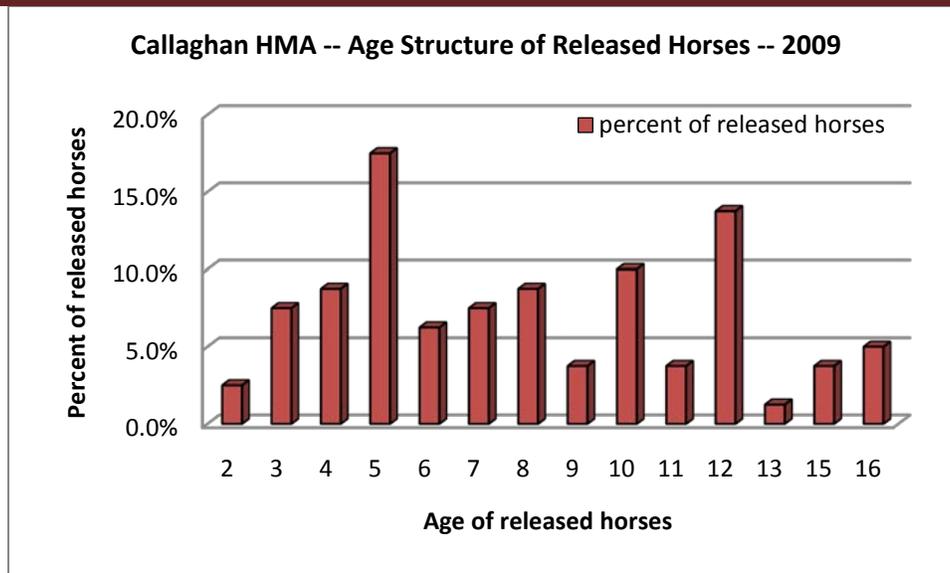
Table 2. Callaghan HMA Age Structure²²

Age	Captured				Released			
	Mare	Stud	Total	%	Mare	Stud	Total	%
0	100	97	197	20.7%	-	-	-	-
1	22	23	45	4.7%	-	-	-	-
2	60	42	102	10.7%	1	1	2	3%
3	69	46	115	12.1%	3	3	6	8%
4	25	30	55	5.8%	4	3	7	9%
5	52	60	112	11.8%	7	7	14	18%
6	13	9	22	2.3%	1	4	5	6%
7	33	30	63	6.6%	1	5	6	8%
8	23	9	33	3.5%	5	2	7	9%
9	6	4	10	1.1%	2	1	3	4%
10	32	36	68	7.2%	5	3	8	10%
11	5	4	9	0.9%	2	1	3	4%

22. Includes animals captured from USFS, and outside of the HMA as well as within the Callaghan HMA.

Age	Captured				Released			
	Mare	Stud	Total	%	Mare	Stud	Total	%
12	20	25	45	4.7%	5	6	11	14%
13	5	5	10	1.1%	-	1	1	1%
14	2		2	0.2%	1	2	3	4%
15	7	5	12	1.3%	3	1	4	5%
16	3	3	6	0.6%	-	-	-	-
18	3	4	7	0.7%	-	-	-	-
20	1	1	2	0.2%	-	-	-	-
30	1		1	0.1%	-	-	-	-
na	17	15	32	3.4%	-	-	-	-
20+	3		3	0.3%	-	-	-	-
	401	448	951	100.0%	40	40	80	100%





Bald Mountain

Animal condition throughout the HMA was variable. Horses gathered on the east side of the HMA (where concentrations were highest and resources most limited) were in the poorest condition similar to the condition of the Callaghan HMA horses. Most horses were estimated to be in BCS 4 or under. Few horses (mostly studs) were considered to be in good condition or well muscled. Most mares showed accentuated backbone and ribs. All age groups were represented within the horses captured, and no specific age group in better or worse condition than any other.

Within the central portion of the HMA, approximately 40-50% of the horses were thin, with estimated BCS 3.5-4.0.; the remaining animals were healthy, well muscled and BCS 4.5-5.0. Most foals were large and healthy.

Contrary to the Callaghan HMA gather, several older (25-30 year old) horses were gathered from Bald Mountain HMA. Forty-four of the 609 horses captured (7.2%) were 15 years of age or older. The following photos are from the Bald Mountain HMA gather in 2009.



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Photo 1: Wild horses being gathered from the Bald Mountain HMA.

Photo 2: Release mares at the holding facilities.

Photo 3: Studs being released back to the HMA.

Photo 4; Mares being released back to the HMA.

Selection for horses to release back to the range focused on horses 4 years of age and older. Due to the sheer number of horses needed to remove to achieve low AML, wild horses of all ages were chosen for removal. A total of 84% of the wild horses needed to be removed to meet the gather objectives.

100% of all weanlings, yearlings and two-year olds were transported to BLM facilities for adoption, and 94% of three year olds. Numbers of other age groupings removed from the range varied. One of the priorities for release horses selected was health. Poor, thin or less thrifty horses were not selected for release.

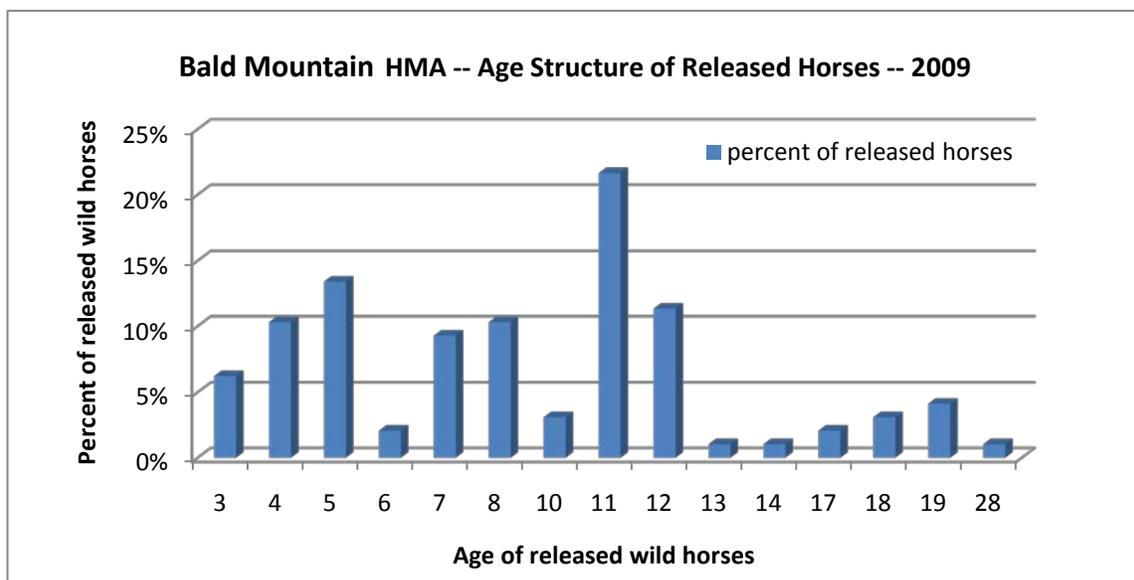
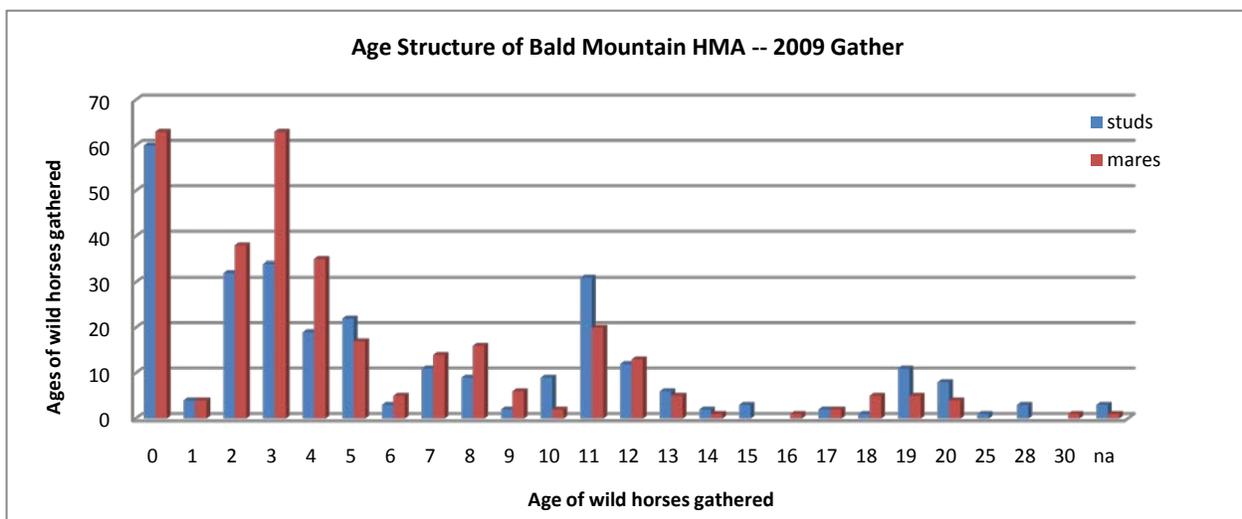
Since this was the first gather since 1981, little knowledge existed about the historical traits of the herd. Many large draft (Belgian) influenced grey horses were gathered from the central portion of the HMA. Other traits included many frosted type horses with splashed white faces, roaning on the chest and flanks, and high white stockings. Several paint horses were captured which result from the close proximity to Callaghan HMA.

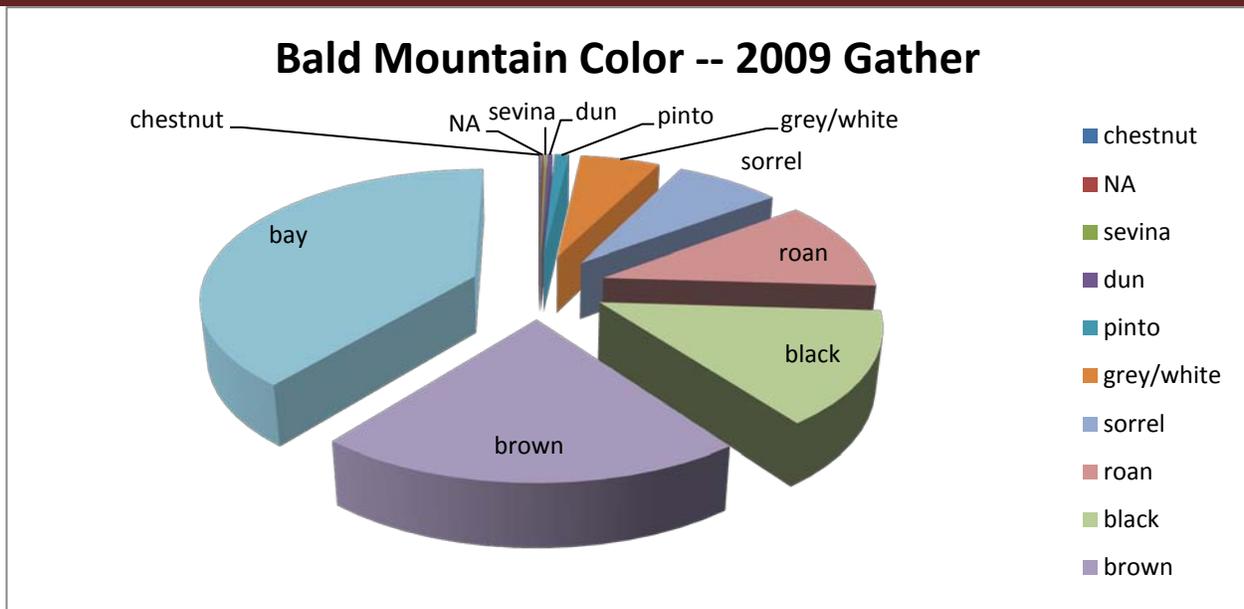
Table 3: Bald Mountain Age Structure

Age	Captured				Released			
	Mare	Stud	Total	%	Mare	Stud	Total	%
0	63	60	123	20.2%	-	-	-	-
1	4	4	8	1.3%	-	-	-	-
2	38	32	70	11.5%	-	-	-	-
3	63	34	97	15.9%	6		6	6%
4	35	19	54	8.9%	6	4	10	10%
5	17	22	39	6.4%	8	5	13	13%
6	5	3	8	1.3%	1	1	2	2%
7	14	11	25	4.1%	6	3	9	9%
8	16	9	25	4.1%	7	3	10	10%
9	6	2	8	1.3%	-	-	-	-
10	2	9	11	1.8%	1	2	3	3%
11	20	31	51	8.4%	6	15	21	22%
12	13	12	25	4.1%	3	8	11	11%
13	5	6	11	1.8%		1	1	1%
14	1	2	3	0.5%		1	1	1%

Age	Captured				Released			
	Mare	Stud	Total	%	Mare	Stud	Total	%
15	-	3	3	0.5%	-	-	-	-
16	1	-	1	0.2%	-	-	-	--
17	2	2	4	0.7%	1		2	2%
18	5	1	6	1.0%	3		3	3%
19	5	11	16	2.6%	1	3	4	4%
20	4	8	12	2.0%	-	-	-	-
25	-	1	1	0.2%				
28	-	3	3	0.5%	-	1	1	1%
30*	1	-	1	0.2%	-	-	-	-
na	1	3	4	0.7%	-	-	-	-
Total	321	288	609	100.0%	49	48	97	100

*The 30 year old was a private mule claimed by its owner.

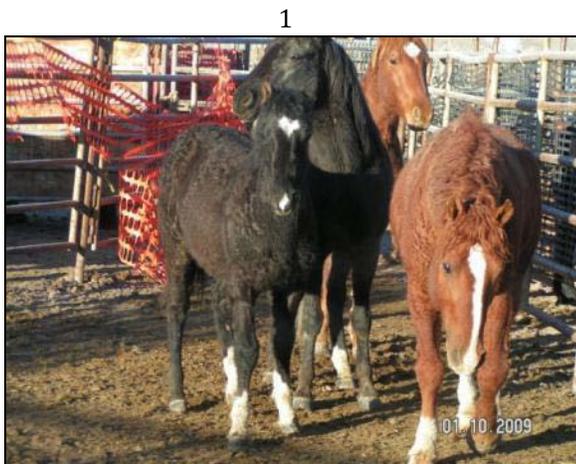




Rocky Hills HMA

The Rocky Hills HMA horses were in very good body condition (as, this herd is limited by water, not feed), with most horses estimated at BCS 4.5-5+. There were a few of the older (25-30 years of age) horses that were thin. In contrast to the gather of the Callaghan HMA, numerous “older” horses that were 15 years and older (18, 20, 25, 30, etc.) were gathered. These age groups are part of a normal age structure, and were missing for the Callaghan HMA. Nineteen of the 145 horses captured (13%) were 15 years of age or older. Many of the horses previously released back to the HMA in 2002 were captured and were in good health.

Initial WinEquus population modeling prior to the gather indicated that horses 2 years of age and younger could be able to be removed, and low AML achieved on the HMA, allowing for the release of horses 3 years of age and older. As the sorting of captured horses began, it became apparent that there were many horses 3 years of age and older (more than anticipated). The removal objectives were modified slightly, and about half of the horses 3 years of age and a few horses 4 years of age were shipped to PVC for adoption. Only a few horses (about 5) 5 years old or older were shipped to PVC, thereby minimizing the number of horses that may go to long term holding pastures. 56% of the horses gathered were removed.



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Photo 1: "Fishy" the curly horse with his son "Blackfish". Fishy was re-released and Blackfish was transported to adoption facilities and later adopted by a curly horse enthusiast/researcher.

Photo 2 and 3: Wild horses from the Rocky Hills HMA in the corrals awaiting sorting.

Photo 4 and 5: Release of Rocky Hills studs back to the HMA.

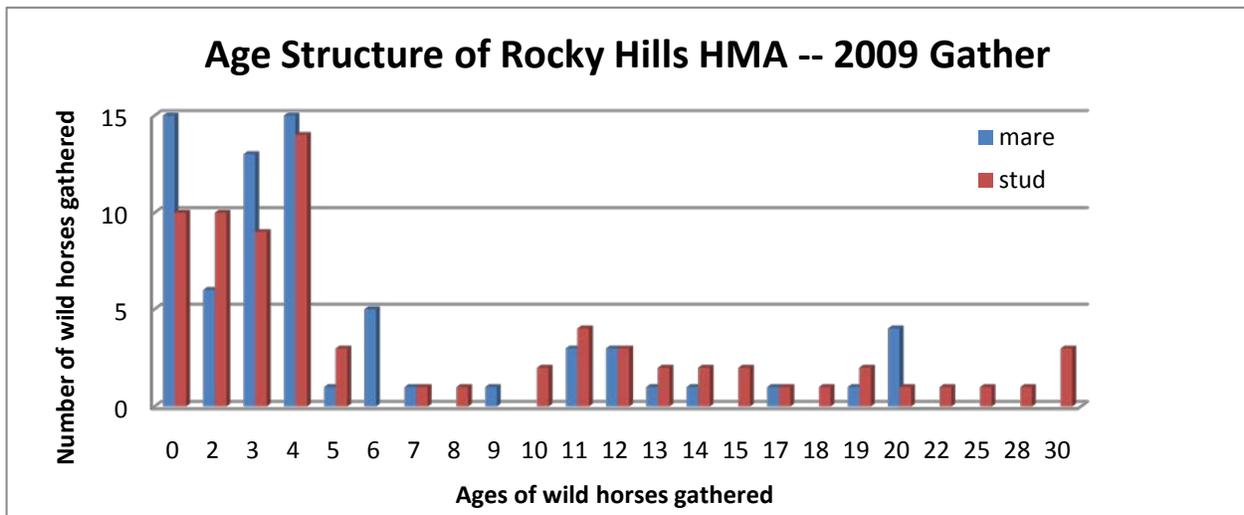
Photo 6: Recently released mares waste no time and begin to graze once back in the HMA.

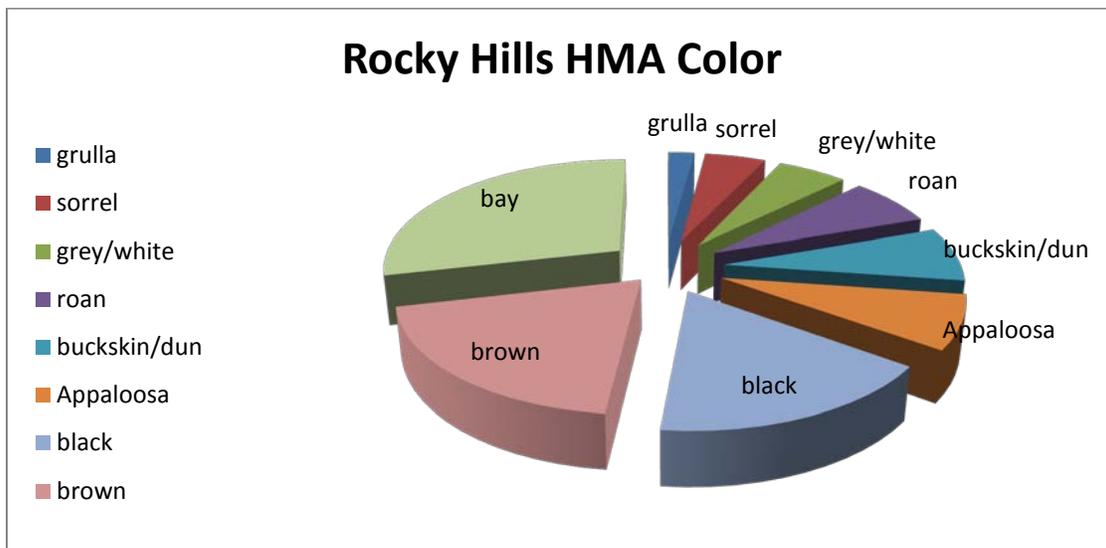
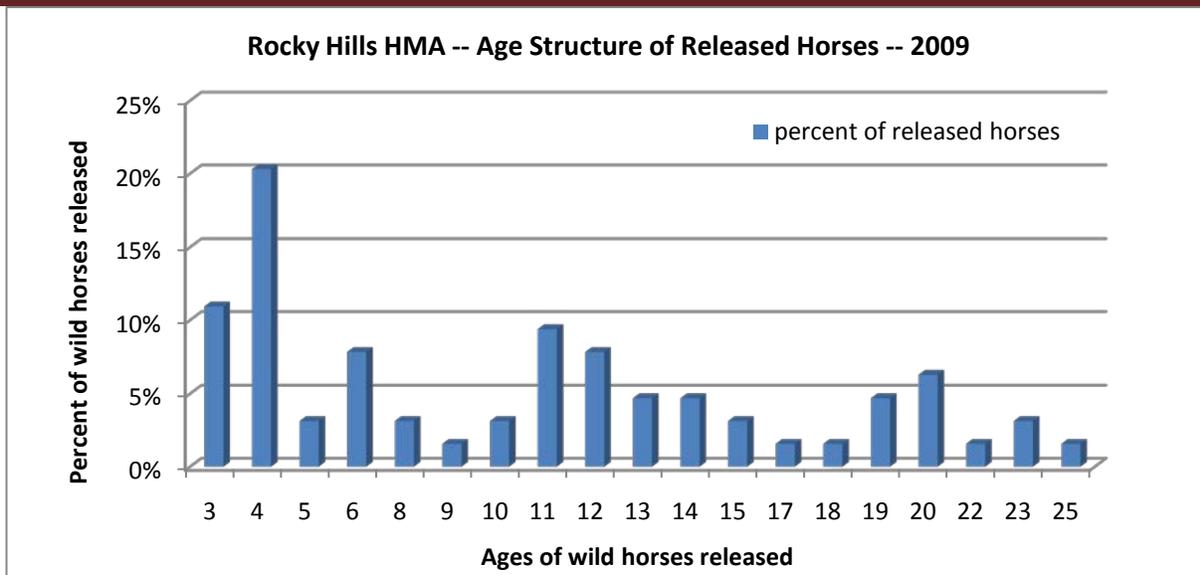
The Rocky Hills HMA horses were very healthy, with all age groups represented, and a larger than expected proportion of older horses. The horses were concentrated as expected near the primary water sources, requiring only two days to gather 145 horses into one trap. Food is not limiting in this HMA. Water sources are limiting, which has caused distribution concentrations, and resulting impacts to the forage resources in these areas. If this HMA had not been gathered, these forage resources would have taken a substantial hit the following summer. Water sources may have not been adequate and water hauling would have been required. Because the population was gathered when the AML was not seriously exceeded (~116%), fewer older (unadoptable) horses had to be removed from the range that may have needed to be cared for in long-term holding pastures. Most horses removed and shipped to PVC were 4 years of age or younger.

Table 4. Rocky Hills Age Structure

Age	Captured				Released			
	Mare	Stud	Total	Percent	Mare	Stud	Total	Percent
1	15	10	25	17.2%	-	-	-	-
2	6	10	16	11.0%	-	-	-	-
3	13	9	22	15.2%	4	3	7	11%
4	15	14	29	20.0%	9	4	13	20%
5	1	3	4	2.8%	-	2	2	3%

Age	Captured				Released			
	Mare	Stud	Total	Percent	Mare	Stud	Total	Percent
6	5		5	3.4%	5		5	8%
7	1	1	2	1.4%	-	-	-	-
8	-	1	1	0.7%		2	2	3%
9	1		1	0.7%	1		1	2%
10	-	2	2	1.4%		2	2	3%
11	3	4	7	4.8%	2	4	6	9%
12	3	3	6	4.1%	2	3	5	8%
13	1	2	3	2.1%	2	1	3	5%
14	1	2	3	2.1%	1	2	3	5%
15	-	2	2	1.4%		2	2	3%
16	-	-	-	-	-	-	-	-
17	1	1	2	1.4%	1	-	1	2%
18	-	1	1	0.7%		1	1	2%
19	1	2	3	2.1%	1	2	3	2%
20	3	1	4	2.8%	3	1	4	5%
22	-	1	1	0.7%		1	1	6%
23	1		1	0.7%	1	-	1	2%
25	-	1	1	0.7%	-	1	1	2%
28	-	1	1	0.7%	-	1	1	2%
30	-	3	3	2.1%	-	-	-	-
Total	71	74	145	100.0%	32	32	64	100%





The data from the Callaghan Complex gather was compared to the population modeling completed prior to the gather. The table below shows various age groupings that were reviewed and that there were differences and similarities between the estimated age structure output by the model and the actual age structure obtained from the gather results. The closest comparison is for Bald Mountain, which may be due to the fact that the area had never been gathered recently (since 1981) and not had the age structure modified through gathers. The Callaghan HMA reflects the largest disparity which could be due to increased mortality of certain age groupings due to the lack of resources and the poor body condition of the wild horses in the HMA at the time.

Table 5. Callaghan Complex Gather Results – Comparison to Estimated Age Structure

Age groupings	Callaghan		Bald Mountain		Rocky Hills	
	Actual gather results	Pre-Gather Estimate	Actual gather results	Pre-Gather Estimate	Actual gather results	Pre-Gather Estimate
0-4	54.0%	73%	57.8	54%	63.4%	72%
5-9	25.2%	15%	17.2	23%	9.0%	14%
10-14	14.1%	8%	16.6	12%	14.5%	6%
15-19	2.6%	3%	4.9	7%	5.5%	4%
20+	0.6%	1%	2.8	3%	7.6%	5%
na	3.4%	-	0.7	-	-	-

The sex ratios for the wild horses gathered were all near the expected 50:50 for mares and studs with slight variation. Callaghan and Bald Mountain HMAs sex ratios were identical.

Table 6. Sex Ratio Callaghan Complex

Sex	Callaghan	Rocky Hills	Bald Mountain	Total
Female	53%	49%	53%	52%
Male	47%	51%	47%	48%

New Pass/Ravenswood HMA

The most recent gather of the New Pass/Ravenswood (NPR) HMA took place between November 3 and 14, 2007.

Throughout the entire gather, wild horses gathered well, and did not appear to be more than minimally stressed. Volunteer Veterinarians on site Nov. 3-8 were pleased with the condition of the animals in light of the drought and wild fires. The horses gathered from the northern portion of the HMA during the first 3 days of the gather were the thinnest captured. Most mares were on the lower end of condition class 4 (moderately thin), with a few near class 3 (thin). Backbone and ribs are clearly visible on most mares. Studs were in better condition, with most averaging class 5 (moderate), although many were class 4 with ribs clearly visible. Foals were all in fair/good condition.

Horses captured from the central and southern portion of the HMA were clearly in better body condition. Most mares were condition class 4.5-5, with few showing ribs or backbone. Most thin horses captured from these areas were very old horses. Additionally, several groups were captured from south and west of the trap, and in the New Pass Range, and were very large of heavy body weight. Foal size and condition followed that of the adults. The foals captured from the south and west portions of the HMA were the largest.

Overall, most foals were weanable, and of good size. A few small, younger foals were captured, and only one foal that was about 1 week of age. In most cases, the foals and mares were mixed so that foals could join up with their mothers.

Objectives of the gather were to remove all of the approximately 300 wild horses from the northern portion of the HMA which burned in 2007. Approximately 129-254 horses were identified for removal in the southern portion of the HMA to avoid the population from increasing to the point where the horses moved back onto the burned area. Using the population model, it was estimated that most horses

5 years old and older could be released back to the range (in the southern portion of the HMA), thereby shipping primarily only younger animals 0-3 years of age which would be primarily adoptable. 100% of all weanlings and yearlings were shipped. 97 and 91% of all 3 and 4 year olds respectively were also transported for adoption. The remaining age classes varied depending upon overall health and characteristics of the animals. The core breeding ages of 5 and 10 years of age were released back to the range as well as a selection of older animals. All total, 75% of the wild horses were removed from the New Pass/Ravenswood HMA in order to meet gather objectives. The chart above displays the age structure of the animals released.

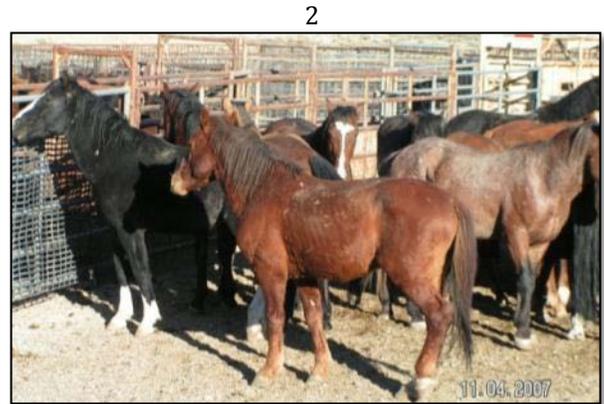


Photo 1: New Pass/Ravenswood studs being held for release back to the HMA.

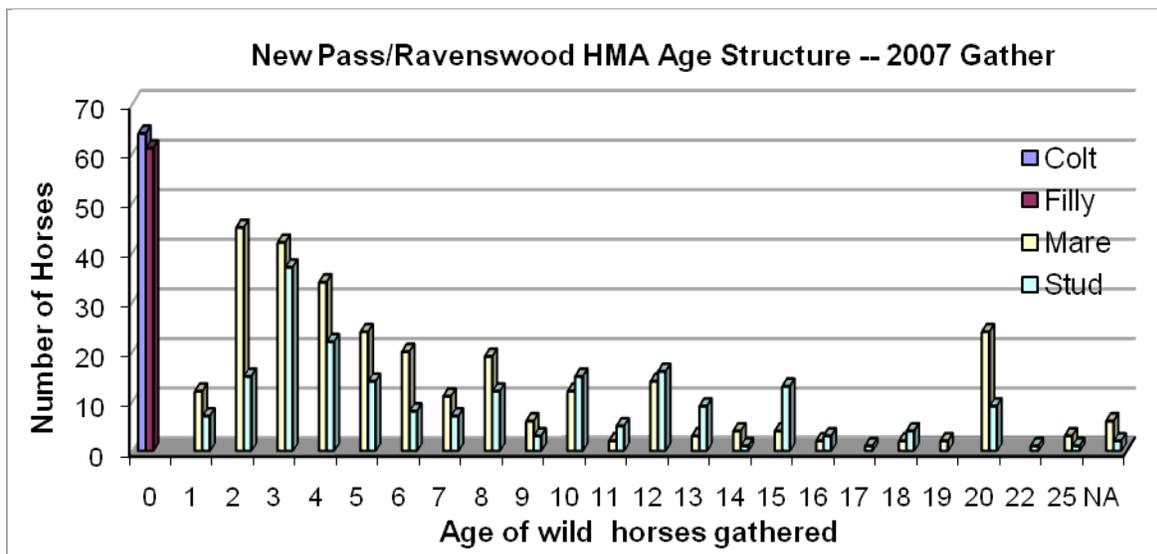
Photo 2: Studs identified for shipping to adoption facilities or LTHPs/

Photo 3-4: Mares awaiting release back to the HMA.

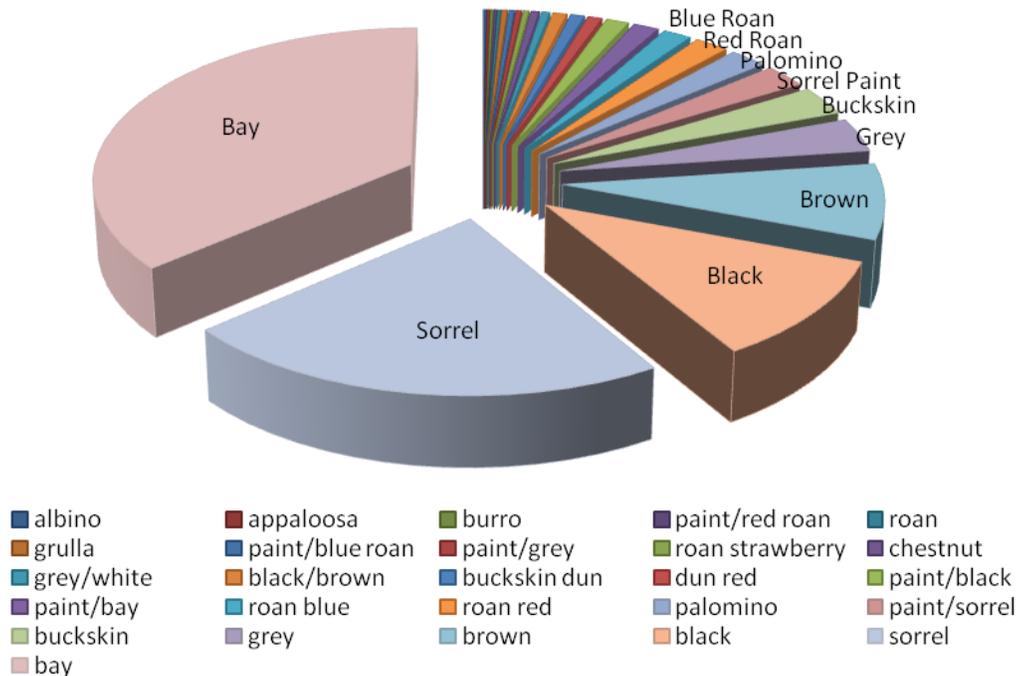
Photo 5: Mares identified for shipping to adoption or LTHPs. Note body condition.

Table 7. New Pass/Ravenswood HMA Age Structure -- 2007

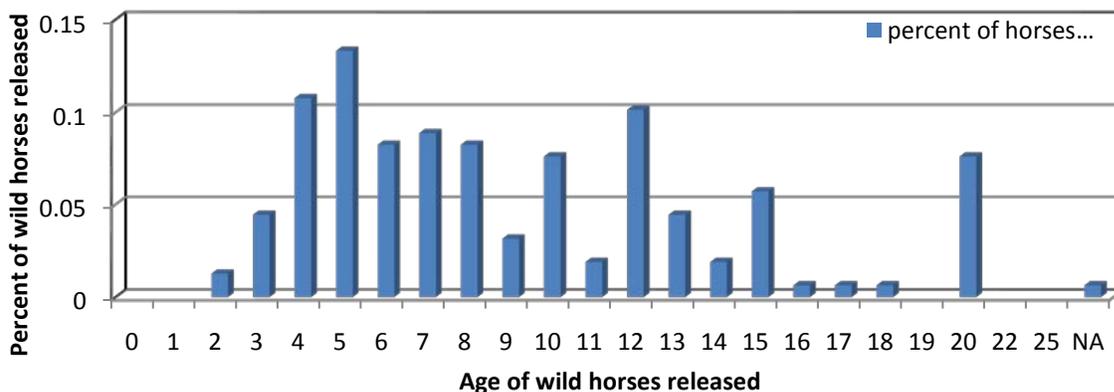
Age	Age structure			Capture			Release		
	Mare	Stud	Total	Mare	Stud	Total	Mare	Stud	Total
0	18%	23%	20%	64	61	125	--	--	--
1	3%	3%	3%	12	7	19	--	--	--
2	13%	6%	10%	45	15	60	2	--	2
3	12%	14%	13%	42	37	79	3	4	7
4	10%	8%	9%	34	22	56	9	8	17
5	7%	5%	6%	24	14	38	14	7	21
6	6%	3%	5%	20	8	28	8	5	13
7	3%	3%	3%	11	7	18	10	4	14
8	5%	5%	5%	19	12	31	9	4	13
9	2%	1%	1%	6	3	9	3	2	5
10	3%	6%	4%	12	15	27	5	7	12
11	1%	2%	1%	2	5	7		3	3
12	4%	6%	5%	14	16	30	8	8	16
13	1%	3%	2%	3	9	12	2	5	7
14	1%	0%	1%	4	1	5	2	1	3
15	1%	5%	3%	4	13	17	3	6	9
16	1%	1%	1%	2	3	5		1	1
17	0%	0%	0%		1	1		1	1
18	1%	2%	1%	2	4	6	1		1
19	1%	0%	0%	2		2			
20	7%	3%	5%	24	9	34	9	3	12
22	0%	0%	0%		1	1			
25	1%	0%	1%	3	1	4			
NA	2%	1%	1%	6	2	8	1		1
Total	100%	100%	100%	355	266	622	89	69	158



New Pass/Ravenswood HMA Color -- 2007 Gather



New Pass/Ravenswood Age Structure -- Released Horses



The age structure of the animals gathered represented normal patterns, and was very similar to the estimated age structure compiled prior to the gather (estimated from the population model). The following table displays the comparison of the estimated pre-gather age structure derived from the WinEquus population model, and the age structure of the wild horses gathered in 2007.

Table 8. Age Structure Comparison --- New Pass/Ravenswood 2007

Age	Actual Gathered (%)			Estimated Pre-Gather (%)			Difference from estimate (%)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0	10%	10%	20%	7%	8%	15%	3%	2%	+5%
1-2	4%	9%	13%	7%	11%	18%	-3%	-2%	-5%
3-5	12%	16%	28%	12%	16%	28%	0%	0%	0%

Age	Actual Gathered (%)			Estimated Pre-Gather (%)			Difference from estimate (%)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
6-9	5%	9%	14%	9%	10%	19%	-4%	-1%	-5%
10-14	8%	6%	13%	6%	5%	11%	2%	1%	+2%
15-19	3%	2%	5%	4%	3%	7%	-1%	-1%	-2%
20+	2%	4%	6%	2%	1%	3%	0%	3%	+3%
Totals	43%	57%	100%	47%	53%	100%	-3.4%	3.4%	0%



Callaghan HMA, wild horse inventory flight September 2009.



Rocky Hills HMA wild horse inventory flight September 2009. Large number of wild horses counted at Cadet Trough Spring (left) and photo of a small spring in the HMA (right).



Bald Mountain HMA. September 2009 wild horse inventory.



Bald Mountain HMA. September 2009 wild horse inventory. Photo on the right is Dry Canyon Spring, heavily utilized by both wild horses and cattle.



New Pass/Ravenswood HMA wild horses inventory September 2008. Lower right – wild horses run through the trees in an area affected by wildfire.



Large group of wild horses finding shade and wallowing (far left) in the Dry Canyon Spring



Foals from the 2008/2009 Callaghan Complex gather offered for adoption in Winnemucca, Nevada in May 2009. Look how they've grown!

Appendix C: Standard Operating Procedures for Population-level Fertility Control Treatments

22-month time-release pelleted porcine zona pellucida (PZP) vaccine:

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

1. PZP vaccine would be administered only by trained BLM personnel or collaborating research partners.
2. Mares that have never been treated would receive 0.5 cc of PZP vaccine emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA). Mares identified for re-treatment receive 0.5 cc of the PZP vaccine emulsified with 0.5 cc of Freund's Incomplete Adjuvant (FIA).
3. 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 delivered using a modified syringe and jabstick to inject the pellets into the gluteal muscles of the mares being returned to the range. The pellets are designed to release PZP over time similar to a time-release cold capsule.
4. Delivery of the vaccine would be by intramuscular injection into the gluteal muscles while the mare is restrained in a working chute. The primer would consist of 0.5 cc of liquid PZP emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA). The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid or pellets would be injected into the left hind quarters of the mare, above the imaginary line that connects the point of the hip (hook bone) and the point of the buttocks (pin bone).
5. In the future, the vaccine may be administered remotely using an approved long range darting protocol and delivery system if or when that technology is developed.
6. All treated mares will be freeze-marked on the hip or neck HMA managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.

Monitoring and Tracking of Treatments:

1. At a minimum, estimation of population growth rates using helicopter or fixed-wing surveys will be conducted before any subsequent gather. During these surveys it is not necessary to identify which foals were born to which mares; only an estimate of population growth is needed (i.e. # of foals to # of adults).
2. Population growth rates of herds selected for intensive monitoring will be estimated every year post-treatment using helicopter or fixed-wing surveys. During these surveys it is not necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of adults). If, during routine HMA field monitoring (on-the-ground), data describing mare to foal ratios can be collected, these data should also be shared with the NPO for possible analysis by the USGS.
3. A PZP Application Data sheet will be used by field applicators to record all pertinent data relating to identification of the mare (including photographs if mares are not freeze-marked) and date of treatment. Each applicator will submit a PZP Application Report and accompanying narrative and data sheets will be forwarded to the NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.
4. 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(s) applied by HMA and date.



Preparation of the jab stick used to inject the time release PZP.



Freeze-marking the identifying letters on the left hip of the mare in the working chute.



Injecting the hip of the mare with the jabstick

Photos taken during the New Pass/Ravenswood HMA wild horse gather November 2007 and Callaghan Complex Gather December/January 2009

Appendix D: Summary of Population Modeling

The WinEquus Feral Horse Population Model, developed by Dr. Steven Jenkins at the University of Nevada at Reno was designed to assist Wild Horse and Burro Specialists evaluate various management plans and possible outcomes for management of wild horses that might be considered for a particular area. Windows version 3.2 of the model is accessible at www.wolfweb.unr.edu/homepage/jenkins. The model was used to display potential outcomes of the Proposed Action and Alternative 1 and a No Action/No Gather scenario. The use of the population model is discussed in detail in the Callaghan Complex and New Pass/Ravenswood EAs identified in Section 1.1. Please refer to those documents for more detailed information.

The purpose of the modeling was to compare the potential results of the Proposed Action and Alternative 1 to include population size over time, growth rates, and the number of animals that could be gathered, removed and treated for fertility control over the next 10 years.

The model was run for 10 years to show potential effects over time. However, prior to future gathers, the data from this proposed gather along with future inventory data would be analyzed to determine the appropriate course of action and develop a range of alternatives. Appropriate NEPA would also be completed with involvement from the interested public prior to a future gather being conducted. This information would also be compiled into a Herd Management Area Plan in the future.

Proposed Action Modeling Scenario – Capture, Treat and Release Strategy

For the Proposed Action, the model was set to gather at two year intervals beginning in 2010, implementing fertility control on all mares. This gather and treatment frequency was chosen to model the most intensive gather and fertility control treatment that could be possible. It is likely that future gathers would occur about every 3 years (due to budget or other unforeseen factors). The model was run from 2010 through 2020 and gives data for 11 years and 100 trials. The simulations were set to gather for fertility control regardless of population size and to continue to gather after removals to treat all females. 100% of both foals and yearlings were identified for potential removal for all gathers. These settings cannot be changed for different years within the simulation otherwise it would have been possible to select for only foals removed in some gathers and foals and yearlings in others. It is likely that during the proposed 2010 gather, that only foals and some small yearlings would be removed. In later gathers, both foals and yearlings could be removed if necessary or desirable. Despite the fact that some horses could be removed from outside HMA boundaries under the Proposed Action, this number is not known for the current proposed gather or for future potential gathers and therefore was not included in the modeling.

The percent of the population that could be gathered was derived from the estimated gather efficiency for the last gather and ranged from 80% for Rocky Hills to 90% for Bald Mountain. These are estimates and will certainly fluctuate greatly in future gathers as influenced by the climate, snow cover, and animal awareness of the helicopter through repeated gathers.

Outputs include tables and graphs. The results were analyzed in Excel Pivot tables to derive age structures and removal numbers for the Most Typical Trial and averages of all trials. The Most Typical Trial was often referenced and is similar to the results for the average of all 100 trials.

Alternative 1 Modeling Scenario – Current Management

For Alternative 1, a scenario was chosen that would emulate current management strategies. Typically, HMAs in the Battle Mountain District are gathered every 5-7 years on average regardless of population size due to National and State gather priorities. Five years was chosen for the Alternative 1 modeling, depicting gathers in 2012 and 2017 for the New Pass/Ravenswood HMA and 2013 and 2018 for the Callaghan Complex. No population controls were simulated and the data represents a “gather only” strategy, with all age groups having an equal chance of being removed or released during the gather. This simulation was developed to display results typical of the past and current management where gather frequency is 5-7 years, and to display results where no population controls are implemented.

A No Gather/No Management scenario was also simulated to show the potential population growth with no population controls and no gathers completed between 2010 and 2020. The average population size for all 100 trials was also displayed in the summary tables for comparison, even though this alternative was not analyzed in detail in this EA. Graphs for this alternative are also located in the back of this Appendix.

For all modeling simulations, the population size was not set as exact, and the model randomizes the starting population based on environmental conditions and the fact that populations are generally larger than estimated as shown through gather and inventory data.

The model has not been updated for use on the “Capture, Treat and Release” gathers where the target population is still benefiting from the previous application of fertility control. Therefore the model assumes that mares would foal normally during the first year after application of fertility control, which is not the case with this proposal. Callaghan, Rocky Hills and Bald Mountain were treated in 2008/2009, and are currently benefiting from the first year of effectiveness. 2011 should be the second year of effectiveness. 2012 would then be the first year of effectiveness for the repeat treatment of fertility control. New Pass/Ravenswood HMA is experiencing the second year of fertility control in 2010, and would experience slight benefits from the third year of fertility control in 2011. The fertility control re-treatment would become effective in 2010. The model is currently not capable of producing outputs considering these scenarios.

The model was first utilized to derive an estimated 2010 population based on the pre gather population data, observed age structure and release data from the most recent gather and the most recent inventory data reflecting population size. From these data, the number of wild horses un-captured was also derived and a gather percentage estimated.

The New Pass/Ravenswood HMA was gathered in November 2001. At that time, 96 mares were treated with the 2-year PZP. The estimated post gather population was 208-268. Flights conducted in September 2008 and September 2009 indicate that there were 178 animals un-captured, there were likely 336 wild horses remaining post gather and that the gather efficiency was 78%. There could have also been movement of wild horses east from the Clan Alpine HMA, but this has not been confirmed. This information was run through the model to simulate the estimated 2010 population after two years of effective fertility control (2009 and 2010).

The Callaghan, Rocky Hills and Bald Mountain HMAs were gathered in December 2008 through January 2009. Released mares were treated with the 2 year PZP. 40 mares were treated in Callaghan, 49 in Bald Mountain and 32 in Rocky Hills HMA. Inventory flights were conducted in September 2009 and the same procedures used as for New Pass/Ravenswood to estimate the un-captured animals and gather efficiency. The post gather estimate for the Callaghan Complex was 349 total wild horses. The 2009 inventory flight results indicate that there were approximately 211 horses un-captured during the gather verses the estimate of 106 at the time of the gather, and the actual post gather population was likely around 454 wild horses. The estimated gather efficiency averaged 89%.

The information was run through the model to simulate the estimated 2010 Callaghan Complex populations after one year of effective fertility control (2010). The typical trial was selected for use. The population sizes produced by the model were not identical to the estimated population based on inventories, but were not adjusted. The data produced by the model was used for the analysis.

The following table displays the estimated 2010 age structures for the 4 HMAs based on the modeling²³.

Table 1. Estimated 2010 Age Structures

Age	Callaghan			Bald Mountain			Rocky Hills			New Pass/Ravenswood		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
Foal	24	26	50	12	13	25	13	14	27	39	36	75
1	18	16	34	12	9	21	22	15	37	39	27	66
2	8	6	14	7	3	10	5	4	9	55	41	96
3	16	7	23	2	3	5	7	5	12	17	20	37
4	14	8	22	5	6	11	10	3	13	6	8	14
5	13	9	22	14	6	20	14	11	25	7	4	11
6	13	14	27	11	6	17	18	13	31	12	8	20
7	5	11	16	10	7	17	3	8	11	20	14	34
8	8	9	17	3	3	6	6	1	7	21	9	30
9	11	7	18	9	6	15	2	2	4	18	7	25
10-14	23	20	43	19	20	39	8	13	21	39	19	58
15-19	11	9	20	7	17	24	6	10	16	13	14	27
20+	2	1	3	2	17	19	4	10	14	4	13	17
Total	166	143	309	113	116	229	118	109	227	290	220	510

Summary Tables

The following tables summarize the modeling outputs. Table 2 displays the total number of wild horses that could be removed under the Proposed Action or Alternative 1 scenarios, whereas Table 3 displays only the animals removed that would be 0-4 years of age which would typically be adoptable. Table 4

23. The figures produced by the model are not identical to BLMs estimates due to randomization and other factors built into the population model program.

displays the results from the model for wild horses 5 years of age and older that would be removed which would typically not be adoptable animals and would need to be maintained in LTHPs.

Table 2: Total horses removed (All Ages) in 11 years – Typical Trial

HMA	Proposed Action	Alternative 1
Callaghan	189	468
Bald Mountain	93	336
Rocky Hills	82	238
New Pass/Ravenswood	220	808
Total	584	1,850

Table 3: Total horses removed (Ages 0-4) in 11 years – Typical Trial

HMA	Proposed Action	Alternative 1
Callaghan	189	350
Bald Mountain	93	241
Rocky Hills	82	155
New Pass/Ravenswood	220	615
Total	584	1,361

Even though these animals would typically be adoptable, Alternative 1 would still result in 233% more horses removed in the 0-4 year group than under the Proposed Action according to the results from the model displayed in these tables.

Table 4: Total horses removed (Ages 5-20+) in 11 years – Typical Trial

HMA	Proposed Action	Alternative 1
Callaghan	0	118
Bald Mountain	0	95
Rocky Hills	0	83
New Pass/Ravenswood	0	193
Total	0	489

The removal animals in the above table would likely not be adopted due to age and overall adoption demands and would be put through the sale program or transported to LTPs for the rest of their lives at considerable cost to the BLM.

The following tables show the ranges for all trials and all HMAs through the modeling for the Proposed Action and Alternative 1.

Table 5: WinEquus Population Model Results Callaghan HMA

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
Proposed Action	89-275	191-418	310-588	-6.8-5.8	882-1865	71-396	315-595
Alternative 1	106-175	240-329	347-708	9.2-21.6	267-687	236-650	0

Table 6: WinEquis Population Model Results Bald Mountain HMA

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
Proposed Action	91-201	150-232	229-334	-6.0-5.2	735-1082	40-175	229-437
Alternative 1	104-162	206-251	274-493	6.6-19.1	115-511	137-474	0

Table 7: WinEquis Population Model Results Rocky Hills HMA

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
Proposed Action	64-137	97-137	150-236	-5.9-6.3	425-773	30-153	172-294
Alternative 1	76-115	137-183	199-404	7.2-23.7	115-369	108-352	0

Table 8: WinEquis Population Model Results New Pass/Ravenswood HMA

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
Proposed Action	221-437	340-541	506-747	-3.7-8.2	1,557-2,368	113-506	589-948
Alternative 1	347-532	532-876	658-1,813	8.6-22.4	282-1,387	253-1,340	0

Conclusions

The model consistently shows that through a more intensive capture, treat and release strategy that approximately 2-3 times the number of wild horses would be gathered under the Proposed Action for the median trial. However, the number of animals removed from the range through the Proposed Action as opposed to Alternative 1 is substantially reduced. Additionally, the removed animals would be young and adoptable and would not need to be maintained in LTHPs. Though the cost of a more structured, schedule of gathers and treatment would be more costly compared to the current and past management, these costs would be more than offset through the reduced number of animals in the adoption system, LTHPs and the overall improvement and restoration of the range through reduced populations that are maintained at the AML.

Callaghan HMA

Table 9: Callaghan HMA Modeling Results Comparison of Alternatives

Year	Proposed Action		Alternative 1		No Gather	
	% of trials with a gather	Typical Trial Population	% of trials with a gather	Typical Trial Population	% of trials with a gather	Population Size, Average of 100 Trials
Year 1 - 2010	100	334	0	327	0	345
Year 2 - 2011	0	309	0	410	0	401
Year 3 - 2012	100	304	0	470	0	464
Year 4 -- 2013	0	257	100	545	0	535
Year 5 - 2014	100	253	0	152	0	600
Year 6 - 2015	0	237	0	162	0	669
Year 7 - 2016	100	240	0	222	0	737
Year 8 - 2017	0	215	0	236	0	801
Year 9 - 2018	100	206	77	252	0	865
Year 10 - 2019	0	190	0	176	0	942
Year 11 -- 2020	100	189	0	193	0	1,007

The model displayed a larger starting population than currently estimated based on the 2009 inventory. Because only foals and yearlings are removed, the Proposed Action scenario shows that the population is reduced slowly over time, whereas the Alternative 1 scenario shows the population increasing until the next gather in 2013 to 229% of the upper limit of AML.

Table 10: Population Sizes in 11 years - Minimum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	89	106
Median Trial	182	146
Highest Trial	275	175

Table 11: Population Sizes in 11 years - Average

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	191	240
Median Trial	244	282
Highest Trial	418	329

Table 12: Population Sizes in 11 years - Maximum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	310	347
Median Trial	336	520
Highest Trial	588	708

Table 13: Average Growth Rate in 10 Years

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	-6.8	9.2
Median Trial	0.0	15.4
Highest Trial	5.8	21.6

Table 14: Totals in 11 Years -- Gathered

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	882	267
Median Trial	1090	488
Highest Trial	1,865	687

Table 15: Totals in 11 Years -- Removed

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	71	236
Median Trial	170	450
Highest Trial	396	650

Though almost three times the number of gathered animals would result from the Proposed Action strategy, the number of animals removed is approximately 60% of that of Alternative 1. All animals removed under the Proposed Action would be foals or foals and yearlings. Under the modeled scenario, the animals removed under Alternative 1 would be comprised of all age groups.

Table 16: Proposed Action: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	47	0	13	0	6	0	8	0	0	0	0	74
1	33	0	46	0	17	0	19	0	0	0	0	115
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0	0	0	0	0	0
15-19	0	0	0	0	0	0	0	0	0	0	0	0
20+	0	0	0	0	0	0	0	0	0	0	0	0
Total	80	0	59	0	23	0	27	0	0	0	0	189

The table above for the most typical trial shows that with a two-year fertility control gather scenario, that by 2017, no more animals would need to be removed to maintain the population within the AML due to the effects of fertility control.

Table 17: Alternative 1: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	0	0	0	73	0	0	0	0	28	0	0	101
1	0	0	0	64	0	0	0	0	17	0	0	81
2	0	0	0	60	0	0	0	0	32	0	0	92
3	0	0	0	33	0	0	0	0	12	0	0	45
4	0	0	0	24	0	0	0	0	7	0	0	31
5	0	0	0	14	0	0	0	0	0	0	0	14
6	0	0	0	19	0	0	0	0	8	0	0	27
7	0	0	0	15	0	0	0	0	3	0	0	18
8	0	0	0	13	0	0	0	0	4	0	0	17
9	0	0	0	23	0	0	0	0	2	0	0	25
10-14	0	0	0	8	0	0	0	0	0	0	0	8
15-19	0	0	0	3	0	0	0	0	0	0	0	3
20+	0	0	0	6	0	0	0	0	0	0	0	6
Total	0	0	0	355	0	0	0	0	113	0	0	468

In the table above, 350 wild horses would be removed within the 0-4 year old age group which would be typically adoptable. This is 161 more than in the Proposed Action table above. Additionally, 118 wild horses would be removed that would typically not be adoptable and would need to be maintained in Long Term Holding Pastures.

Table 18: Totals in 11 Years – Treated Mares

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	315	0
Median Trial	390	0
Highest Trial	595	0

Table 19: Most Typical Trial, Average Age Structure over 11 Years

Age group	Proposed Action	No-Action
foal	9%	20%
1	7%	15%
2	2%	11%
3	3%	8%
4	3%	7%
5	4%	6%
6	5%	5%
7	5%	5%
8	6%	4%
9	6%	4%
10-14	30%	11%
15-19	14%	4%
20+	6%	1%

Bald Mountain HMA

Table 20: Bald Mountain HMA Modeling Results Comparison of Alternatives

Year	Proposed Action		Alternative 1		No Gather	
	% of trials with a gather	Typical Trial Population	% of trials with a gather	Typical Trial Population	% of trials with a gather	Population Size, Average of 100 Trials
Year 1 - 2010	100	242	0	243	0	248
Year 2 - 2011	0	240	0	277	0	287
Year 3 - 2012	100	240	0	339	0	328
Year 4 -- 2013	0	200	100	383	0	378
Year 5 - 2014	100	194	0	147	0	433
Year 6 - 2015	0	197	0	183	0	492
Year 7 - 2016	100	170	0	198	0	566
Year 8 - 2017	0	161	0	250	0	653
Year 9 - 2018	100	161	83	261	0	751
Year 10 - 2019	0	171	0	166	0	875
Year 11 -- 2020	100	165	0	185	0	1,012

Because only the foals and yearlings have been identified for removal under the Proposed Action modeling, the population decreases slowly over the first few years to a point where it is maintained within the established AML. The population sizes under the Alternative 1 scenario are generally higher and exceed the established AML 6 of 11 years.

Table 21: Population Sizes in 11 years - Minimum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	91	104
Median Trial	157	138
Highest Trial	201	162

Table 22: Population Sizes in 11 years - Average

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	150	206
Median Trial	195	234
Highest Trial	232	251

Table 23: Population Sizes in 11 years - Maximum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	229	274
Median Trial	252	380
Highest Trial	334	493

Population sizes under the Proposed Action are generally lower for the average and maximum trials than for the Alternative 1 strategy.

Table 24: Average Growth Rate in 10 Years

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	-6.0	6.6
Median Trial	-0.7	14.4
Highest Trial	5.2	19.1

Table 25: Totals in 11 Years -- Gathered

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	735	155
Median Trial	924	346
Highest Trial	1082	511

Table 26: Totals in 11 Years -- Removed

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	40	137
Median Trial	92	317
Highest Trial	175	474

The number of wild horses gathered under the Proposed Action is approximately twice that of Alternative 1; however the number of animals removed is only 29-36% of the Alternative 1 strategy according to the modeling. Additionally, these animals would be comprised of foals or foals and yearlings and in general would be fully adopted, whereas the animals gathered under Alternative 1 would be comprised of all age groups.

Table 27: Totals in 11 Years – Treated Mares

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	229	0
Median Trial	302	0
Highest Trial	437	0

Table 28: Proposed Action: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	26	0	7	0	0	0	0	0	0	0	0	33
1	19	0	41	0	0	0	0	0	0	0	0	60
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0	0	0	0	0	0
15-19	0	0	0	0	0	0	0	0	0	0	0	0
20+	0	0	0	0	0	0	0	0	0	0	0	0
Total	45	0	48	0	93							

The table above shows the Most Typical Trial for the Proposed Action. Due to fertility control, animals are shown removed only through 2012.

Table 29: Alternative 1: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	0	0	0	43	0	0	0	0	28	0	0	71
1	0	0	0	52	0	0	0	0	23	0	0	75
2	0	0	0	29	0	0	0	0	11	0	0	40
3	0	0	0	14	0	0	0	0	19	0	0	33
4	0	0	0	12	0	0	0	0	10	0	0	22
5	0	0	0	5	0	0	0	0	13	0	0	18
6	0	0	0	3	0	0	0	0	4	0	0	7
7	0	0	0	6	0	0	0	0	6	0	0	12
8	0	0	0	14	0	0	0	0	4	0	0	18
9	0	0	0	9	0	0	0	0	1	0	0	10
10-14	0	0	0	4	0	0	0	0	1	0	0	5
15-19	0	0	0	1	0	0	0	0	1	0	0	2
20+	0	0	0	18	0	0	0	0	5	0	0	23
Total	0	0	0	210	0	0	0	0	126	0	0	336

The table above shows the removal of animals in all age groups through gathers completed through 2020. Of those removed, the model shows that 241 would be between 0-4 years of age and would be generally adoptable. 95 would be between ages 5 and 20+, generally not adoptable and would be maintained in Long Term Holding Pastures.

Table 30: Age Structure over 11 Years – Typical Trial

Age	Proposed Action	Alternative 1
foal	7%	19%
1	7%	15%
2	4%	11%
3	4%	8%
4	3%	6%
5	4%	5%

Age	Proposed Action	Alternative 1
6	4%	4%
7	5%	4%
8	4%	3%
9	5%	3%
10-14	23%	11%
15-19	14%	5%
20+	16%	6%

Rocky Hills HMA

Table 31: Rocky Hills HMA Modeling Results Comparison of Alternatives

Year	Proposed Action		Alternative 1		No Gather	
	% of trials with a gather	Typical Trial Population	% of trials with a gather	Typical Trial Population	% of trials with a gather	Population Size, Average of 100 Trials
Year 1 - 2010	100	172	0	158	0	163
Year 2 - 2011	0	158	0	192	0	182
Year 3 - 2012	100	158	0	232	0	208
Year 4 -- 2013	0	134	100	251	0	242
Year 5 - 2014	100	124	0	93	0	277
Year 6 - 2015	0	128	0	113	0	317
Year 7 - 2016	100	126	0	129	0	363
Year 8 - 2017	0	122	0	155	0	421
Year 9 - 2018	100	122	86	185	0	493
Year 10 - 2019	0	125	0	103	0	573
Year 11 -- 2020	100	124	0	110	0	665

For the Most Typical Trial, once the gather were completed in 2010, the modeling shows the Proposed Action to maintain a fairly stable population through time, decreasing slightly from 158 to 122 in 2018 as fertility control continues to be applied. Population sizes under the Alternative 1 strategy are much higher on average and exceed the AML 6 of the 11 years

Table 32: Population Sizes in 11 years - Minimum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	64	76
Median Trial	109	93
Highest Trial	137	115

Table 33: Population Sizes in 11 years - Average

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	97	137
Median Trial	132	156
Highest Trial	181	183

Table 34: Population Sizes in 11 years - Maximum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	150	199
Median Trial	164	251
Highest Trial	236	404

Table 35: Average Growth Rate in 10 Years

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	-5.9	7.2
Median Trial	1.6	14.7
Highest Trial	6.3	23.7

Table 36: Totals in 11 Years -- Gathered

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	425	115
Median Trial	570	242
Highest Trial	773	369

Table 37: Totals in 11 Years -- Removed

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	30	108
Median Trial	72	232
Highest Trial	153	352

The number of horses gathered under the Proposed Action is about twice that of the Alternative 1 strategy. However, the number of animals removed is 27-43% of Alternative 1. All animals removed under the Proposed Action would be foals or foals and yearlings and would be very adoptable. The animals removed under the No-Action protocol would consist of all age groups.

Table 38: Totals in 11 Years – Treated Mares

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	172	0
Median Trial	212	0
Highest Trial	294	0

Table 39: Proposed Action: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	16	0	5	0	0	0	0	0	0	0	0	21
1	25	0	36	0	0	0	0	0	0	0	0	61
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0	0	0	0	0	0
15-19	0	0	0	0	0	0	0	0	0	0	0	0
20+	0	0	0	0	0	0	0	0	0	0	0	0
Total	41	0	41	0	82							

The above table shows that after 2012, removals are no longer necessary due to the effectiveness of the fertility control on this population. In total, the Most Typical Trial reflects 82 foals and yearlings removed over the next 10 years.

Table 40: Alternative 1: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	0	0	0	17	0	0	0	0	21	0	0	38
1	0	0	0	26	0	0	0	0	13	0	0	39
2	0	0	0	33	0	0	0	0	11	0	0	44
3	0	0	0	7	0	0	0	0	9	0	0	16
4	0	0	0	13	0	0	0	0	5	0	0	18
5	0	0	0	4	0	0	0	0	2	0	0	6
6	0	0	0	3	0	0	0	0	11	0	0	14
7	0	0	0	4	0	0	0	0	2	0	0	6
8	0	0	0	14	0	0	0	0	3	0	0	17
9	0	0	0	16	0	0	0	0	9	0	0	25
10-14	0	0	0	1	0	0	0	0	2	0	0	3
15-19	0	0	0	2	0	0	0	0	0	0	0	2
20+	0	0	0	9	0	0	0	0	1	0	0	10
Total	0	0	0	149	0	0	0	0	89	0	0	238

In the above table approximately 155 wild horses 4 years old and younger would be removed under Alternative 1 through 2020. Approximately 83 animals 5 years and older would also be removed and would likely go to LTPs because they are typically not adopted by the public.

Table 41: Age Structure – Average over 11 years.

Age	Proposed Action	Alternative 1
foal	9%	17%
1	8%	15%
2	4%	11%
3	4%	8%
4	5%	6%
5	6%	6%
6	6%	6%
7	7%	5%
8	6%	5%
9	6%	4%
10-14	22%	8%
15-19	9%	4%
20+	9%	4%

New Pass/Ravenswood HMA

Table 42: New pass/Ravenswood HMA Modeling Results Comparison of Alternatives

Year	Proposed Action		Alternative 1		No Gather	
	% of trials with a gather	Typical Trial Population	% of trials with a gather	Typical Trial Population	% of trials with a gather	Population Size, Average of 100 Trials
Year 1 - 2010	100	539	0	547	0	553
Year 2 - 2011	0	525	0	585	0	617
Year 3 - 2012	100	521	97	794	0	704
Year 4 -- 2013	0	431	0	433	0	787
Year 5 - 2014	100	441	0	571	0	864
Year 6 - 2015	0	448	0	587	0	940
Year 7 - 2016	100	399	0	579	0	1,026
Year 8 - 2017	0	407	94	671	0	1,091
Year 9 - 2018	100	376	0	419	0	1,171
Year 10 - 2019	0	404	0	558	0	1,165
Year 11 -- 2020	100	379	0	625	0	1,205

Over time, the population size under the Proposed Action strategy declines and stabilizes between 376 and 448 animals. The Alternative 1 scenario reflects higher populations overall, and 6 years of the 11 total in excess of the established AML.

Table 43: Population Sizes in 11 years - Minimum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	221	347
Median Trial	364	441
Highest Trial	437	532

Table 44: Population Sizes in 11 years - Average

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	340	532
Median Trial	449	620
Highest Trial	541	876

Table 45: Population Sizes in 11 years - Maximum

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	506	658
Median Trial	558	878
Highest Trial	747	1,813

Average and maximum populations are substantially higher for the Alternative 1 scenario than for the Proposed Action scenario.

Table 46: Average Growth Rate in 10 Years

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	-3.7	8.6
Median Trial	2.0	16.1
Highest Trial	8.2	22.4

Table 47: Totals in 11 Years -- Gathered

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	1,557	282
Median Trial	1,998	758
Highest Trial	2,368	1,387

Table 48: Totals in 11 Years -- Removed

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	113	253
Median Trial	278	698
Highest Trial	506	1,340

The numbers of wild horses gathered is much greater for the Proposed Action than for the Alternative 1 strategy. However, the number of animals removed from the range is 37-44% of that of the Alternative 1 strategy, and animals would be comprised of highly adoptable foals and yearlings.

Table 49: Totals in 11 Years – Treated Mares

Trial	Alternative	
	Proposed Action	Alternative 1
Lowest Trial	589	0
Median Trial	726	0
Highest Trial	948	0

Table 50: Proposed Action: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	62	0	20	0	0	0	0	0	0	0	0	82
1	54	0	84	0	0	0	0	0	0	0	0	138
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0	0	0	0	0	0
15-19	0	0	0	0	0	0	0	0	0	0	0	0
20+	0	0	0	0	0	0	0	0	0	0	0	0
Total	116	0	104	0	220							

The above table shows that under the Proposed Action that the application of fertility control eliminates the need to remove any wild horses after the 2012 gather. All total, only 220 animals consisting of foals and yearlings are removed over a 10 year period.

Table 51: Alternative 1: Age Structure of Removed Animals 2010-2020 -- Most Typical Trial

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
foal	0	0	100	0	0	0	0	110	0	0	0	210
1	0	0	94	0	0	0	0	96	0	0	0	190
2	0	0	31	0	0	0	0	24	0	0	0	55
3	0	0	30	0	0	0	0	65	0	0	0	95
4	0	0	42	0	0	0	0	23	0	0	0	65
5	0	0	19	0	0	0	0	42	0	0	0	61
6	0	0	6	0	0	0	0	33	0	0	0	39
7	0	0	6	0	0	0	0	15	0	0	0	21
8	0	0	5	0	0	0	0	9	0	0	0	14
9	0	0	11	0	0	0	0	19	0	0	0	30
10-14	0	0	3	0	0	0	0	7	0	0	0	10

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
15-19	0	0	0	0	0	0	0	1	0	0	0	1
20+	0	0	9	0	0	0	0	8	0	0	0	17
Total	0	0	356	0	0	0	0	452	0	0	0	808

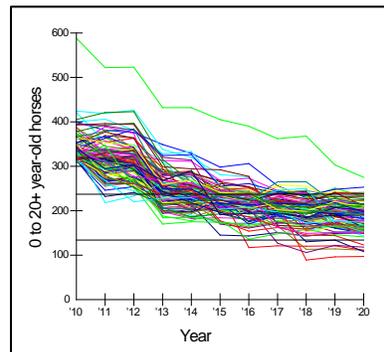
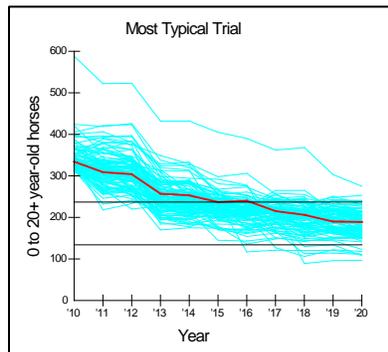
The above table shows gathers occurring in 2012 and 2017. All age groups are removed. A total of 615 animals 0-4 years of age are removed that could be adopted, which is 395 more than the above Proposed Action strategy. Additionally, 193 animals ages 5-20 years would be removed that would generally not be adopted and would need to be maintained in Long Term Holding Pastures.

Table 52: Age Structure – Typical Trial

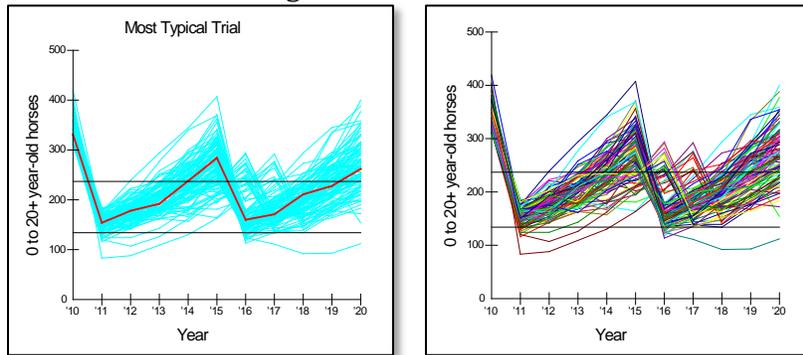
Age	Proposed Action	Alternative 1
foal	9%	17%
1	8%	17%
2	6%	13%
3	6%	12%
4	6%	8%
5	6%	6%
6	6%	5%
7	6%	4%
8	5%	3%
9	6%	3%
10-14	20%	8%
15-19	8%	3%
20+	6%	2%

Modeling Graphics

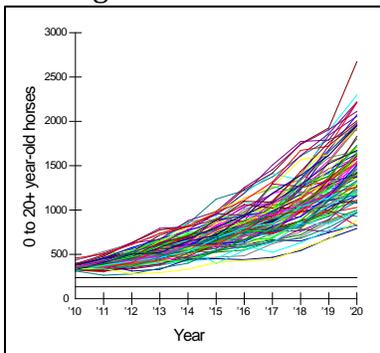
Callaghan HMA -- Proposed Action Typical Trial and Spaghetti Graph. Each line in the graph represents a trial. Most Typical Trial is represented in red.



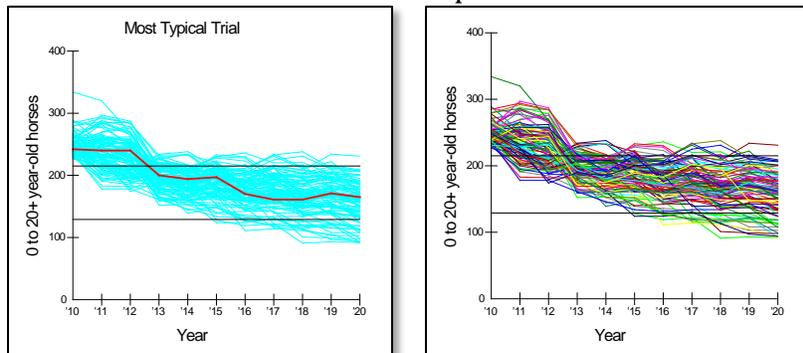
Callaghan HMA Alternative 1



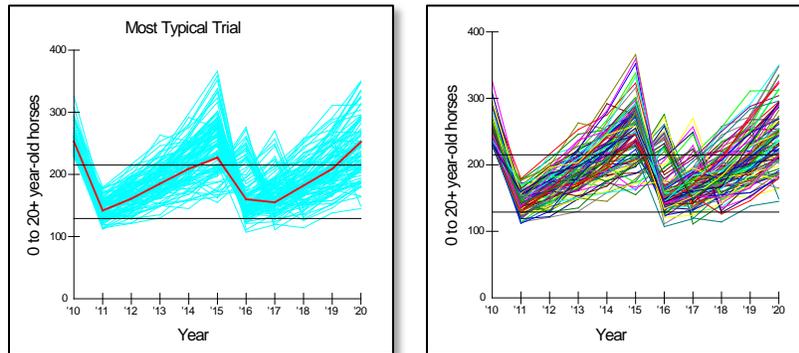
Callaghan HMA No Gather



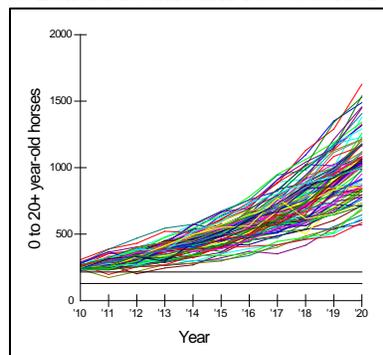
Bald Mountain Proposed Action



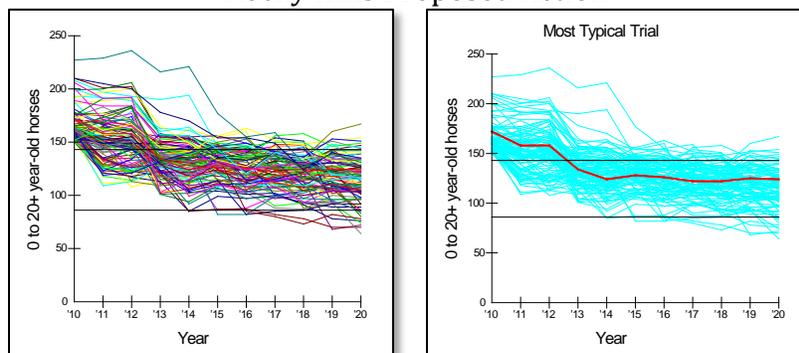
Bald Mountain Alternative 1



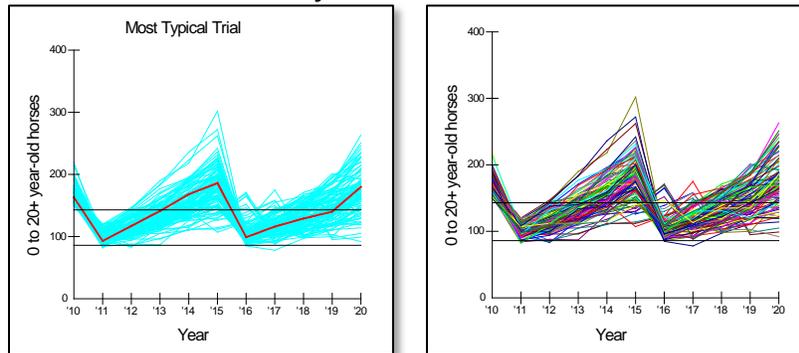
Bald Mountain No Gather



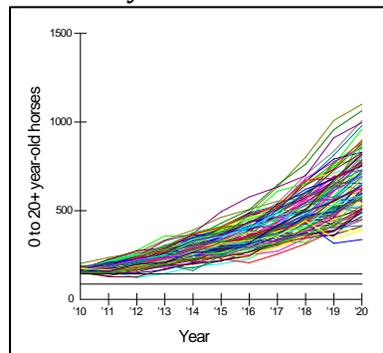
Rocky Hills Proposed Action



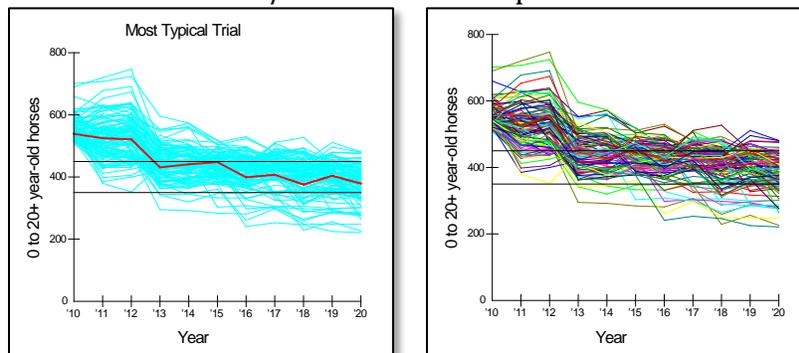
Rocky Hills Alternative 1



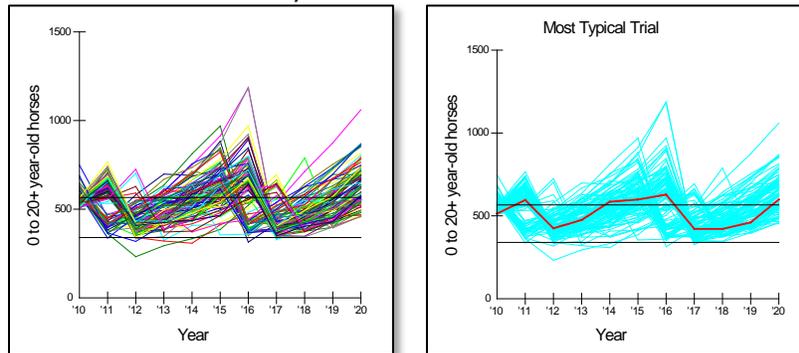
Rocky Hills No Gather



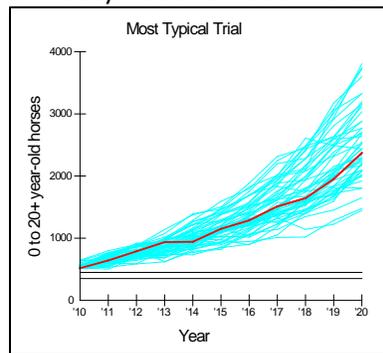
New Pass/Ravenswood Proposed Action



New Pass/Ravenswood Alternative 1



New Pass/Ravenswood No Gather



Additional Modeling – Response to Comments Received on Preliminary EA

In response to comments received pertaining to the population modeling, a few additional scenarios were simulated. Specifically, scenarios were simulated to show a gather and application of fertility control to occur in 2010 with subsequent gathers occurring every 3 years, 4 years and 5 years (rather than every 2 years as modeled for the Proposed Action).

Scenarios were also simulated to show gathers delayed until 2011 or 2012 and then occurring every 2 years thereafter with the application of fertility control. These additional scenarios were only completed for the Callaghan HMA in order to provide the reader with an example of what the model results would be under these types of simulations without exhaustive analysis and pages in the EA. The purpose of the model is to reflect the range of possible outcomes for various management scenarios that could occur in the future. Please keep in mind, the Proposed Action is to gather in 2010 and apply fertility control, releasing all animals except for weanlings, some yearlings and horses located outside of the HMA boundaries. Future gathers (whether in 2, 3, 4 or more years and with or without fertility control or other population controls) would be analyzed in a specific environmental document, referencing data

collected (vegetation, population, distribution, health, foaling, population increase) since the most recent gather. Similarly, the Alternative 1 is to not gather at this time (delay a gather). It was modeled to show the possible outcomes for a No Action or “status quo” situation, with a gather not occurring until 2013 for the Callaghan HMA then every 5 years thereafter, without the application of fertility control.

For the modeling of these additional scenarios, the most typical trial and the output for numbers gathers, removed, treated and average population growth rates for the analysis. The parameters of the model were set as were to complete modeling for the Proposed Action and Alternative 1, with 100 trials, modeled from 2010-2020 to give 11 years of data, with 80% gather efficiency.

Under the 3, 4 and 5 year Capture, Treat and Release (CTR) scenarios, the model was set to remove only weanlings and yearlings. The 3-year scenario was set to reflect gathers in 2010, 2013, 2016 and 2019, the 4-year scenario in 2010, 2014, and 2018 and the 5-year scenario in 2010, 2015 and 2020.

The “delay of gather” scenario parameters were also set to show the removal of only weanlings and yearlings with the application of fertility control on a 2-year gather cycle. The option to model a delayed gather or a current gather with a 2-year cycle without the application of fertility control was not modeled, because it is unreasonable that the BLM would re-gather these populations every 2-3 years and not apply fertility control, as the cost would be prohibitive.

The WinEquus model is currently incapable of assigning a “priority” for removal which would allow the model to show first the removal of weanlings, then yearlings, two years olds etc on down the list of ages in order to meet the AML objectives. The removal parameter by age group must be set for the *entire* scenario and cannot be changed for the various years or gathers within the scenario. This would be the realistic scenario for gathers as the exact age structure composition of the population is not known until the gather is underway. Additionally, when possible, it would be desirable to remove younger age groupings first, then older age groupings up to 4-5 years old, only removing what would be needed to achieve the post gather population goals.

The model results for the Most Typical Trial as well as for all trials were obtained from WinEquus and are summarized in the tables below. The results of the model show that as the interval between gathers and application of fertility control increase, that the average population size and numbers of animals removed from the range increases. Since these scenarios were not set to remove any other age groupings but yearlings and weanlings, the results reflect only those ages being removed. Therefore, the AML targets were not met through the gathers. In order to achieve the low AML objectives, horses of the older age groupings up to age 5 (or older) would have to be removed. In contrast, the Proposed Action modeling reflects the best opportunity to reach the AML goals, remove the fewest number of wild horses and remove the younger animals. Additionally, the modeling of the Proposed Action reflected the reduced need to remove animals through the successive gathers (by 2018, Table 16 Appendix D). All of the “extended” frequency CTR gather scenarios reflected the need to continue to remove weanlings and yearlings from the population, and yet still not reach the AML goals.

The other set of scenarios modeled was to delay a gather at this time, for one or two years. The model was then set to initiate gathers with application of fertility control on a two year frequency. The model was also set to remove only weanlings and yearlings. Both scenarios reflect higher average population sizes and numbers of animals removed than the Proposed Action.

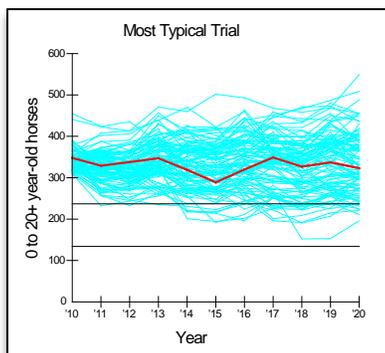
Table 53: Comparison of Modeling Results – Most Typical Trial (Callaghan HMA)

Alternative	Average Population Size	Total Removed - all ages	Total Removed 0-4 years of age	Total Removed 5+ years
Proposed Action (2-Year Scenario)	248	189	189	0
3-Year Scenario	330	193	193	0
4-Year Scenario	344	235	235	0
5-Year Scenario	364	244	244	0
Delay to 2011 (2-year)	300	295	295	0
Delay to 2012 (2-year)	322	308	308	0
Alternative 1	285	468	350	118

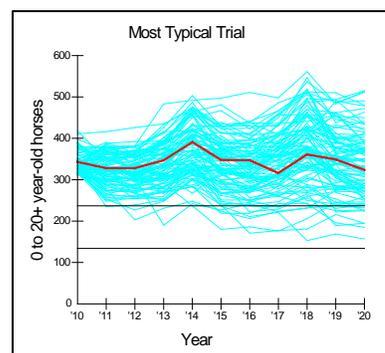
Table 54: Modeling Results: 10th -90th Percentile of 100 trials (Callaghan HMA)

Scenario	Average Population Sizes in 11 years	Horses Gathered in 11 years	Horses Removed in 11 years	Horses Treated in 11 years	Average Growth Rates (Total range and median trial)
Proposed Action	213-271	981-1,216	126-228	358-424	-6.8-5.8/0.0
3-Year Scenario	270-389	826-1,144	152-245	314-434	-1.8-11.1/6.4
4-Year Scenario	276-410	652-954	156-292	223-314	-2.4-14.1/6.6
5-Year Scenario	304-451	758-1,096	206-376	254-364	-1.7-14.8/8.5
Delay to 2011 (2-year)	259-337	959-1,252	170-343	326-404	-1.7-8.8/3.9
Delay to 2012 (2-year)	281-375	1,004-1,368	192-382	360-432	-2.2-10.8/4.4
Alternative 1	261-307	340-584	311-544	0	9.2-21.6/15.4
AML	134-237				

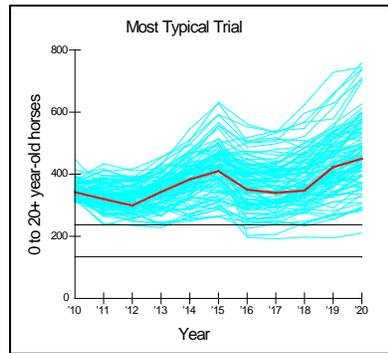
The following graphs display the Most Typical Trial as compared to AML for the additional scenarios modeled.



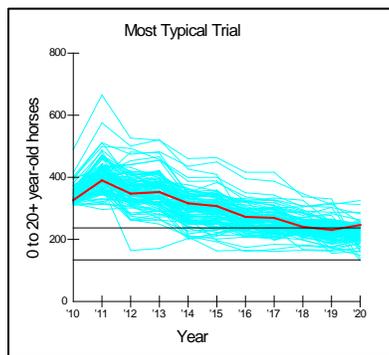
3-year Model Scenario



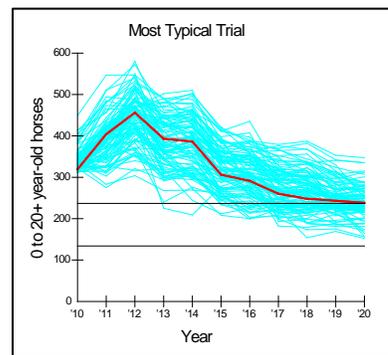
4-year Model Scenario



5-year Model Scenario



Delay of Gather to 2011 (2-year cycle)



Delay of Gather to 2012 (2-year cycle)

Appendix E – Response to Comments

Approximately 2,550 comments were received through October 10, 2010 following the notice of availability of the Preliminary EA, 30 day comment period and subsequent extension of the comment period. The overwhelming majority of these comments were fashioned from a mass form letter from an animal welfare organization. These “form letters” were reviewed and considered, however, only yielded 10 distinct comments. Unique comments or letters were received from approximately 12 individuals or agencies or organizations.

Most comments that were reviewed fell among, but were not limited to, the following themes:

- Support the action/importance of maintaining AMLs
- Herd growth/animal numbers incorrect
- Genetic health
- AMLs too low/not based on science
- Effectiveness/reversibility/undesirable effects of PZP
- Insufficient Alternatives/model scenarios
- Outside of scope of analysis
- Viewpoint/matter of opinion
- Concerns/effects of use of helicopters
- Public viewing opportunities during gathers
- Manage primarily for wild horses/remove or reduce livestock

No.	Commenter Name	Comment
1	Eureka County Department of Natural Resources	Support BLM’s proposal to administer fertility control to mares and removal of excess wild horses from the Callaghan Complex and New Pass/Ravenswood HMA. Maintaining wild horse populations at AML over the long-term is imperative to improving range conditions and obtaining multiple use Objectives.
Response		Comment Noted. The BLM appreciates Eureka County’s support for this project.
2	Eureka County Department of Natural Resources	Eureka County concerned about efforts spent on HMAs within AML when other HMAs exceed AML. Overall population of wild horses and resource impact of wild horses must be addressed. All HMAs must be brought to AML first. In the absence of active herd management, vegetation communities have been badly damaged, herd health is poor, wildlife habitat has been substantially reduced, livestock operations have suffered major economic losses, and hunting and recreational opportunities have been compromised. We cannot express strongly enough the importance of reaching and maintaining all wild horse herd populations at AML over the long-term.
Response		The Battle Mountain District Office (BMDO) understands the importance of maintaining the population sizes of all HMAs within the established AMLs and strives to schedule gathers on a regular basis. The gather schedule is subject to Nevada and National gather priorities and State and National funding levels. The BMDO will continue to monitor all HMAs and schedule gathers to achieve and maintain AMLs when possible.
3	State of Nevada Department of Wildlife (NDOW)	NDOW supports multiple-use objectives on public rangelands, with the hope that we can provide information and make recommendations that aid in the decision making process. Furthermore, it is our desire to ensure that negative impacts to wildlife are minimized while maximizing habitat benefits. As a result, NDOW supports your efforts.
Response		The BLM appreciates NDOW’s support for this project. Comment noted.
4	NDOW	NDOW supports the BLM’s efforts to gather excess wild horses and remove them from Nevada’s rangelands, as deteriorated rangeland conditions currently exist, negatively impacting wildlife habitat. As a result of deteriorated habitat, wildlife experience greater stress leading to population declines; therefore, it is essential to manage wild horse populations in order to "achieve and maintain a thriving natural ecological balance."

No.	Commenter Name	Comment
Response		The BLM appreciates NDOW's support for this project. Comment noted.
5	NDOW	NDOW supports BLM's efforts towards stabilizing population growth rates using fertility control and surgical procedures, in turn resulting in stable populations that remain within the Appropriate Management Level (AML). It is hoped that by managing wild horse populations within the AML, resource conditions can be improved to provide sustainable wildlife habitat conditions.
Response		The BLM appreciates NDOW's support for this project. Comment noted.
6	NDOW	NDOW is concerned with the use of porcine zona pellucida-22's (PZP-22) and insuring that the gather occurs within November - February time-frame when PZP-22 is most effective. It's our understanding that if given outside the November - February time frame, PZP- 22 will not be effective for the full 22 months; thus, the gather and PZP-22 treatment will need to occur the following year, not in 2 or 3 years as stated in the EA. This issue should be discussed in the EA.
Response		This proposed gather was scheduled specifically for the "Capture, Treat and Release" strategy with the timeframe for gather identified as December for maximum fertility control effectiveness. Should the gather be delayed for some unknown reason, future gathers and fertility control treatment would be considered in accordance with Nevada and National gather and removal priorities and analyzed in a future appropriate NEPA document. Refer to EA, Section 2.0.
7	NDOW	The EA states on page 8 that PZP-22 is a two year fertility control vaccine. On page 19 there is a contradictory statement reading "the efficacy for the application of the two year PZP vaccine based on winter applications follows: Year 1: normal; Year 2: 94%; Year 3: 82%, Year 4: 68%", which suggests that this vaccine has a three year fertility effectiveness. Please explain this contradiction and provide a reference to the statistics stated on page 19.
Response		Because the year 4 effectiveness falls to 68%, the benefits are minimal. Therefore the perspective is that the vaccine provides 2 years of effective fertility control. Refer to Turner et al. (2007) which concluded that 1) PZP acted as an effective contraceptive for 2 years post treatment; 2) some residual contraceptive effect remained in year 3; and 3) fertility returned to control levels by year 4 post treatment. <i>"Reproductive success rates in treated females remained 19.5% below rates in untreated females in 2003 (year 3) but this was not statistically significant. This absolute rate difference suggests a partial contraceptive carryover through year 3"</i> .
8	NDOW	It is our understanding, based on conversations between NDOW staff and scientific experts in the field of wild horse contraception and the BLM's own information materials, the high percentage of contraception at year 2, 3 and 4 from a single injection of PZP-22 is based on data from helicopter surveys. It is felt that mare/foal pairs cannot be accurately matched during these surveys and thus the data is not accurate. Data from studies involving intensive individual animal monitoring seems to suggest that PZP-22 when given within a specified winter time period will provide 94%- contraception through the following breeding season but that any prediction past that time is not supported by accurate data.
Response		Refer to <i>Immunocontraception in the Wild Horses: One Inoculation Provides Two Years of Infertility</i> , (Turner et al. 2007). Several methods were utilized over a five year period to assess pregnancy and maternity among the study of 96 treated females in the Clan Alpine HMA. Fecal steroid analysis was used to determine pregnancy. The sampling measures have proven >93% accurate in pregnancy diagnosis in several species (Lasley and Kirkpatrick 1991), including wild horses. The presence of a foal with a given marked female was determined by ground observations, monitoring the proximity and movement of mares and foals to determine pairs. During aerial helicopter counts the researchers established maternity by "applying minimal pressure on a given band of horses initially, which permitted foals to pair with mothers as the band formed up and moved away from the helicopter. We approached more closely to permit reading of freemark numbers, and then withdrew to permit re-observation of mother-foal

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		<i>pairings. We determined reliability of mother-foal pairing behavior as a basis for contraceptive assessment to be 95% when we re-identified and verified marked females with and without foals in ground surveys".</i> Pregnancy data versus foaling data was in 95% agreement. Please refer to the above referenced journal article for more information.
9	NDOW	To-substantially slow herd growth rates, most of a herd's mares would need to be captured and vaccinated with PZP-22 every two years during the winter. Other limitations with respect to PZP-22 are: (1) it is not commercially available and (2) the BLM's use of the vaccine is limited to an investigational exemption issued by the Food and Drug Administration and held by the Humane Society of the United States.
Response		Comment noted. The BLM plans to return to re-treat herds within 2-3 years, which would depend on National funding levels.
10	NDOW	Is- it possible to consider utilizing SpayVax as mentioned in the BLM population control document; "The BLM has recently initiated research through the United States Geological Survey and Oregon State University to study a fertility control vaccine called SpayVac. Based on recent research, SpayVac may have the potential to slow population growth rates for as long as 4 to 5 years." Also, some wild horse management programs are performing ovario-hysterectomies on mares. This surgical approach can be cost effective, safely performed and results in 100% contraception for the life of the mare. It would seem that this approach would be beneficial for all mares who have contributed genetically to the population.
Response		The BLM continues to explore many options for population control. When new methods are eventually approved, they may be implemented within Nevada HMAs following site specific NEPA and public involvement. For more information refer to <i>Long-Term Efficacy of Three Contraceptive Approaches for Population Control of Wild Horses</i> (Killian et al. 2006). The research focused on the efficacy of SpayVac, GonaCon and an implanted IUD. SpayVac is a formulation of a PZP vaccine. This study showed a higher level of contraception than other PZP vaccines previously studied (Liu et al. 1989, Kirkpatrick et al. 1996, Turner et al. 2002). However, the SpayVac mares were correlated with a high incidence of uterine edema (>80%) and behavioral estrus. Additionally, the antibody titer levels measured in the treated mares suggests contraception could last for a total of 7 years. At this point further study is needed to establish the rate of reversibility for the SpayVac vaccine.
11	NDOW	Kirkpatrick and Turner (2008) concluded from a long-term (ie. 13 years) study at the Assateague Island National Seashore (ASIS) that mares experienced increasing body condition scores, reduced mortality, and increased longevity. As a result of reduced mortality and increased longevity among mares, and in combination with many untreated mares remaining on the range, treatment potentially occurring every third year, and treatment potentially occurring outside the period when PZP-22 is most effective (ie. November - February), the population will likely continue to increase.
Response		The goals for these HMAs are to treat during the optimal time for fertility control during the late fall and winter to optimize the benefits of the treatment. Despite the apparent increase of body condition and longevity within treated populations, there are no studies available that definitively show that fertility control treatment would directly result in population <i>increases</i> . The MLFO continues to observe other HMAs previously treated with fertility control and has not witnessed a "rebound" effect from the vaccine. Some reproduction will continue in these herds. The goal of fertility control application is not to cause complete cessation of reproduction in the population or "extermination of entire herds" (Kirkpatrick et al. 2010).
12	NDOW	Additionally, without an accurate census, it is unknown if a proper percent of the mares are treated in order for the PZP-22 to be effective on an entire population.
Response		As the MLFO has done in the past, it will continue to conduct inventories of treated HMAs to observe animal health, foal production and overall herd population growth rates. This information would be used to make determinations for future management.

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13	NDOW	NDOW is concerned that there is a high potential for the herd to exceed the AML upper limit prior to the population stabilizing. If the population of each HMA has the potential for the herd to exceed the AML upper limit, why doesn't the BLM remove wild horses to the AML lower limit to provide a larger buffer against exceeding the AML upper limit?
Response		These Capture, Treat and Release gathers are intended to be "limited removal" gathers, which would not add to the already large population of wild horses in short and long-term holding. Accordingly, the BLM has limited the number of horses to actually be removed from each HMA. As a result, the estimated post gather population levels would fall in between the low and high AMLs these HMAs. This outcome is preferred to not gathering or treating these HMAs which would result in continued population increase above the high range of AML, with gathers likely not occurring until 2-4 years from now.
14	NDOW	NDOW request that a formal monitoring plan be administered that specifically evaluates the effectiveness of PZP-22 as limited data currently exists on this contraceptives value to-manage wild horses in a native rangeland setting. Surveys that "estimate population growth (ie. foal to adult ratio)" are not specific enough to evaluate PZP's effectiveness as various confounding factors (habitat and population dynamics) exist. For example, as a result of reduced mortality and increased longevity among mares following PZP treatments, the ratio of foals to adults will be skewed (Kirkpatrick and Turner 2008). If surveys are conducted that only capture "population growth (ie. foal to adult ratio)", how does the BLM plan to evaluate whether PZP-22 is effective as a contraceptive or if secondary or tertiary effects are the result for the response?
Response		The MLFO will continue to conduct aerial inventories on these HMAs as annual budget allows on an annual or biennial basis. We would welcome the assistance from NDOW to develop and sponsor monitoring plans for these areas. USGS and other researchers continue to study numerous wild horse herds across the country to further evaluate the effectiveness of the vaccine.
15	NDOW	NDOW questions why some of the HMAs are only being reduced to a moderate AML range and not to the lower limits. The Callaghan HMA is only -proposed to be reduced to 210 when the AML range is 134-237. Rocky Hills are also only being reduced to numbers slightly below the AML upper limits with post gather proposed population to be 132 when the AML range is 86-143. NDOW would recommend reducing the numbers in both of the HMAs to the lower allowed levels allowing for a larger AML buffer while maintaining "a thriving natural ecological balance".
Response		Refer to response to comment 13 above.
16	Safari Club International (SCI) and Safari Club International Foundation (SCIF)	Safari Club fully supports the Proposed Action Alternative. This alternative will allow the Bureau of Land Management ("Bureau") to satisfy its statutory duties in regard to managing wild free-roaming horses on public lands, while protecting other important resources of the area, including game species.
Response		The BLM appreciates the support of SCI/SCIF for this project. Comment noted.
17	SCI/SCIF	The Callaghan Gather EA thoroughly analyzes all the relevant issues and ensures that the Bureau will continue to consider alternatives to and the environmental consequences of the decision being made.
Response		Comment noted.
18	SCI/SCIF	Safari Club was involved in the defense of the recent challenges to the horse and burro gather at the Calico Mountain Complex and at the Twin Peaks HMA. Although the Environmental Assessments at issue in those cases were both thorough and in compliance with the National Environmental Policy Act ("NEPA"), plaintiffs in each case included legal claims based on NEPA.

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		The Callaghan Gather EA, as currently drafted, should survive any similar challenge, but the Bureau should do whatever it can to discourage a possible legal challenge by single-minded special interest groups.
Response		The BLM appreciates the support of SCI/SCIF for this project. Comment noted.
19	SCI/SCIF	Safari Club and SCI members support proper management of wild horses by the Bureau because if not properly managed, including through population control, these animals will harm the native ecosystem to the detriment of wildlife, including game species.
Response		The BLM appreciates the support of SCI/SCIF for this project. Comment noted.
20	SCI/SCIF	An important part of any NEPA analysis is the agency's consideration of a reasonable range of alternatives. The Bureau analyzed in detail an appropriate range of alternatives: The "Proposed Action Alternative," would address the constantly increasing horse population by removing some horses to make sure that the horse population remains in the AML while applying fertility controls to reduce the frequency of future gathers; Alternative 1 would delay the gather for several years and fertility controls would not be undertaken at this time; and The "No Action Alternative" was considered in the previous EAs that are incorporated by reference (Alternative 1 also serves as a no action alternative). Neither would remedy any of the present or potential future problems for the Callaghan & New Pass/Ravenswood Complex.
Response		Comment noted.
21	SCI/SCIF	Callaghan Gather EA at 7-11. The Bureau also considered but properly dismissed from detailed analysis three other alternatives. <i>Id.</i> at 10-11. Finally, as discussed below, the Bureau correctly did not include as part of the alternatives analysis, an analysis of what will be done with the horses after the gather.
Response		Comment noted.
22	SCI/SCIF	The Callaghan Gather EA devotes a great deal of analysis to the direct impacts of the proposed action and the alternatives. Callaghan Gather EA at 20-48. The Bureau properly focused the bulk of its analysis to these direct effects of the alternatives it was considering. ²
Response		Comment noted.
23	SCI/SCIF	The Callaghan Gather EA also did not include in the "Decision to be Made" the disposition of the horses after they are gathered and removed from the range (<i>e.g.</i> , disposition by adoption, sale, euthanasia, or transfer to long-term holding facilities). That decision is separate from the decision whether to hold a gather at the Callaghan & New Pass/Ravenswood Complex. Nonetheless, the Bureau properly considered the impacts to the excess horses throughout the process as part of the indirect impacts from the decision to be made. Callaghan Gather EA at 20-33.
Response		Comment noted.
24	SCI/SCIF	In the final EA or other decision document, the Bureau may want to clarify that the establishment, relocation to and use of the long-term pastures is subject to separate NEPA analysis and decision-making. For example, the Twin Peaks Gather EA explains that "[e]stablishment of [long-term holding] pastures was subject to separate NEPA and decision making process." Twin Peaks Gather EA at 92.
Response		This is included within the Preliminary EA within Section 3.2.
25	SCI/SCIF	The Bureau in the Callaghan Gather EA properly analyzes alternatives and impacts for the capture which is the subject of the Bureau's action.
Response		Comment noted.
26	SCI/SCIF	The Bureau has a broad obligation to manage wild horses "in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands." 16 U.S.C. § 1333(a). This balance benefits not only the horses, but the overall ecosystem and other wildlife, including game species. Based on the documentation in the Callaghan Gather EA, it appears that the Bureau correctly concluded that, "[b]y maintaining population size within

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		AML, rangeland resources would be protected from the deterioration associated with wild horse overpopulation, and a thriving natural ecological balance and multiple use relationship on public lands in the area consistent with the provisions of Section 1333(a) of the Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA) would be maintained." Callaghan Gather EA at 5. This conclusion is consistent with the experiences of Safari Club members in the Callaghan & New Pass/Ravenswood Complex and other lands regarding the adverse impacts of excess wild horses.
Response		Comment noted.
27	SCI/SCIF	Recently, the U.S. Fish and Wildlife Service ("Service") announced its decision to designate the listing status of the greater sage grouse as "warranted but precluded." If nothing else, this means that the Federal government, state governments, and other interested groups should manage the greater sage grouse to avoid the need to future listing as the Service's priorities change. The Bureau might want to consider noting that the conservation strategy already in place for this game bird notes as among its goals for the HMA: "Manage Wild Horse and Livestock Grazing in a Manner that Benefits Sage-Grouse Habitat." See Twin Peaks Gather EA at 70-71. Nonetheless, the Bureau correctly analyzed the impacts of excess horses on this species, both as a reason to conduct the gather and as an adverse impact that would continue under the "No Action" alternative. 2008 Callaghan Gather EA at 44-45, 2007 New Pass EA at 38.
Response		Comment noted. Additional information has been added to the Final EA in Section 3.8. the conservation strategy referenced is specific to California.
28	SCI/SCIF	Safari Club supports continued sustainable and well-regulated hunting on the Callaghan & New Pass/Ravenswood Complex and surrounding areas. We particularly support the proposed action as it helps ensure a thriving ecological balance where all wildlife, including game and non-game species, can exist.
Response		Comment noted.
29	SCI/SCIF	In sum, the 113-page Callaghan Gather EA the Bureau has prepared for this proposed gather more than meets the standards for an EA.
Response		Comment noted.
30	SCI/SCIF	In addition to the Bureau's authority under the Wild Horses Act, the Federal Land Policy and Management Act ("FLPMA") broadly authorizes the Secretary of the Interior, and the Bureau, to take "any action" to protect public lands under the Bureau's control. 43 U.S.C. § 1732(b) ("In managing the public lands the Secretary shall, by regulation <i>or otherwise</i> , take <i>any action</i> necessary to <i>prevent unnecessary or undue degradation of the lands.</i> ") (emphasis added). The "any action" that FLPMA authorizes would include the removal of the destructive excess horses from the range. Safari Club encourages consideration of citing to this authority in any final decision document. While the Wild Horses Act provides all the authority the Bureau needs here, its proposed action (and any subsequent disposition of the excess horses) is also fully supported by Section 1732(b) of FLPMA.
Response		Comment noted.
31	SCI/SCIF	Faced with a serious problem of excessive numbers of wild horses on the Callaghan & New Pass/Ravenswood Complex, the Bureau has prepared an excellent EA that analyzes the problem, the alternatives to address the problem, and the consequences of various alternatives. By doing so, the Bureau is fully informed of the environmental consequences of its proposed actions. The Bureau should adopt the proposed action as its final action and commence the planned gather. SCI stands ready to assist in these efforts.
Response		Comment noted.
32	Cindy McDonald	The New Pass/Ravenswood HMA was gathered in late 2007, prior to the 2008 foaling season. BLM reports a 2008 summer census directly counted 407 wild horses that included 79 foals on page 4 and 81 foals counted on page 15. Which is the correct number of foals?
Response		We apologize for the error. The correct number is 81 foals. The 79 foal figure was accidentally

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		noted and represents the number located within the Battle Mountain District portion of the HMA during the inventory. An additional 2 foals were located on the Carson City District portion. The wrong line of the inventory table was referenced when obtaining figures for the EA. The error has been corrected in the final EA.
33	Cindy McDonald	Based on this direct count, the actual breeding population at this time was 328 adults; this represents a 24% reproductive rate, significantly higher than BLM has projected or posted.
Response		<p>The discussions in the EA refer to the percent of foals observed during the inventory flights. The percent foals observed does not indicate a reproductive rate, as a reproductive rate would include foals that were born but died or were killed. During the flights conducted in September 2008 and 2009, foals would have been 6-9 months of age. The foals observed and documented represent just that – not reproductive rate and not population growth rates. The formula for the percent foals observed is the number of foals observed divided by the total population observed * 100. For example: 2009 inventory of New Pass/Ravenswood HMA: 444 total observed, 50 foals. $(50/444) * 100 = 11.26\%$ foals observed.</p> <p>Annual rates of population increase are factors of the numbers of foals born and deaths of all age groups. The average annual rate of increase for the Mount Lewis Field Office in HMAs not treated with fertility control is 17.5%. The 4700-1 BLM Wild Horse and Burro Management Handbook provides this formula for estimating the percent annual population growth rates: (Population on 2/28 Year 2 minus population on 2/28 Year 1) divided by Population on 2/28 Year 1 * 100. For the New Pass/Ravenswood HMA example the formula would read as follows (for population counts obtained in September): $(444 \text{ (Year 2)} - 407 \text{ (Year 1)}) / 407 * 100$ or $37/407 * 100 = 9.09\%$ population increase between 2009 and 2010.</p> <p>In summary, the percent foals and population increases noted in the EA are accurate per the formulas given above. The reader has chosen a different method to assess these figures which is not consistent with BLM methods.</p>
34	Cindy McDonald	In September 2009, BLM reports an additional aerial census was conducted after the 2009 foaling season. Here, BLM reports 444 wild horses were found with 50 of these identified as foals. Since wild horses do not breed at one year of age, the ability for 79-81 foals counted in the 2008 summer census were biologically incapable of contributing to the breeding population or increasing recruitment rates for the 2009 spring foaling season. As a result, the original 328 adults cited in the 2008 summer census were the only animals capable of reproduction and contributing to increases in the population. By the time the September 2009 census was complete, BLM cited an additional 50 foals were inventoried during the census period with a total directly counted population of 444 wild horses. This indicates that approximately 129-131 wild horses were incapable of biological reproduction. Subtracting 129 non-reproducing foals and weanlings from 444 wild horses results in 315 breeding adults; 13 less than BLM found in their 2008 census. Based on this data, 315 adult horses produced 50 foals over the 2009 foaling season, indicating a reproductive rate of 15.8% reproductive rate, despite the administration of fertility control to many mares released to the range after in the 2007 New Pass/Ravenswood, not 12% as reported in the environmental analysis.
Response		<p>It is possible for wild horse yearling fillies to become pregnant, as documented by captured two-year old mares that have suckling foals at their sides, though this occurrence is not frequent. A 2001 gather of the Roberts Mountain HMA resulted in the documentation of 6 mares ages 1-2 years that were found to be “wet” or nursing foals. This represented 2.5% of the mares captured during that gather.</p> <p>When the BLM computes the percent foals in a population it is as identified in the comment above (#33): #foals is divided by the <u>TOTAL</u> population, which includes all ages, not just the</p>

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		estimated breeding aged animals. The numbers identified in the EA are percent foals, not reproductive rates. Again, the reader is using a different formula to calculate “reproductive rate”.																				
35	Cindy McDonald	BLM then uses estimated reproductive rates for the Proposed Action and Alternative 1 to estimate the 2010 wild horse population, which again would be comprised of 315 biologically capable breeding adults as both the 2008/2009 foal crops are biologically incapable of contributing to population increases in any significant degree due to their ages being comprised of one and two years old. BLMs current population estimate is 504 wild horses (Table 3, pg. 13), an estimated increase of 60 wild horses as a result of the 2010 foaling season. With a still stable wild horse population of 315 breeding adults, this indicates an actual reproductive rate of 19%.																				
Response		The 2010 populations were estimated based on the 2009 inventory results and estimated rates of increase of 12% for the New Pass/Ravenswood HMA and 11% for the Callaghan Complex. Refer to Section 3.2 of the EA. These rates were estimated conservatively based on the number of foals observed during the first and second years of fertility control and the number of treated mares in the population. The MLFO does not apply a “reproductive rate” as the reader has calculated. Refer to response 33 and 34 above. The population growth from 2008 to 2009 was 9.09%. 19.9% foals were observed during the 2008 flight and 11.2% foals were observed during the 2009 flight.																				
36	Cindy McDonald	<p>The BLM last conducted removals in the Callaghan Complex in January 2009. Since then, approximately two foaling seasons have occurred.</p> <p>In September 2009, BLM conducted an aerial census and reported the following direct counts for each HMA. Here, BLM reports the foals as a percentage of the population but fail to report the actual reproduction rate of each censused area.</p> <p style="text-align: center;">2009 Census Inventory</p> <table border="1"> <thead> <tr> <th>HMA</th> <th>Number</th> <th>BLM Reports</th> <th>Actual Recruitment Rate</th> </tr> </thead> <tbody> <tr> <td>Callaghan</td> <td>202 adults/36 foals = 238 total</td> <td>15.1%</td> <td>17.8%</td> </tr> <tr> <td>Bald Mt</td> <td>111 adults/27 foals = 138 total</td> <td>19.6%</td> <td>24.3%</td> </tr> <tr> <td>Rocky Hills</td> <td>123 adults/26 foals = 148 total</td> <td>17.4%</td> <td>21.1%</td> </tr> <tr> <td></td> <td>436 adults/89 foals = 525 total</td> <td></td> <td></td> </tr> </tbody> </table> <p>If 436 adult horses were counted in September 2009 and 89 foals, this indicates an average reproductive rate of 20.4%.</p>	HMA	Number	BLM Reports	Actual Recruitment Rate	Callaghan	202 adults/36 foals = 238 total	15.1%	17.8%	Bald Mt	111 adults/27 foals = 138 total	19.6%	24.3%	Rocky Hills	123 adults/26 foals = 148 total	17.4%	21.1%		436 adults/89 foals = 525 total		
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Response		Refer to responses 33-35 above. The formula the reader has used for “Actual Recruitment Rate” is not used by the MLFO. The numbers identified by the BLM represent the percent foals documented during the inventory. The actual reproductive rate cannot be derived as it is unknown exactly how many foals were born to the population. The number of foals present in September is a close approximation to the annual rate of increase that would be expected for that year.																				
37	Cindy McDonald	<p>However, despite BLM applying fertility control to mares after the 2009 removals (which would not be effective until the 2010 foaling season), the following reproductive rates have been projected on each HMA to derive the 2010 population estimates, despite 89 wild horses being incapable of reproduction during the 2010 foaling season. BLM estimates that:</p> <ul style="list-style-type: none"> • Callaghan went from 202 adults in September 2009 to 264 estimated in September 2010, an increase of 62 foals. This is a reproductive rate of 30.6%. • Bald Mountain went from 111 adults in September 2009 to 150 in September 2010, an increase of 39 foals. This is a 35.1% reproductive rate. • Rocky Hills went from 123 adults in September 2009 to 165 in September 2010, an increase of 42 foals. This is a 34% reproductive rate. <p>BLM total current estimate for Callaghan Complex is 579 animals. BLMs directly counted 525</p>																				

No.	Commenter Name	Comment
		<p>in 2009 with total adults being 436. This is a 143 estimated foal increase in one year from the adult breeding population with a 32.7% reproductive rate average, despite FY2010 being the first year fertility control was suppose to be effective.</p>
Response		<p>Refer to responses 33-35 above on how the BLM computes percent foals. The estimated 2010 populations for the Callaghan Complex were derived by using an estimate of 11% increase added to the 2009 inventory direct count. For example: 2009 Direct Count of 238 * 1.11% =264 estimated 2010 population post foaling. The estimated annual rate of increase represents the number of foals born to increase the population minus the deaths of all age groups. The MLFO does not compute “reproductive rates” per HMA or per year. Eleven percent increase was chosen based on prior experience within the District and data recorded for fertility control effectiveness in years 2 through 4. 11.2% was observed in year 2 of fertility control administered to the New Pass/Ravenswood HMA. In 2006, the year 2 foal percentage averaged 12.8% on the Diamond Complex after a summer application of fertility control in 2004.</p>
38	Cindy McDonald	<p>Based on this data, the administration of fertility control in wild horse herds is failing to be effective in slowing population growth to any significant degree as well as indicating that it is actually accelerating reproductive rates and thus, impacting both herd health, rangeland objectives, contradicting BLMs’ “minimum feasibility” mandates regarding management actions as well as overburdening taxpayers with both the costs of administering fertility control as well as accelerating the gather cycles.</p>
Response		<p>Experience within the MLFO indicates that the application of fertility control can reduce the percent foals observed during inventory flights by nearly half of levels experienced in the absence of fertility control. Percent foals observed in 2005, 2007 and 2008 within the New Pass/Ravenswood HMA were 17%, 18% and 19.9% respectively prior to application of fertility control. The first year of fertility control effectiveness yielded 11.2% foals observed during the inventory flight. The same patterns have been observed within the Diamond Complex. The effectiveness of fertility control is subject to many factors, including the overall proportion of the population gathered and treated. Subsequent flights of nearly all HMAs after gathers results in more animals observed than anticipated which indicates lower gather percentage or the ingress of (untreated) animals from adjoining HMAs. The estimated gather efficiency of New Pass/Ravenswood in 2007 is 78% with an estimated 178 animals uncaptured. 158 animals were released back to the HMA, with 92 of these being treated mares. Approximately half of the mares remaining in the HMA post-gather were treated with fertility control, which has resulted in an apparent reduction in the number of foals born, compared to the overall population and a reduction of the overall growth rate observed. There is no evidence to suggest that the application of fertility control increases population growth rates during the effective period. The goal of the Proposed Action is to reduce the overall number of animals that must be removed from the range during future gathers and therefore reduce costs to taxpayers and the disturbance to wild horses through removals. Refer to response 46 pertaining to Minimum Feasible Level. Refer also to Bartholow, 2007 which concluded that the BLM will experience significant cost savings as carefully designed contraceptive programs become widespread in the wild horse herds it manages. Bartholow also concluded that contraceptive treatment added to the status quo gather and removal program would be cost effective for wild horse herds except for those with low growth rates. Operational cost savings could range from 12-20% compared with baseline estimates – depending on the herd, and effectiveness of treatment. Further, costs related to contraceptive treatments, minimum gather costs, and costs of off-year population estimates were inconsequential compared with other management expenses.</p>
39	Cindy McDonald	<p>Please provide an examination of the Proposed Action that includes accurate reproductive rates and population estimates for the breeding adult wild horse population in the analysis.</p>

No.	Commenter Name	Comment
Response		As indicated in responses 33-35 above, the annual rates of increase used by the MLFO and those estimated for the Callaghan Complex and New Pass/Ravenswood HMA are based on historical rates experienced in MLFO HMAs, observed percentages of foals during inventory flights and rates of increase observed in HMAs previously treated with fertility control. The population estimates given in the EA are based upon the best available data.
40	Cindy McDonald	On page 8, BLM identifies the Proposed Action as; <i>"All of the released mares would be treated with a two-year Porcine Zona Pellucida (PZP-22) or similar vaccine and released back to the range."</i> (Emphasis added). BLM fails to include any name, analysis, data, information, direct, indirect or cumulative impacts regarding the inclusion of this alternative or "similar vaccine". Please provide quality data to the public regarding what vaccines BLM is proposing here as well as data, analysis, information and direct/indirect cumulative impacts regarding all fertility control being considered in the Proposed Action.
Response		At this time, no other vaccine is available. The wording referenced is standard language that was located in a template EA for this project. The phrase "or similar vaccine" has been removed from the EA to avoid confusion.
41	Cindy McDonald	BLM cites reasons for failing to examine a "true" No Action Alternative, a potential violation of NEPA requirements all within itself and so, rejects an sincere No Action Alternative analysis by incorporation with the EA. Yet, on page 48, BLM goes on to incorporate it in only one place by citing "There will be no safety concerns to BLM employees, contractors and the general public as no gather would occur." BLM fails to examine safety concerns for Alternative 1 while incorporating analysis for an Alternative they did not incorporate in the EA. Please remedy by incorporating a full No Action Analysis in the EA as well as examining actual impacts of Alternative 1.
Response		<p>NEPA Handbook H-1790-1, page 79 states <i>"Although the regulation at 40 CFR 1508.9 (b) makes no specific mention of the No Action alternative with respect to EAs, the CEQ has interpreted the regulations generally to require some consideration of a No Action alternative in an EA....Therefore, at a minimum, your EA must include documentation of the current and future state of the environment in the absence of the proposed action. The discussion <u>does not need to be a separate section called 'No Action Alternative,' but can be part of the environmental effects section of the EA to show the change in effects brought about by the proposed action or alternatives.</u>"</i></p> <p><i>"You may analyze the No Action Alternative with the same level of treatment as the proposed action and any action alternatives, if this will assist in your decision-making."</i></p> <p>For an EIS analysis of the No Action Alternative is required by CEQ 40 CFR 1502.14(d). <i>"The No Action alternative is the only alternative that must be analyzed in an EIS that does not respond to the purpose and need for the action."</i></p> <p>The Alternative 1 is essentially the "No Action" Alternative, as <i>"a gather would be delayed for several years and fertility control application would not be undertaken to control the size of the wild horse population within the established AML at this time"</i>. The Alternative 1 serves the same purpose of the No Action by serving as the baseline for analysis and providing the status quo. No Action alternatives that analyzed <i>never</i> conducting a gather and showing perpetual, continued population growth were analyzed in the previous EAs referenced in the EA. The sentence referenced in the comment above is specific to the Alternative 1 and is not specific to a No Action Alternative because it states that a gather would not occur. A gather would not occur at this time under Alternative 1. A true No Action was discussed in Section 2.4 and also included within the population modeling Appendix D in many of the tables and graphs. Alternative 1 and the No Action were adequately analyzed in the EA.</p>

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42	Cindy McDonald	BLM fails to demonstrate quality data or consistency within the examinations of the Alternatives or the direct and indirect cumulative impacts. Specifically, BLM states: Under Alternative 1, BLM states wild horses may not be gathered for “several years” if they fail to implement the proposed action now. However in the Population Modeling section, BLM states the population modeling trials were run for gathers conducted every 2 years over a 10year cycle.
Response		The Proposed Action is to gather these areas in 2010 and apply fertility control as described in Section 2.1. The Alternative 1 is not to gather at this time. Though the EA states that the BLM would plan to return to these areas in 2-3 years to re-apply fertility control, returning to these HMAs to re-administer fertility control would be analyzed in a separate NEPA document following the collection and analysis of data. The Proposed Action is not to gather every two years, nor is the Alternative 1 to gather every 5 years. These Alternatives were modeled this way to demonstrate a range of potential outcomes for a realistic management strategy. Please review these sections in the EA. Specifically, in Appendix D, under “Proposed Action Modeling Scenario – Capture Treat and Release Strategy” the EA states <i>“For the Proposed Action, the model was set to gather at two year intervals, beginning in 2010 . . .”</i> . Under the heading Alternative 1 Modeling Scenario – Current Management it states <i>“For Alternative 1, a scenario was chosen that would emulate current management strategies. Five years was chosen for the Alternative 1 Modeling”</i> . In summary, the Proposed Action was modeled to show gathers every 2 years with fertility control and the Alternative 1 was modeled to show gathers every 5 years without fertility control.
43	Cindy McDonald	How is it BLM is capable of gathering horses and administering fertility control every two years in the alternative that supports administration of fertility control but does not project funding availability or scheduling opportunities to conduct gathers for “several years’ in Alternative 1?
Response		The Proposed Action and the Capture, Treat and Release (CTR) Strategy is a recent strategy that has been developed and is being implemented in response to the public’s desire for the BLM to increase the use of Fertility Control and reduce animals removed from the range. These gathers are in addition to the regular gather schedule. If this CTR program was not being implemented, the Callaghan Complex and New Pass/Ravenswood HMA would likely not fall on the gather schedule for several more years due to funding and other gather priorities. The CTR gathers are a priority to the Secretary of the Interior.
44	Cindy McDonald	Please provide analysis of Alternatives that apply consistent application of gather cycles to analysis. If necessary, provide analysis on the Proposed Action and Alternative 1 for a 2 year gather cycle and a 5-7 year gather cycle.
Response		<p>Additional scenarios were modeled to reflect a 3, 4 or 5 year gather frequency with the application of fertility control (as compared to the modeling done for the Proposed Action which was done for a 2 year gather cycle. Additionally, scenarios were added to reflect delaying the gather until 2011 or 2012. These additional scenarios were only modeled for the Callaghan HMA in order to give the reader an example of what the model results would be. Refer to the end of Appendix D for the summary and tables.</p> <p>Keep in mind, the Proposed Action is to gather in 2010 and apply fertility control, releasing all animals except for weanlings, some yearlings and horses located outside of the HMA boundaries. Future gathers (whether in 2, 3, 4 or more years and with our without fertility control or other population controls) would be analyzed in a specific environmental document, referencing data collected (vegetation, population, distribution, health, foaling, population increase) since the most recent gather. Similarly, the Alternative 1 is to not gather at this time (delay a gather). It was modeled to show the possible outcomes for a No Action or “status quo” situation. The option to model a delayed gather or a current gather with a 2-year cycle</p>

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		<p>without the application of fertility control was not modeled, because it is unreasonable that the BLM would re-gather these populations every 2-3 years and not apply fertility control, as the cost would be prohibitive.</p> <p>Bartholow (2007) concluded that delay of gathers would not result in the savings that could be attained with the application of fertility control on a more frequent basis and that reducing the gather frequency to 2 years could result in additional savings. Additional modeling completed by the HSUS (Wild Horse Projection and Costing Model) has shown that the BLM's current program (similar to Alternative 1) is unsustainable, and that <i>"by replacing the current gather-and-remove programs with gather-treat-and-release programs, the BLM would save approximately \$204 million dollars over 12 years while achieving and maintaining Appropriate Management Levels (AML) on wild horse Herd Management Areas (HMA) on public lands in the U.S"</i> (HSUS, 2010).</p>
45	Cindy McDonald	<p>As a result of BLMs inconsistent application of examination of the Proposed Action and Alternative 1 in relation to gather cycles, BLMs sole application of Population Modeling based on two year gathers to inject fertility control fails to accurately analyze a more realistic proposal of gather cycles based on a 5-7 year span.</p> <p>Please incorporate a 5-7 year gather cycle analysis in the Proposed Action analysis instead of relying exclusively on a management plan that BLM has admitted within the EA has never been available in prior years nor is projected to be available within the parameters of Alternative 1.</p>
Response		<p>Refer to response 45 above. Additional modeling which includes the increased interval between gathers results in higher average populations, the need to remove more horses (including older age groups), and the failure to maintain populations within the AML ranges. The modeling scenarios originally chosen and analyzed in the Preliminary EA were provided in order to show the potential outcome of the most aggressive fertility control treatment that could be possible. It is well established through the literature and the history of managing, gathering and contracepting wild horses, that increased gather interval results in higher populations and needed gather and removal numbers in order to achieve AMLs.</p>
46	Cindy McDonald	<p>BLM just treated wild horses within the Callaghan Complex with fertility control less than one year ago. The Proposed Action may be in violation of the Act and CFR's pertaining to wild horse management by committing the following violations; failing to adhere to management actions that are at the "minimum feasible level", failing to protect wild horses from undue harassment and failing to assess the "true" cost to the DOI, BLM and the American taxpayer by unduly burdening the public with removals and fertility control prematurely.</p>
Response		<p>The Callaghan Complex was gathered and treated in December 2008 and January 2009. The proposed gather date of December 2010 through January 2011 will represent 2 years since the gather of this area, and over three years since the gather of the New Pass/Ravenswood HMA.</p> <p>Under the WFRHBA, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess immediately upon a determination that excess wild horses exist. The law also provides that determinations will be made <i>"whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels)."</i> [emphasis added].</p> <p>"Minimally feasible level" does not refer to gathers specifically, but originates from early congressional hearings in order to prevent the wild horses and burros from being managed in "zoolike" settings²⁴. The proposed gather and population control alternatives are completely in</p>

24. "The committee wishes to emphasize that the management of the wild free-roaming horses and burros be kept to a minimum both from the aspect of reducing costs of such a program as well as to deter the possibility of "zoolike" developments. An intensive management program of breeding, branding and physical care would destroy the very concept

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		<p>accordance with the WFRHBA. As stated in the EA, by conducting the gather now, and re-treating with fertility control, few animals would be removed as compared to delay of the gather. Additionally, younger, adoptable animals would be removed which would create less of a burden than the removal of several hundred older horses that must be maintained in long term holding facilities. Refer to additional modeling scenarios presented in Appendix D which show the potential impacts to population size and needed animals removals by delaying the proposed gather to 2011 or 2012 for the Callaghan HMA. Bartholow, 2007 found that either a 2-year or 3-year contraceptive application was effective in reducing management costs by 12-20% and in his study, herds would not benefit by delaying the regular 4-year gather frequency to 6 or 8 years in combination with a 2 year contraceptive, although reducing the period to 2 years could reduce costs 26-55%. Bartholow also showed that the number of wild horses added to long-term holding was reduced over the simulated 20-year period and contraceptive treatment would likely reduce the number of horses that must be removed in total, with attendant cost reductions in the number of adoptions and total holding costs. Further, Turner et al. 2007 concluded that administering a single-injection, multi-year contraceptive to females being returned to the range has the potential to limit management program costs by reducing frequency of horse roundups, number of horses entering the adoption program (or maintained in long-term holding facilities), and the number of horses using the range (Gross 2000). Associated benefits will include improved range quality and reduced stress to wild horse populations (due to better habitat and less human intervention).</p>
47	Cindy McDonald	<p>Please examine an alternative that would postpone the Proposed Action until wild horse populations actually exceed AMLs within each HMA and incorporate reasoning as to how BLM believes this Proposed Action and Alternative 1 does not violate mandates associated with management of wild free-roaming horse populations within the proposal.</p>
Response		<p>The Alternative 1 represents a delay of a gather to a later point in time. The Callaghan and Rocky Hills HMAs already exceed the upper limit of the AML. A delay of gather would forego the opportunity to apply fertility control at this time, and result in the removal of additional wild horses to achieve the low AMLs. Refer to Appendix D for additional modeling done to simulate a delay of gather of the Callaghan HMA to 2011 or 2012, which shows increased population size in relation to AML and increased numbers of animals that would have to be removed from the range in future gathers.</p>
48	Cindy McDonald	<p>BLM examines only one side of the direct and direct cumulative impacts to the Proposed Action and Alternative. Because a No Action Alternative failed to be incorporated, there is no analysis whatsoever that the public can draw direction from.</p>
Response		<p>The Alternative 1 represents the No Action as no gather would occur at this time. Not ever conducting a gather is assessed in the previous EAs completed for these HMAs (refer to Section 1.2 of the EA). A no gather scenario was also displayed in the tables in Appendix D. Refer to response 41 above.</p>
49	Cindy McDonald	<p>What BLM fails to disclose is, the premature removal of weanlings and yearlings will continue to add burden to an already overburden adoption and long term holding program. The inclusion of more "adoptable" animals results in a reduced interest in older horses thereby creating more stress to short and long term holding facilities and reducing opportunities to remove wild horses from these facilities due to potential demand.</p>
Response		<p>There is no data or other supportable information that indicates that removal of primarily weanlings and yearlings during a gather to administer fertility control would create additional burden to the existing BLM adoption program. Over time, if these areas continue to be treated, and if additional HMAs across the west continue to be treated, there would be a continued reduction in the number of wild horses that would need to be removed and overall a reduction</p>

that this legislation seeks to preserve." 92nd Congress, Senate Report 92-242, June 25, 1971.

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		in the number of wild horses that must be adopted, sold or maintained in Long Term Holding Pastures. This is supported by the research and modeling that has been done. Further, modeling completed by the HSUS has determined <i>“that by replacing the current gather-and-remove programs with gather-treat-and-release programs, the BLM would save approximately \$204 million dollars over 12 years while achieving and maintaining Appropriate Management Levels (AML) on wild horse Herd Management Areas (HMA) on public lands in the U.S”</i> (HSUS, 2010). Refer also to responses to comments 38 and 46 above.
50	Cindy McDonald	This alternative was actually what was sold to Congress during the 2001 Healthy Watersheds Initiative that initiated BLMs current holding dilemma. At that time, BLM stated that as removals were reduced by achieving AML, they would be able to reduce holding costs due to adoptions exceeding removal rates. However, if BLM continues to prematurely remove younger horses, they are sabotaging the very strategy they committed to in 2001.
Response		This comment is outside of the scope of the analysis. Within BLM, there are currently no fears that reducing population growth rates and removals through the use of fertility control or other population controls would negatively impact the strategy. Current BLM direction emphasizes an increased use of population controls to reduce removals and subsequent needs for adoption and long and short term holding. This is supported by the research, and modeling work completed by the HSUS. Refer to response to comments 38, 46 and 49 above.
51	Cindy McDonald	Please include a fair analysis of the indirect and direct impacts of prematurely removing weanlings and yearlings from the range and overburdening the BLM “pipeline” as well as estimates and potential savings of wild horses that may be removed from long-term holding due to more restricted supply.
Response		This comment is outside of the scope of the analysis. Refer to responses to comments 38, 46, 49 and 50 above.
52	Cindy McDonald	The BLM fails to include the projected gender ratios of animals to be returned to the range. Please incorporate a verifiable gender ratio of animals to be released to the range.
Response		Since the Proposed Action does not include adjustment to sex ratios, the sex ratio will parallel that which is gathered. With primarily foals, some yearlings and adults located outside of HMA boundaries being removed, the sex ratio of these HMAs would not be affected. It is anticipated that the animals returned to the range would approximate a 50:50 sex ratio with swings up to 5% either way as demonstrated from the gather data from the previous gathers displayed in Appendix B. The New Pass/Ravenswood HMA may reflect a slightly higher percentage of mares in the population. No sex ratio adjustment is currently planned.
53	Cindy McDonald	BLM argues that the Proposed Action will not “crash the population” because they project 109 mares will escape gather and therefore, fail to be treated with fertility control. Many times BLM has released more mares to studs due to citing that studs tend to evade capture more than mares. Please explain how BLM now believes that the capture evasion ratio will be equal in this proposal.
Response		BLM had historically predicted that un-captured animals were comprised mostly of studs, which probably was and still is true to some extent. However, subsequent gathers and inventories have shown that this is not the case across all HMAs and gathers, and current guidance is that horses remaining on the range are comprised of mares and studs that approximate the sex ratio of those gathered. Refer to response 52 above.
54	Cindy McDonald	AMLs differ greatly for each HMA yet BLM fails to incorporate how many of the “noncaptured” mares will be distributed in each HMA, what their projected reproductive contributions will be to a mostly sterile population and how BLM intends to insure “appropriate” numbers are remaining in each HMA to satisfy self-sustaining herd requirements.
Response		The number of un-captured wild horses was estimated by applying an estimated gather efficiency of 80%. It is estimated that approximately half of those would be mares. As described in the EA, the PZP-22 vaccine is not effective the year after application, is 94%

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		effective in year 2, 82% in year 3 and 64% in year 4. Because the vaccine is not 100% effective and is reversible, these HMAs would not be sterile, and would continue to exist and increase – but at slower levels than without fertility control application. The number of mares un-captured in each HMA could be estimated by subtracting the estimated gather numbers from the estimated population and multiplying by 50% for each HMA in Table 2 of the EA. Inventory flights completed in the future would document the actual number of foals present and the population growth over time in response to the fertility control application.
55	Cindy McDonald	Recently, there has been significant clashes between BLM and the public regarding access to all phases of the gathers, transport and removal of America’s wild horses from public lands including federal court cases challenging BLMs lack of accessibility by both the interested public and journalists. The current proposal fails to provide cite specific analysis of these current trends as well as failing to incorporate site-specific gather locations, times of public accessibility and potential alternatives. Please incorporate a full analysis that addresses the public and media concerns regarding BLMs censorship, blanket closure of public lands, keeping operations on private lands despite a vast availability of public lands, and present site specific legal descriptions of areas the Proposed Actions and Alternatives will be located and a range of alternatives for public and media accessibility.
Response		<p>Working with WH&B is among the most dangerous work the BLM performs. A wide range of potential hazards is inherent to WH&B gather operations. As a result, members of the public attending a WH&B gather are accompanied by a BLM escort. The presence of a BLM escort is intended to ensure the public’s safety as well as the safety of the animals and the gather crew.</p> <p>Current BLM procedure is to schedule Public/Media days throughout the gathers. Refer to Appendix F which includes the BLMs current observation protocols. It is important for the public to understand that the BLM must restrict the numbers of visitors to ensure animal and personnel safety. Large uncontrolled groups of visitors cause animals to become injured or killed during gathers, and can injure or kill BLM and contractor staff. The MLFO has always welcomed the public to gathers, however due to the increased visitation interest, must limit observers according to the current BLM guidance. Holding corral and trap corral locations are not determined until the gather is underway and cannot be pre-determined due to animal location, road condition and weather. It is anticipated that up to three locations of holding corrals on public and private land would be used as well as up to 20 trap locations, primarily on public land.</p>
56	Individual	I do not understand the reason to remove 221 horses from this vast complex and then put them into holding pens where they are crowded like sardines.
		Refer to the Purpose and Need Section 1.2. At no time are gathered wild horses crowded “like sardines”. In short-term holding corral facilities, a minimum of 700 square feet is provided per animal. Long Term Holding Pastures (LTHPs) average 8-10 acres per animal.
57	Individuals	Opposed to the gather. Opposed to removal of 221 wild horses. Stop the gather. The gather is unnecessary. The gather is a waste of tax payer money.
Response		Comment noted.
58	Individuals	The gather is unnecessary since the number of wild horses does not exceed the high level of the AML.
Response		Refer to the Purpose and Need Section 1.2. Conducting the gather and treatment of fertility control now would reduce the numbers of horses that would have to be removed and held in short and long term holding facilities in the future. The populations of two of the four HMAs exceed the upper level of the AML at this time.
59	Paul Bottari	I strongly support removal of excess wild horses in this Head Management Area down to below the AML in order to protect the resource and support the true multiple use of the public lands in the HMA. Allowing excess wild horses beyond the AML takes away from wildlife and

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		livestock users and the damage caused to the resource can take many years to correct.
Response		Comment noted. The BLM appreciates your support for this project.
60	Jim Estill	I think the gather should proceed. Nothing is more important than taking care of the range. The range is what supports, wildlife, livestock and the horses.
Response		Comment noted. The BLM appreciates your support for this project.
61	Individuals	<ul style="list-style-type: none"> The AML is unscientific and it is wrong to claim that the HMAs' 640,000 acres can only sustain 894 to 1,161 horses (550 acres of land for each horse). According to current AMLs there can only be 1 horse for every 550 acres. How are these figures derived?
Response		<p>Refer to the prior gather EAs referenced in Section 1.1 and documents referenced within Section 1.4 of the EA for detail about the AMLs established for these HMAs. The AMLs for all HMAs were established through Final Multiple Use Decisions (FMUDs) issued by the MLFO following completion of Allotment Evaluations or Rangeland Health Assessments and EAs. These AMLs were established following the collection, analysis, and interpretation of many years of monitoring data, which included precipitation, use pattern mapping, trend, production, census/inventory, and carrying capacity analysis, and through coordination with the interested public. The monitoring methods used are well established and documented within the Technical References used by the BLM as well as other land management agencies for vegetation monitoring and assessment.</p> <p>Though it would simplify the process, the BLM cannot apply an equation of "X" number of horses per acre when establishing AML. Per the outcome of Dahl v. Clark (600 F. Supp. 585 Dist. Ct. Nev. 1984), the BLM is required to base AML and removals on "analysis and studies" and per numerous Interior Board of Land Appeals rulings a monitoring program involving studies of grazing utilization, trend in range condition, actual use and climatic factors. Through the assessment of these areas, Rangeland Health Assessments have been completed which have found that not all Standards for Rangeland Health are being met. A great deal of the acreage within these areas consists of steep inaccessible or unproductive land. Many areas support pinyon Juniper communities which also are not highly productive. Given that many of the sites within these HMAs produces 20 lbs to the acre (or less) of perennial grasses and that wild horses require 10-20 lbs of forage per day, one can see that it requires several hundred acres per animal to be supported on an annual basis. These rangelands must also supply forage and habitat to many important species of wildlife and livestock while maintaining sufficient cover to protect soils and prevent erosion.</p> <p>An AML range was established for the HMAs within the Complex (with the exception of the New Pass/Ravenswood HMA), where the upper number represents the maximum population for which thriving natural ecological balance would be maintained. The lower range represents the number of animals to remain in the Complex following a wild horse gather in order to allow for a four year gather cycle and prevent the population from exceeding the established AML between gathers. <i>"We interpret the term AML...to mean that "optimum number" of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range"</i> (109 IBLA 119 API 1989). Monitoring since establishment of the AMLs indicates that these AMLs continue to be valid and no data exists to indicate that increases to the AMLs are required at this time.</p>
62	Individuals	<ul style="list-style-type: none"> HMA's areas ARE to be primarily for wild horses- not over a 2467 private cattle and up to well over 3476 cattle .. Designate such areas to be managed principally for wild horse herds under 43 C.F.R. 4710.3-2. With the enactment of the Wild Free-Roaming Horse and Burro Act Congress specifically

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		designated areas where wild horses and burros were found in 1971 to be areas that would continue to be devoted "PRINCIPALLY" to wild horses and burros,
Response		<p>Wild Horse and Burro <u>Ranges</u> are designated through the land use planning process. They are managed <i>principally, but not necessarily exclusively</i>, for wild horses and burros. To be considered for designation as a Wild Horse or Burro Range, the HMA must have unique herd characteristics, outstanding viewing opportunities, unique landscape, or significant historical or cultural features.</p> <p>BLM manages four WH&B Ranges: the Nevada Wild Horse Range (1962), the Pryor Mountain Wild Horse Range (Montana, 1968), Little Bookcliffs (Colorado, 1980), and the Marietta Burro Range (Nevada, 1991). Wild Horse and Burro Ranges require a Secretarial designation which is beyond the scope of this EA.</p> <p>Neglecting to manage HMAs as multiple use area would not be in conformance with the existing land use plan and is contrary to the BLM's multiple-use mission as outlined in the 1976 Federal Land Policy and Management Act (FLPMA), and also would be inconsistent with the WFRHBA and the Public Rangelands Improvement Act of 1978 (PRIA). It was Congress' intent to manage wild horses and burros as one of the many uses of the public lands, not a single use. Therefore, the BLM is required to manage wild horses and burros in a manner designed to achieve a thriving natural ecological balance between wild horse and burro populations, wildlife, domestic livestock, vegetation and other uses. However, the BLM may designate specific herd management areas to be managed principally, but not necessarily exclusively, for wild horse or burro herds. While designation doesn't necessarily change how the HMA will be managed, it does recognize the special role wild horses or burros have in the area.</p> <p>Refer to Section 3.3 of the EA and applicable sections of the previous EAs to review the livestock permitted in these areas. There are not 2467 or 3467 cattle permitted in these HMAs. Actual use is reflected in Animal Unit Months which are defined as the amount of forage necessary for the sustenance of one cow or its equivalent for one month. Approximate actual use for 2009 for livestock use within the HMAs totaled 21,223 Animal Unit Months, whereas the Actual Use for wild horses for the same period totaled 9.960 Animal Unit Months (adult animals only)</p>
63	Individuals	<ul style="list-style-type: none"> • BLM is illegally removing, harassing injuring, killing protected wild horses and committing fraud and illegal acts by destroying wild horses they were sworn to protect. • Removing any horses is unacceptable and goes against the 1971 free roaming horses and burros act. • Horses need protection from the Dept Of Interior/BLM and their murderous illegal plans. • The BLMs wiping out horse herds is a violation of the 1971 Free Roaming Wild Horse and Burro Act.
Response		<p>The Proposed Action as described and analyzed within the EA would not "wipe out" these wild horse herds. Nor is conducting a gather to remove excess wild horses and apply fertility control illegal or in violation of the WFRHBA. Refer to section 1.4, the WFRHBA and FLPMA. Specifically: <i>Where the Secretary determines . . . that an overpopulation exists . . . he shall immediately remove excess animals from the range so as to achieve appropriate management levels. Such action shall be taken . . . until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation.</i> The law also provides that determinations will be made "whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels) [emphasis added]" FLPMA amended the WFRHBA with "<i>In administering this Act, the</i></p>

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		<p><i>Secretary may use or contract for the use of helicopters or, for the purpose of transporting captured animals, motor vehicles. Such use shall be undertaken only after a public hearing and under the direct supervision of the Secretary or of a duly authorized official or employee of the Department”.</i></p> <p>The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) also addresses this issue with the direction to “<i>continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values</i>”.</p> <p>The Food and Drug Administration (FDA), The Humane Society of the United States (HSUS), and animal care committees all carefully review protocols for PZP use, and more than 20 years of data, carried out under these set of rules, clearly show that wild horses are neither injured by this drug, nor do aberrational behaviors occur as a consequence of its application. Oversight by The Humane Society of the United States assures that the vaccine is used only to slow reproduction and may not be used for the extermination of entire herds. PZP is designed to bring about short-term infertility and is reversible, reduces the need for gathers and preserves the original gene pool in each herd (Kirkpatrick et al. 2010). The HSUS strongly supports an increase in the use of fertility control – specifically the Porcine Zona Pellucida (PZP) immunocontraception vaccine . . . to slow population growth (HSUS, 2010).</p>
64	Individuals	<p>The gather would bring the number of wild horses in these HMAs to 862 wild horses. Horses are rapidly becoming extinct in the wild. At this rate they will all be gone by the end of 2011.</p> <p>The BLMs plan will destroy the herd.</p> <p>Leaving their populations at such dangerously low numbers will seriously threaten their viability, possibly contributing to inbreeding and compensatory reproduction. By eradicating the wild horses from this HA, the BLM is eliminating one of the multiple uses of viewing and enjoyment of wild horses by the public.</p> <p><u>Eradicating the horses altogether is an inappropriate violation of the power of the BLM</u></p>
Response		<p>Eighty percent of the existing populations would be returned to these HMAs. Genetic analysis indicates that the genetic variability of these herds is high and no danger if inbreeding exists at this time. Refer to Section 3.2 of the EA and Table 1 in Appendix D. The claim that the Proposed Action would eradicate these herds or cause these herds to become extinct is unfounded. There will be many wild horses within these HMAs for viewing opportunities for generations to come. Refer also to response to comment 63 above.</p>
65	Individuals	<ul style="list-style-type: none"> • The use of PZP has unintended consequences that prove to be very hard on the horses, counter productive to controlling population and very expensive in the short and long run for tax payers. (Portions of comments 66-69 were extracted from a summary the individual states was compiled by Ginger Kathrens). • Current studies are not conclusive on the impacts of PZP. The impacts of treating younger mares are undetermined and may contribute to long term sterilization. Long-term reproductive health will be affected. The impacts are scientifically uncertain. • The proposal fails to rely on current scientific research that provides preliminary results of the cumulative or negative impacts of PZP immunocontraception control.
Response		<p>These claims are “without merit”, and the cost of the application of fertility control is a fraction of the gather and holding costs that would be incurred without treatment. Treating herds to</p>

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		<p>reduce population growth rates is less intrusive than the alternative which would include large gathers and removals of wild horses to holding (Holly Hazard HSUS Chief Innovations Officer, Pers. Comm. 2010). <i>“This work should immediately be expanded to as many herds as possible as an alternative to gathers and long term holding. With an efficacy rate of over 90%, a comprehensive contraception program could dramatically reduce the financial burden on the agency and allow the BLM to once again focus its resources and efforts on range management programs”.</i> (HSUS, 2010).</p> <p>The vaccine has been studied for more than 30 years, and its effects are well known. In deer and wild horses, the best studied species, the contraceptive effects of PZP are reversible even after several consecutive years of treatment (in horses, up to at least five years). The side effects of PZP are very limited – and not all of them bad. PZP does not extend breeding cycles in wild horses (HSUS 2009)</p> <p>Ransom et al. (2010) found no differences in how PZP-treated and control mares allocated their time between feeding, resting, travel, maintenance, and social behaviors in 3 populations of wild horses, which is consistent with Powell’s (1999) findings in another population. Likewise, body condition of PZP-treated and control mares did not differ between treatment groups in Ransom et al.’s (2010) study. Turner and Kirkpatrick (2002) found that PZP-treated mares had higher body condition than control mares in another population, presumably because energy expenditure was reduced by the absence of pregnancy and lactation. Refer also to Section 3.2 of the EA for additional information provided on the effects of PZP as well as responses to Comments 38, 46, 49 and 63 above and 66 below.</p> <p>Additional scientific literature has been cited in Section 3.2 of the EA.</p>
66	Individual	<p>Mares given PZP-22 will continue to cycle and continue to be bred by stallions causing additional stress to the mares.</p> <p>A recent study showed that treated mares received 54% more reproductive behaviors from stallions than the untreated mares⁵⁶. The cumulative effects of this practice are unknown and could negatively impact the natural social behavior and band dynamics in the HMA. The EA does not provide a reference to current scientific literature.</p>
Response		<p>Refer to response 65 above. Kirkpatrick et al. (2010) note that wild horses do not have the same ovulatory patterns as domestic horses, and that wild horses have well-defined breeding seasons (usually from about late March until July, but this will vary somewhat from herd to herd). Wild mares do not extend their breeding season if they do not become pregnant. Keiper and Houpt (1984) also showed this for Assateague horses. This does happen, however, in deer (McShea et al. 1997) but not with wild horses.</p> <p>Kirkpatrick et al. (2010) continues: Wild horses do not come into estrus every month, whether or not they have been treated with a contraceptive. They have a breeding season that covers April through July. Many wild mares have but a single estrous cycle and some have none in a given year, but they are highly seasonal and do not ovulate year-round, or even half the year. The implication of the question is that by treating wild horse mares with PZP, they will continue to cycle throughout the year, and that this will cause stallion "unrest," aggression, and potential injury. By contrast, documented evidence shows that mares will not continue to cycle if they do not conceive, at least beyond the normal 3-4 month breeding season.</p> <p>Kirkpatrick et al. (2010) conclude: We do know that traditional time budget issues, as well as hierarchies and band fidelity, are not affected by PZP application. We also know that</p>

No.	Commenter Name	Comment
		<p>aggressiveness and aberrational behaviors are not caused by PZP use. Perhaps, however, there may be a subtle change in daily routine. However, the larger question is, even if subtle alterations in behavior may occur, this is still far better than the alternative of wild horses being rounded up, bands broken apart, and all of the other negatives that go with traditional management.</p> <p>Kirkpatrick et al. (2010) also point out that casual observation of herds are subjective and not accurate. <i>“Systematically collected data, reviewed by other scientists, accepted as legitimate, treated appropriately statistically, and published in a recognized journal is the only acceptable means for arriving at generalizable, accurate behavioral information”.</i></p>
67	Jessica Johnston	<p>Under the current proposal, forage allocations (AUMs) are distributed 24% for the wild horses, and 76% for livestock. <i>Federal Land Policy and Management Act of 1976, and Code of Federal Regulations (CFR) at 43 CFR §4700. (b) Wild horses and burros shall be considered comparably with other resource values in the formulation of land use plans;</i></p> <p>The EA fails to clearly disclose the total AUMs permitted in the combined HMAs. The data provided is insufficient and does not provide needed information by referring to previous EA's.</p> <p>The EA does not reflect “comparable“ allocations for the wild horses and burros, and is inconsistent with the Wild Free Roaming Horse and Burro Act or Federal Land Policy and Management Act.</p>
Response		<p>Refer to response to comment 96. The permitted AUMs within the HMA and the Actual Use by livestock within the HMAs was provided within the Affected Environment portion of Section 3.3 for the interest of the reader and per H 1790-1, the BLM NEPA handbook, to describe the existing condition and trend of issue-related elements of the human environment that may be affected by the Proposed Action. Neither the WFRHBA nor FLMPA require the equal allocation of wild horses and livestock on public lands.</p>
68	Individual	<p>The one year drug is most likely to produce the best results when given in late winter and early spring, yet the majority of the wild mares receiving the drug are rounded up in the summer and fall. It is likely that the spike in out-of-season births (fall and even winter) we saw in the Pryors to PZPed mares was due to the drug being given at the wrong time of the year.</p>
Response		<p>The Proposed Action includes treatment in December and January – within the preferred window for treatment. Kirkpatrick et al., 2010 addresses the issue of out of season foaling: Available data from 20 years of application to wild horses contradicts this claim (Kirkpatrick and Turner 2003). A database of 178 horses researched over an eleven year period on at the Assateague Island, reveals that there is no evidence of late foals being born among treated mothers. That corroborates published work (Kirkpatrick and Turner 1983), where it was demonstrated that Pryor Mountain wild horses did not extend their season of ovulation even when placed on high planes of nutrition. Mares do not extend their breeding season if they do not get pregnant. There are some indications that seasonal ovulatory patterns in mares are genetically controlled.</p> <p>In the Pryor Mountain Wild Horse Range, the normal foaling period has been well documented (EA #BLM MT010 FY05 -16, figure 10) to primarily take place in May and June, with limited foaling known to happen outside this window, from February to September. Thus, later foaling dates are not considered abnormal.</p>
69	Darynne Jessler	<p>PZP-22 is an acceptable alternative to population control in wild horse herds when you have an over population of wild horses.</p>

No.	Commenter Name	Comment
		<p>There is a time and a place when PZP could be used if the parameters below were adhered to:</p> <ol style="list-style-type: none"> 1. The drug can only be remotely delivered at the right time of the year. 2. The herd does not have a skewed sex ratio favoring males. 3. The herd is genetically viable (i.e. at least 200 adult breeding animals).
Response		<p>Refer to the Purpose and Need Section 1.2 of the EA. The use of PZP is appropriate for all free-ranging wild horse herds. The long-term goal is to reduce or eliminate the need for gathers and removals (Kirkpatrick et al. 2010).</p> <p><i>“The HSUS strongly supports an increase in the use of fertility control – specifically the Porcine Zona Pellucida (PZP) immunocontraception vaccine – and sex ratio adjustments to slow population growth. This work should immediately be expanded to as many herds as possible as an alternative to gathers and long term holding. With an efficacy rate of over 90%, a comprehensive contraception program could dramatically reduce the financial burden on the agency and allow the BLM to once again focus its resources and efforts on range management programs”</i> (HSUS 2010). None of the target HMAs have sex ratios that have been adjusted to favor males at the present time. Refer to response to comment 64 above pertaining to genetic diversity.</p>
70	Individuals	<p>Opposed to a plan to apply infertility drugs to mares in the Callaghan Complex and New Pass/Ravenswood Herd Management Areas and to the removal of 221 wild horses from the same HMA.</p>
Response		<p>Comment noted.</p>
71	Individuals	<p>Lack of scientific basis to inoculate large numbers of females with fertility control, since the horses were treated in recent years and consequences to these herds are unknown.</p> <p>Additional fertility control should not be administered until the proper research and study are conducted.</p>
Response		<p>Per Kirkpatrick et al. (2010): PZP use in wild horse herds has been studied extensively for more than two decades, with papers published in peer-reviewed scientific journals by experienced reproductive physiologists, equine scientists, wildlife biologists, geneticists, and animal behaviorists, providing a portrayal of safety, high efficacy, and absence of long-term behavioral, physical, or physiological effects from the vaccine. This data is of scientific merit, supported by field data, with statistically adequate sample sizes. Data was collected by trained, unbiased individuals, who adhere to established research methodology within his or her respective field. Fertility control on wild horses has been studied in dozens of herds across the United States.</p> <p>Safety data has been accumulated over 20 years. It essentially says there are no short- or long-term health problems of any kind, and that the vaccine is reversible, unless the mare is treated for more than five consecutive years.</p> <p>Fertility control is generally viewed as humane (Reiter et al. 1999), is safe and reversible (Kirkpatrick and Turner, 2002), and has been shown to successfully complement other methods of population control for wild horses (Garrott 1991, Garrott et al. 1992, Gross 2000, Hobbs et al. 2000).</p> <p>The vaccine has been studied for more than 30 years, and its effects are well known. In deer and wild horses, the best studied species, the contraceptive effects of PZP are reversible even after several consecutive years of treatment (in horses, up to at least five years). The side effects of PZP are very limited – and not all of them bad. PZP does not extend breeding cycles</p>

No.	Commenter Name	Comment
		in wild horses (HSUS, 2009).
72	Lisa LeBlanc	Population estimates in relation to the effectiveness of PZP: The EA has stipulated that, in 2007, the post-gather estimates for the New Pass/Ravenswood population was between 208 & 268, yet the EA estimate for 2010 cites the population at 504 animals within this HMA. Based on the high end of AML, this is an 88% increase in population estimates in only 3 years and after 58% of those animals released in 2007 had been treated with PZP. If a 20% per annum population increase were estimated without consideration of PZP, the population for this HMA should only be hovering at or around 405 animals.
Response		Refer to Section 3.2. The post gather estimated population was 208-268 in November 2007. The following spring, the population would have increased by an estimated 17.5% to 244-315 wild horses. A flight in September 2008 resulted in a direct count of 326 adults and 81 foals or 20% foals observed in the population (407 total). Based on these sightings, there were approximately 85 additional horses observed in the 2008 population than estimated which could be attributed to either horses that escaped captures in 2007 or horses that moved into the area from adjoining HMAs (Clan Alpine or Augusta Mountains). This represents approximately 68 more wild horses present in the post gather population than estimated. The 2009 flight resulted in a direct count of 394 adults and 50 foals which comprised 11.2% of the population. Based on the 2008 and 2009 inventory flights, the actual post gather population was likely closer to 336, with 92 of these (27.3%) treated with fertility control.
73	Lisa LeBlanc	The population estimates, after the Callaghan gather in 2008, left a post-gather estimate of 343 - 349 animals. Yet the population increase for 2010 was estimated at 579 - a bit over a 66% increase in a 2 year period. Again, if a 20% per annum population increase is estimated, the Callaghan HMA numbers should be less - around 502 animals - and infertility should have brought the population down further, particularly when half those released - 121 Mares - were vaccinated with PZP.
Response		<p>The 2009 post gather population within the Callaghan Complex was estimated to be 343-349 wild horses. The post foaling population would have increased by approximately 17.5%, resulting in an estimated 419 wild horses. As shown in Section 3.2 of the EA, two of the three HMAs reflected additional wild horses observed during the September 2009 inventory, which is not unusual. The foals represented an average of 16.9%. The total number observed during the direct count was 525 with 87 additional adults observed than anticipated post gather. The actual post gather population likely approximated 436 animals rather than 349, with approximately 193 un-gathered rather than 100-106. 121 or 27.7% of these would have been comprised of treated females, not half as noted in the comment above.</p> <p>Observing more horses than anticipated during a post gather flight is a common occurrence, as wild horses can be missed during gathers when hiding in trees or other topography or if visibility is low. The 2010 population of 579 was based on an increase of 11% for the first year of effective fertility control. The 11% estimate was derived based on other "first year" flights of HMAs under fertility control treatment, and the estimated number of wild horses treated compared to untreated.</p>
74	Lisa LeBlanc	A concern is the long-term effects of repeated inoculation with chemical infertility agents on the health of the Mares subjected to them.
Response		Refer to response 71 above.
75	Lisa LeBlanc	I understand there is an interim for PZP to be considered effective. But it doesn't appear that effectiveness was considered in the overall population increase estimates. While there is a concern among various agencies of a tendency to 'undercount' Wild Horse and Burro populations, there is an equal concern among members of the interested Public that the percentages and estimates catalogued in Environmental Assessments may also create top-heavy populations in order to facilitate removals. WinEquus modeling, while a somewhat

No.	Commenter Name	Comment
		modern and scientific approach to estimating populations, is flawed. It assumes the perspective of not only longevity but of permanence; EA's rarely quantify numbers removed from prior populations or on-the-range mortality but instead estimate populations as one long continuous & uninterrupted flow.
Response		Actual gather figures from previous gathers were referenced in the EA and utilized in the WinEquus modeling. Refer to the WinEquus modeling discussion in Section 3.2 and Appendix D.
76	Lisa LeBlanc	Another aspect, touched on in the EA, is the low percentage of gather-related deaths. While this may be true historically or geographically, recent gathers have rendered alarming increases in catastrophic injuries and summary euthanasia as a result. Some animals have been euthanized on the range, even before reaching trap sites; others have reacted violently to their circumstances, causing themselves mortal injury. Any physical imperfection is a rendered judgment, regardless of how long or how well the animal has lived with it, and death by euthanasia is the only logical conclusion. Still others have been destroyed simply because they were deemed too old to make the journey by transport. Daily tallies of animals gathered have included a daily death toll - now more the rule than the exception.
Response		The BLM Wild Horse and Burro Specialists on site at gathers adhere to the Euthanasia policy IM 2009-041. Should animals meeting the criteria be experienced out on the range, they may be euthanized on-site to avoid the stress of capture to an already weak animal. This occasionally occurs if a horse has a pre-existing injury that is severe and causes pain, or animals that are old, in poor body condition or very weak. As discussed in Section 3.2 of the EA, injury and sometimes death occur after animals are captured, but the occurrence is rare. Physical imperfections are evaluated and if they meet the criteria in the Euthanasia policy, then euthanasia may be considered. Oftentimes, if an animal with a pre-existing healed injury is captured, it is evaluated. If the animal is not in pain and is able to continue to live on the range with a good quality of life, it is released and not euthanized. The BLM evaluates the most humane action when assessing wild horses, particularly older horses that have excessively worn teeth or are unable to maintain acceptable body weight. Please refer to the effects analysis in Section 3.2 for mortality and euthanasia figures from recent MLFO gathers. Gather related deaths account for 0.50% or less of horses gathered during the gather operation.
77	Lisa LeBlanc	There is a method of gather known as "in-house". Published accounts of "in-house" gathers intimate a genuine care & concern for the animals gathered, a more guarded approach by Bureau wranglers, more concerted attention by the veterinarian & a less hectic "pressure" utilized by the helicopter pilot. "In-house" also appears to be a more cost effective approach to gathers, as participants receive regular wages as opposed to 'per head' gratuities for private contractors.
Response		There is no data to suggest that BLM in-house gathers result in fewer injuries or deaths. Cost comparisons have been completed and once the helicopter, personnel and other associated costs are considered, in-house gather cost is comparable to contracted gathers. Additionally, the Contractor has available all equipment and trained personnel, whereas the BLM does not typically maintain the large amounts of corral panels, netting, stock trailers and experienced crew needed to safely complete gathers. Select offices routinely complete in-house gathers, but have the equipment and personnel necessary. Regardless of gather method, BLM staff are on-site at all times to ensure proper treatment of the animals during the gather and to document the gather activities.
78	Lisa LeBlanc	In any post-gather releases, I would ask that priority be given to the older - late teens and 20's - Stallions and Mares. They are the least likely to be adopted and most likely to be euthanized because of age-related appearances; capture is stressful enough but transport to a facility will be an additional stress on them and could shorten their life expectancy significantly. Their productivity on the range is limited, but so is their time.

No.	Commenter Name	Comment
Response		<p>Comment noted. The goal of the gather is to release all animals back to the range with the exception of most or all weanlings, some yearlings and wild horses located outside of HMA boundaries. The BLM typically releases older horses that are healthy enough to enjoy an acceptable quality of life on the range and would not suffer due to the inability to travel or forage due to age related issues such as excessive tooth wear or loss.</p>
79	Christine DeCarlo	<p>PZP contraception is not completely reversible in mares. Contraception can only be reversed when the antibody titer decreases to 50-60% of the positive reference sera.¹ Mares treated for 7 consecutive years did not return to viable fertility.^{2,3} Long term treatment with PZP has inherent negative potential for these herds. I can not support the proposed action which would keep mares vaccinated with PZP consecutively for most of their reproductive life (revaccination every 2-3 years). Mares taken out of the herd, administered PZP, and returned would never reproduce. The EA plan would capture 80% of the herd, and vaccinate all mares captured, this would be catastrophic to sustaining the herd but also to genetic variation of the species.</p> <p>There is a lag time for returning to fertility after PZP for consecutive use in mares of less than the aforementioned 7 years. 3 consecutive years of PZP treatment can mean a delay in pregnancy of 1-8 years (mean of 3.7 years).^{2,3} In domestic mares it took 8.5 months to reverse effects of PZP after one year of treatment.⁴ Because equines are a seasonally polyestrous species with long days (May, June, July in North America) being their natural breeding season, this equates to a minimum of one year to a maximum of 8 years without new foals for the majority of herd. The longer mares are kept barren the greater the risk of being permanently incapable of reproducing.</p> <p>This, combined with the plan to remove the young stock, (weaned foals and yearlings) will contribute to an aging mare population. The anatomy of the female reproductive organs is strongly influenced by age.⁵ Young, healthy mares (3-12 years) ensure the highest per-cycle pregnancy rate and the lowest pregnancy loss rate.⁶⁻¹⁰ Estimates of the embryonic loss rate between fertilization and day 10 post fertilization is 9% for young mares compared to 60 to 70% for aged mares.^{8,11-13} Older maiden mares (> 12 years) are susceptible to post-breeding endometritis and are therefore difficult to get pregnant.¹⁴ Endometrial glandular degenerative changes and stromal fibrosis (endometrosis) are an inevitable consequence of aging.¹⁵ Often, an older maiden mare has an abnormally tight cervix, which fails to relax properly during estrus so that fluid is unable to drain and accumulates in the uterine lumen.¹⁶ Once the mare is bred, the fluid accumulation is aggravated because of poor lymphatic drainage and impaired myometrial contraction compounded by the tight cervix.¹⁴</p> <ol style="list-style-type: none"> 1. Liu, I.K., Turner, J.W., Jr., Van Leeuwen, E.M., Flanagan, D.R., Hedrick, J.L., Murata, K., Lane, V.M. & Morales-Levy, M.P. (2005) Persistence of anti-zonae pellucidae antibodies following a single inoculation of porcine zonae pellucidae in the domestic equine. <i>Reproduction</i> 129, 181-190. 2. Kirkpatrick, J.F. & Turner, A. (2002) Reversibility of action and safety during pregnancy of immunization against porcine zona pellucida in wild mares (<i>Equus caballus</i>). <i>Reprod Suppl</i> 60, 197-202. 3. Kirkpatrick, J.F., Rowan, A., Lamberski, N., Wallace, R., Frank, K. & Lyda, R. (2009) The practical side of immunocontraception: zona proteins and wildlife. <i>J Reprod Immunol</i> 83, 151-157. 4. Liu, I.K., Bernoco, M. & Feldman, M. (1989) Contraception in mares heteroimmunized with pig zonae pellucidae. <i>J Reprod Fertil</i> 85, 19-29. 5. Dyce, K.M., Sack, W.O. & Wensing, C.J.G. (1987) <i>Textbook of Veterinary Anatomy</i>. (W. B. Saunders Company, Philadelphia, PA). 6. Hearn, F.P.D. (2000) Reproductive Efficiency, in <i>Equine Breeding Management and Artificial Insemination</i>, Edn. 1st. (ed. Samper, J.C.) 267-281 (W. B. Saunders Company, Philadelphia, PA). 7. Ginther, O.J. (1992) <i>Reproductive Biology of the Mare</i>, Edn. Second. (Equiservices, Cross Plains, WI).

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		<p>8. Ball, B.A., Little, T.V., Weber, J.A. & Woods, G.L. (1989) Survival of day-4 embryos from young, normal mares and aged, subfertile mares after transfer to normal recipient mares. <i>J Reprod Fertil</i> 85, 187-194.</p> <p>9. Waelchli, R.O. (1990) Endometrial biopsy in mares under nonuniform breeding management conditions: Prognostic value and relationship with age. <i>Can. Vet. J.</i> 31, 379-384.</p> <p>10. Evans, M.J., Hamer, J.M., Gason, L.M. & Irvine, C.H. (1987) Factors affecting uterine clearance of inoculated materials in mares. <i>J Reprod Fertil Suppl</i> 35, 327-334.</p> <p>11. Ball, B.A. (1988) Embryonic loss in mares. Incidence, possible causes, and diagnostic considerations. <i>Vet. Clin. North Am. Equine Pract.</i> 4, 263-290.</p> <p>12. Ball, B.A. (2000) Reduced Reproductive Efficiency in the Aged Mare: Role of Early Embryonic Loss, in <i>Recent Advances in Equine Reproduction</i>. (ed. Ball, B.A.) Document No. A0201.0300 (International Veterinary Information Service, Ithaca, NY).</p> <p>13. Brinsko, S.P., Ball, B.A., Miller, P.G., Thomas, P.G. & Ellington, J.E. (1994) In vitro development of day 2 embryos obtained from young, fertile mares and aged, subfertile mares. <i>J Reprod Fertil</i> 102, 371-378.</p> <p>14. Pycock, J.F. (2000) Breeding Management of the Problem Mare, in <i>Equine Breeding Management and Artificial Insemination</i>, Edn. 1st. (ed. Samper, J.C.) 195-228 (W. B. Saunders Company, Philadelphia, PA).</p> <p>15. Ricketts, S.W. & Alonzo, S. (1991) The effect of age and parity on the development of chronic endometrial disease. <i>Equine Vet. J.</i> 23, 189.</p> <p>16. Pycock, J.F. (1993) Cervical function and uterine fluid accumulation in mares. <i>Equine Vet J Suppl</i> 25, 191.</p>
Response		<p>In any gather there is a percentage of mares that will not be caught and either they never get treated or their treatment wears off by the next potential chance to be treated. In most likelihood, not every mare treated one time will be caught next time so repeated/consecutive treatments will not be the standard. BLM can adjust the treatment strategy with subsequent treatments by not retreating some of the mares to avoid a series of consecutive treatments if determined to be necessary through evaluation of gather and post gather population data and herd management strategies outlined in a Herd Management Plan.</p> <p>Per Dr. John Turner, wild horse fertility control researcher via e-mail October 2010: 1) <i>The issue of non-reversibility of PZP effect after 7 years of continuous contraception is taken out of the context of well designed management. The BLM goal is not to treat all mares for 7 years in a row. Younger previously treated mares can be left untreated for at least one cycle of gather/treat, which will allow them to produce foals in that period (ie, her genes have not been removed from the pool). Thereafter, if BLM wishes to keep a given mare infertile continuously, it is not really a problem, but it is unlikely that this can occur, since the percent of mares that can be captured in a given gather is way below the 95% level. (Dr. De Carlo appears to assume that the Assateague model of keeping 95% of mares infertile year after year is applicable to Western herds).</i></p> <p>2) <i>The data to date for Western herds show that 1) the capture rate (therefore the treatment rate) is in the 60-80% range and 2) the efficacy of the 2-yr vax, even ideally, leaves 15-25% of mares fertile in year 2 and >30% fertile in year 3. Thus, Dr. DeCarlo's 'catastrophic' impact of fertility control in any herd is overstated. The likelihood is that GROWTH rate can not even be zeroed, let alone a reduction in population, at least until treatment efficacy and level of access to mares increases.</i></p> <p>3) <i>Note that the Assateague data proved that it took 16 years of intensive treatment (95%) to reduce that population by 34%. Theoretically, with persistent pursuit of this program on Assateague, it will take another 30 years to reach the threat of herd extinction.</i></p> <p>4) <i>The issues of reproductive problems of older mares are essentially correct, but these points are not relevant to a proper management plan. This is because older mares that have contributed to the gene pool several times should not be reproducing anyway. The key is to limit reproduction in</i></p>

No.	Commenter Name	Comment
		<i>younger mares so that they have only one or 2 foals in their first decade and thereafter experience contraception for as long as the BLM needs to limit population growth.</i>
80	Jessica Johnston	Off range management is not the intention of the WFRHBA. The BLM currently manages more horses in government holding facilities than on public lands. Each and every proposed roundup proposal must provide alternatives and critically consider plans that balance uses between wildlife, wild horses, and livestock that incorporates principles of on range management that protect all public resources.
Response		This comment is outside of the scope of the analysis. A range of Alternatives was considered within the current and previous EAs which proposed completing gathers in these HMAs. Forage allocation decisions have already been made for these areas. Refer to responses to comments 95, 96, 111, and 129 below.
81	Jessica Johnston	Since the Bald Mountain HMA meets the accepted AML range the proposed action is not substantiated.
Response		The goal of the proposed management activity is to gather and treat/retreat as mare mares as possible within the targeted HMAs while limiting removals to a level to achieve the low range of AML for each HMA. Refer to Table 2 of the EA.
82	Individual	The current EA plan in relation to mare PZP contraception will egregiously affect any future reproductive capacity of preserving our national heritage species (PL 92-195). Specifically, the herd at the Callaghan and New Pass/Ravenswood Complex is in peril of any future reproductive viability if PZP is administered to the quantity of mares, combined with the number of years, proposed in this EA.
Response		Refer to response 54 and 63-67 above.
83	Individual	It is the will of the American people to preserve America's wild horses and burros and assure they are managed on their range in a humane and minimally-intrusive manner that preserves their wild and free-roaming behavior.
Response		Comment noted.
84	Individual	The horses live in areas where little else thrives. They are not bothering anyone by staying in the few areas we have left them!
Response		The public lands associated with HMAs provide habitat to numerous native wildlife species which is being impacted by excessive wild horse populations. Proper wild horse population management is needed to assure a thriving natural ecological balance. Refer to the Purpose and Need in Section 1.2 of the EA.
85	Individual	You've illegally sold off much of their land to developers to trash for drilling, houses, etc.
Response		This comment is outside of the scope of the analysis. None of the land within the proposed gather area has been sold by BLM to private individuals or corporations. Any exploration or development for minerals, oil, gas or geothermal resources must go through the proper administrative procedures and environmental documentation.
86	Individual	The BLM uses birth control on most mares further endangering their future survival as well as creating an artificial sex ratio of more males than females which endangers the females who will have to fight off the stallions who outnumber them.
Response		Refer to comments 54, 63-67 and 71 above. The Proposed Action or Alternative 1 does not include the modification of sex ratios to favor males.
87	Individual	Helicopter gathers in late winter and spring are not safe. Conducting this roundup in December is inhumane and unnecessarily subjects horses to undue dangers and hardships. Mares due to foal or those with tiny foals cannot be stressed with the long runs inherent in helicopter roundups. We saw what happened just recently in Calico and Tuscarora.
Response		Refer to the description of the Proposed Action at Section 2.2 and the Environmental Consequences in Section 3.2. A Veterinarian will be on site at the gather to observe and evaluate animal health, providing recommendations to the BLM gather staff and COR. Wild

No.	Commenter Name	Comment
		<p>horses are allowed to travel at their own pace for most of the distance to the gather corrals. Refer also to the SOPs in Appendix A. All precautions are taken to ensure that wild horses are gathered safely. Gathers are not conducted during the peak foaling season between March 1 and June 30. Experience gained through many years of gathers has shown that wild horses do well during winter gathers as they are not subject to heat related issues as would be during the summer.</p>
88	Individuals	<p>The use of helicopter to gather horses is cruel, inhumane and dangerous. Animals are abused and harassed. HSUS said that BLM abuses horses during gathers and after and during gelding.</p>
Response		<p>These comments are without merit. The HSUS does not claim that BLM abuses horses during gathers or during gelding. HSUS does not oppose helicopter gathers. The organization recognizes that some injuries and deaths are unavoidable, but is generally critical of those specific incidents that could be avoided, or should have been prevented and is willing to cooperate with BLM to help improve the program (H. Hazard, Pers. Comm. 2010).</p> <p>In any given gather, the direct gather-related mortality averages only about one half of one percent (0.5%), which is very low when handling wild animals. Approximately, another six-tenths of one percent (0.6%) of the captured animals could be humanely euthanized due to pre-existing conditions and in accordance with BLM policy (GAO-09-77). These data affirm that the use of helicopters and motorized vehicles has proven to be a safe, humane, effective, and practical means for the gather and removal of excess wild horses (and burros) from the public lands.</p> <p>Relative to BLM Nevada's Calico Mountains gather, capture-related mortality was limited to 0.002% (4 horses out of the 1,922 captured). However, due to limited forage and water conditions on the range, some of the animals captured were in very thin body condition and had difficulty transitioning to the change in feed at the short-term holding facility or suffered a miscarriage. Many of these animals would likely have suffered cruelly on the range and eventually died from starvation or dehydration. Mortality at the STH facility between February 5 and March 17 totaled 70 WH&B (3.6%). Approximately 30 mares suffered miscarriages (1-2%).</p>
89	Individuals	<p>Harmful effects of the gather were omitted in EA including the harmful effects of social disruption and destruction of family bands that a removal of horses would cause. The EA must examine the social, economic and legal impacts of warehousing of the majority of captured wild horses in holding facilities,</p> <p>The EA downplays the deaths of wild horses that can be expected to result during the helicopter gather and later in holding facilities, due to capture-related trauma and stress of the roundup on heavily pregnant mares due in the Spring, older animals and those with disabilities.</p> <p>Effects also deaths, injuries and harm to wild horses caused during helicopter chases, in which elderly, ailing and disabled horses will be stampeded along with the strong; and illness, injury and deaths in short term holding facilities caused by the stress and trauma of the roundup, loss of freedom and conditions of captivity.</p> <p>The BLM routinely uses helicopter roundups over rugged terrain running horses for up to ten miles, often resulting in trauma, injury and death.</p>
Response		<p>Refer to Section 3.2 of the EA for the analysis of Environmental Consequences associated with the Proposed Action. Because 80% of the population would be released back to the range, the wild horses would be able to re-group into family bands if they chose. Refer to response 88</p>

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		<p>above. Wild horses are not stampeded into the gather corrals, they are allowed to travel at their own pace for most of the distance to the gather corrals. The pilots take extra care of animals with disabilities, aged animals or heavily pregnant mares, by allowing them to travel slowly, or not capturing them at all. Through the Proposed Action, fewer animals would ultimately be removed from the range and need to be held in short or long-term holding in the future. The long-term goal is to reduce or eliminate the need for gathers and removals (Kirkpatrick et al. 2010).</p> <p>The Capture, Treat and Release (CTR) fertility control strategy is a win-win for everyone. Even if some animals experience impacts – this is comparing apples to oranges because it is a matter of looking at either contracepting or gathering and removing. The alternative to gathering and removing in application of fertility control is less intrusive. Fewer animals are removed and band stability can be maintained. The CTR strategy is a significant turning point for BLM, and HSUS supports the effort (H. Hazard, Pers. Comm. 2010).</p> <p>The other victory for horses is that every mare prevented from being removed, by virtue of contraception, is a mare that will only be delaying her reproduction rather than being eliminated permanently from the range. This preserves herd genetics, while gathers and adoption do not (Kirkpatrick et al. 2010).</p>
90	Individual	Please consider other alternatives - such as water traps or horseback roundups during cooler weather, only if absolutely necessary.
Response		The BLM does use these methods when appropriate. They are generally most effective when smaller numbers of animals need to be removed in locations with good road access. These methods were evaluated in the previous EAs completed for these areas which are referenced in Section 1.1 of the EA and available on line for your review.
91	Individual	Stampeding terrified wild horses with helicopters for miles and miles over rocky terrain in extreme summer heat leaves the animals at great risk of roundup-related dehydration, heat stroke, injury and even death.
Response		The proposed gathers are not scheduled for summer, but are scheduled to be completed in December 2010 through January 2011. Refer to response 87-89 above.
92	Individual	<p>In a recent report titled, "Wild Horses: The Stress of Captivity", Dr. Bruce Nook states that victims of roundups die from stress-related illnesses due to the capture, being torn from their families and companions, and the extreme emotional trauma caused by their loss of freedom - - which is so vital to a wild horse. Spontaneous miscarriages and the inability to digest feed properly are also direct results of such stress, not to mention the inability to escape danger once confined and being forced into tight quarters with unfamiliar horses in unnatural captive conditions. Freedom and family are absolutely essential for the well-being of a wild horse and play a key role in their society. Without them, they have no purpose and become shells of their former selves which in turn can lead to health problems as well as fatalities. Dr. Nock's analysis also explains how the stress of captivity can cripple a wild horse's immune system, making them much more susceptible to "natural stressors, like severe weather conditions, biting insects, and so on." Pretty much everything related to captivity is stressful for a wild horse. As Dr. Nook states, the capture and removal of wild horses "is extremely detrimental to their long-term health and soundness." In other words - stress can kill them.</p>
Response		Refer to the Environmental Consequences in Section 3.2 of the EA. Through methods and experience learned through 30 years of gathering wild horses from public lands, the BLM implements the most effective and humane methods in order to reduce stress and injury to wild horses. Dr. Bruce Nock is a tenured neurobiologist at the University of Washington, with faculty appointments in the departments of psychiatry, anatomy and neurobiology. He has authored books on horse training and written articles on natural horsemanship. Though Dr.

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		Nock compiled a detailed account of what he believes is the physiology of a "wild" horse during a gather, it is not based on actual study, or systematically collected and reviewed data, and does not reference actual work in the field completed by other researchers. Refer to responses 87-89 above.
93	Individual	The ranchers should be paying for the grazing lands they get, and the money should be used to create sanctuaries, in the western states, expressly for the horses!
Response		This comment is outside of the scope of the analysis.
94	Individual	Consider improvements to the land which would enable the horses to stay, at a long-term cost to the public of far less than the current unsustainable "holding tank" system.
Response		This comment is outside of the scope of the analysis. Even significant improvements to the amount of forage and water produced in these areas would not preclude the BLM from properly managing these herds and maintaining populations at proper levels through removals and population control such as fertility control.
95	Individuals	The EA does not fully explore/completely omits options/more humane and less intrusive options to mitigate the need for the proposed action. Alternatives to the helicopter roundup should be considered and reviewed in the EA to mitigate the helicopter stampede.
Response		<p>The previous EAs completed for these areas (identified in Section 1.1) explored the options of gathering to the upper end of AML, gather using bait or water trapping, relocation of removed horses to other HMAs, the use of fertility control only to control the population, combining the use of helicopter with bait and/or water trapping, and removal of livestock instead of wild horses. In addition, the current EA explored alternative capture techniques such as net gunning, chemical immobilization, and wranglers on horseback. No other legitimate or reasonable alternatives were brought forward during the comment period.</p> <p>Prior to the passage of the 1971 WFRHBA, mustangers used fixed wing aircraft and motorized vehicles to roundup wild horses and burros with none of the controls we have today. Since the passage of the 1971 Act, all capture and handling activities are conducted in accordance with established Standard Operating Procedures (SOPs). The BLM personnel and APHIS Veterinarian are on site throughout the capture operation to assure humane treatment of the animals.</p> <p>The use of helicopters and motorized vehicles has proven to be a safe, effective and practical means for the gather and removal of excess wild horses and burros from the range. This is demonstrated by the capture of more than 26,000 excess animals over the past 5 years in Nevada alone, with a mortality rate of about one-half of one percent (.5%) which is very low when handling wild animals. Another 0.6% of the captured animals were humanely euthanized due to pre-existing conditions (as an act of mercy and in accordance with the BLM's euthanasia policy).</p> <p>BLM policy prohibits the gathering of wild horses with a helicopter, (unless under emergency conditions), during the period of March 1 to June 30 which includes and covers the six weeks that precede and follow the <u>peak</u> of foaling period (mid-April to mid-May).</p>
96	Individuals	<ul style="list-style-type: none"> • Inappropriate allocation of more resources to livestock than wild horses: • Removal of federally-protected wild horses from their lawfully designated HMA's while awarding several times more cattle AUM's to permittees/livestock industry is evidence that the BLM is not preserving and protecting the wild horses as the law intends. • This is an imbalance of the uses of public land , and wild horses were to have had preference on their HMA's. This is breaking the 1971 Wild Horses and Burro Act. • Livestock get the lion's share of the allocation. Livestock, outnumber wild horses, in most cases by 10 to 1 and in some cases by as much as 100 to 1, cost American taxpayers

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		<p>hundreds of millions a year, some estimate the total costs at close to a billion dollars a year.</p>
Response		<p>This issue is outside the scope of this analysis. Information about the Congress' intent is found in the Senate Conference Report (92-242) which accompanies the 1971 WFRHBA (Senate Bill 1116): <i>"The principal goal of this legislation is to provide for the protection of the animals from man and not the single use management of areas for the benefit of wild free-roaming horses and burros (emphasis added). It is the intent of the committee that the wild free-roaming horses and burros be specifically incorporated as a component of the multiple-use plans governing the use of the public lands."</i></p> <p>Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.</p> <p>Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use and the need to remove excess wild horses from the rangelands:</p> <p><i>b) The Congress therefore hereby establishes and reaffirms a national policy and commitment to:</i></p> <ul style="list-style-type: none"> <i>(1) inventory and identify current public rangelands conditions and trends as a part of the inventory process required by section 1711(a) of this title;</i> <i>(2) manage, maintain and improve the condition of the public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process established pursuant to section 1712 of this title;</i> <i>(3) charge a fee for public grazing use which is equitable and reflects the concerns addressed in paragraph (a)(5) above;</i> <i>(4) continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values;</i> <p>The WFRHBA does not require that wild horse numbers on the range are equal to wildlife or livestock numbers. It is not a matter of choosing to manage wild horses and burros rather than domestic livestock or native wildlife. The law requires the BLM to achieve and maintain a thriving natural ecological balance and multiple use relationship among all the uses of the public lands.</p> <p>Livestock grazing management and wild horse AML decisions have been previously made through documents referenced in the previous EAs completed for these areas (identified in Section 1.1). In Nevada, appropriate management levels of wild horses and burros are generally determined through the multiple-use decision (MUD) process. This process begins with an evaluation of range conditions to assess whether or not management and stocking levels for livestock, wild horses and/or burros, and wildlife are achieving rangeland health objectives. If rangeland health objectives are not being met, changes in management or stocking levels are proposed. Proposed changes are analyzed in an environmental assessment and a proposed multiple-use decision (PMUD) is issued. Proposed decisions are subject to review and protest by parties affected by the proposal. BLM considers all protests filed, and then issues a final multiple-use decision (FMUD) which is subject to appeal. There has been a 61% reduction in authorized livestock use on public lands since 1941.</p>

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		Refer also to response to comment 61 for more information about setting AML.
97	Individuals	BLM continues to eradicate horses in "unsustainable" areas where grazing rights are then handed over to private ranchers.
Response		The MLFO is not eradicating horses in these HMAs. These HMAs have not been determined to be unsustainable. Livestock grazing is a legitimate multiple use of the public lands. Refer to response 96.
98	Sam Welsh	Also, according to Carter's analysis, there is another serious factor in computing livestock actual use data and true forage consumption related to the cow/calf pair BLM and USFS bills for as, current live weight slaughter statistics indicate the AUM formulas still being applied for authorization and billing purposes are based on outdated weight averages that fail to reflect actual use.
Response		This comment is outside of the scope of the analysis.
99	Sam Welsh	Please outline the number of permitted livestock grazing on this HMA in both Animal Unit Months (AUMs) and total number of head at peak and minimum as per the granted allotments.
Response		Refer to Section 3.3 of the EA and the previous EAs completed for these areas which are referenced in Section 1.1 of the EA.
100	Sam Welsh	Cattle are now super size now, which has happened over the past 20 years. They also consume a great deal more forage. BLM needs to disclose accurate figures on the huge amount of forage they are actually consuming and the forage BLM has failed to accurately estimate over the last many years.
Response		This comment is outside of the scope of the analysis. There is no indication that cattle managed within the MLFO are super size. The livestock use within these areas has been allocated through FMUDs issued following the analysis of monitoring data and coordination with the interested public. Refer to the previous EAs completed for these HMAs which are referenced in Section 1.1 of the EA. Refer to response 96 above.
101	Sam Welsh	Please disclose the exact fees charged per AUM for livestock grazing on HMA.
Response		This is outside of the scope of the analysis. The 2010 grazing fee is \$1.35 per Animal Unit Month. The establishment of grazing fees is outlined at 43 CFR 4130.8.
102	Sam Welsh	Why are young cattle not included in cattle counted.
Response		43 CFR 4130.8-1(c) provides that <i>[f]or the purposes of calculating the fee, an animal unit month is defined as a month's use and occupancy of range by one cow, bull, steer, heifer, horse, burro, mule, 5 sheep or 5 goats over the age of 6 months . . . by any such weaned animals regardless of age; and by such animals that will become 12 months of age during the authorized period of use. No charge shall be made for animals under 6 months of age . . . that are the natural progeny of animals upon which fees are paid, nor for progeny born during that period.</i>
103	Individuals	<ul style="list-style-type: none"> • The BLM should reduce the forage allocated to livestock. • Decrease or eliminate farmed animal grazing in affected HMAs pursuant to 43 C.F.R. 4710.5(a); • Current inequities should be rectified. The BLM must transition from managing only for extractive uses to managing the land for the good of the public on the whole and the wildlife, including wild equids, that share this land with overwhelming numbers of privately-owned livestock.
Response		Refer to response 96 above. Closing public lands within HMAs to livestock grazing would be a short-term solution at best. At current estimated growth rates, the wild horse population size in these HMAs would be expected to increase to about 2,200 animals in 5 years. To maintain population size and prevent range damage, the BLM would be required to remove an even larger number of excess

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		<p>wild horses each year.</p> <p>Whether the BLM manages for 27,000 WH&B or 50,000 WH&B on the range, when WH&B population numbers exceed the available food and water, the BLM must remove the excess animals to prevent damage to the range. The greater the number of WH&B on the range, the greater the number which would need to be removed and placed in short term corrals or long term pastures over time at taxpayer expense.</p> <p>The BLM is currently authorized to remove livestock from HMAs <i>“if necessary to provide habitat for wild horses or burros, to implement herd management actions, or to protect wild horses or burros from disease, harassment or injury”</i> under CFR 4710.5. This authority is usually applied in cases of emergency and not for general management of wild horses or burros.</p> <p>Removal of livestock would not be in conformance with the existing Land Use Plan, is contrary to the BLM’s multiple-use mission as outlined in FLPMA and PRIA, and would be inconsistent with the WFRHBA, which directs the Secretary to immediately remove excess wild horses. Additionally this would only be effective for the very short term as the horse population would continue to increase. Eventually the HMAs and adjacent lands would no longer be capable of supporting the horse populations. Removing approximately 221 excess wild horses now and treating released mares with a fertility control vaccine would delay the future removal of horses for several years.</p> <p>The issue of authorized livestock grazing use was previously decided through FMUDs, which are discussed in the previous EAs completed for these HMAs, which are identified in Section 1.1 of the EA. Refer to response 96 above.</p>
104	Individuals	<ul style="list-style-type: none"> • Domestic cattle and sheep destroy our public lands , water , wild life , flora, fauna. • The impact of livestock grazing is not discussed in the EA. • A complete analysis of the impacts of livestock is needed for the combined HMAs. • The BLM has failed to take in to account include the damage that cattle cause. • Cattle need to be removed instead of wild horses. There are too many cattle.
Response		<p>Refer to responses 96 and 103 above.</p> <p>The impact of livestock grazing is outside of the scope of this analysis. All of the grazing allotments within these HMAs have been evaluated through extensive monitoring which was documented in Allotment Evaluations, Rangeland Health Assessments and Monitoring Reports. Decisions to modify livestock grazing have been made in order to ensure progress towards attainment of Land Use Plan and Allotment Specific Objectives and Standards and Guidelines for Rangeland Health. These changes were documented within FMUDs or other Decisions and include reductions in permitted use, changes to season of use, elimination of hot season grazing in riparian areas and other Terms and Conditions.</p> <p>Ranchers are permitted to graze their livestock on the public range for seasonal use, while wild horses and burros live on the public rangelands year-round. Livestock use is controlled through limits outlined in the grazing permits issued to ranchers. Each grazing allotment has a different season for grazing and that depends on the type of forage that the particular allotment sustains. During times of drought and wildfire, the rancher uses less than the number of forage units allotted at his/her own initiative or at the direction from the BLM.</p> <p>Wildlife populations are kept in check through hunting and natural population controls. When wild horse population numbers grow beyond their forage allocation, the BLM must remove the excess numbers to prevent a deterioration of the range (as required by the WFRHBA).</p>

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105	Sam Welsh	The BLM fails to protect Americas wild horses or public lands from private cattle owners and other livestock and their owners and other private interests preying on our public lands. Destroying wild horses areas with private cattle is illegal .
Response		Refer to responses 96, 103 and 104 above.
106	Sam Welsh	Across the board BLM does not adequately control cattle on the public’s land and has not sustainably balanced the use of the “forage”, water and space. This needs to be remedied in the HERE and across the west.
Response		Refer to responses 96, 103 and 104 above. The public is involved in Land Use Planning and during Rangeland Health Evaluations.
107	Sam Welsh	Why are privately owned cattle allowed to damage our public lands and why are they not help accountable for this damage ?
Response		Refer to responses 96, 103 and 104 above.
108	Individuals	<ul style="list-style-type: none"> • Open up the fenced off water sources to all wildlife, including wild horses and burros. • Remove the thousands of miles of fencing that limits the free-roaming behavior of wild horses and burros. • Cattlemen fence off the water holes
Response		This comment is outside of the scope of the analysis. Water sources on public lands have not been fenced from wild horses or wildlife. Many of the waters in these areas exist on private land and/or water rights are held by the local ranchers.
109	Individuals	<ul style="list-style-type: none"> • Release the healthy wild horses in holding to the millions of acres taken away from them since Congress passed the Wild Horse and Burro Act. • The BLM has no credibility on any matters regarding wild horses as they have illegally wiped out over 111 protected herds. • The BLM has systematically stolen over 20 million acres herd areas from the wild horses and burros over the past 39 years, shrinking their federally-designated habitat by 40%, including a 2.4 million acre loss between 2005 and 2009 alone.
Response		<p>This comment is outside the scope of the analysis. The HMA boundaries of the HMAs involved are identical to the original herd area boundaries.</p> <p>The WFRHBA did not require the BLM to set aside a specific amount of acreage for WH&B use. However, WH&B management is limited to within those areas of the public lands where they were found in 1971. Today, the BLM manages WH&B on about 62% of the original herd area acreage.</p> <p>Reasons that 19.4 million acres of the original herd area acreage is not managed for WH&B use today include:</p> <ul style="list-style-type: none"> • 5.7 million acres – owners of other land unwilling to make them available for WH&B use. <p>Of the remaining 13.7 million acres:</p> <ul style="list-style-type: none"> • 47% ...comprised intermingled land-ownerships or areas where the water was not controlled by the BLM (e.g., checkerboard land pattern created by railroad grants). • 22%... comprised areas where a critical habitat component (such as winter range) was missing, the habitat was unsuitable for WH&B use, or substantial resource conflicts existed (e.g. threatened and endangered species). • 13% ...comprised land transferred as a result of Federal legislation from the BLM to other (e.g. National Park Service). • 11% ...comprised lands removed from WH&B use for reasons ranging from Federal Court decisions, disease (equine infectious anemia), urban expansion, highway fencing causing habitat fragmentation, Department of Defense withdrawals (e.g. space shuttle landing site) or land exchanges transferring land from BLM ownership. • 7% ...comprised areas where no federal animals were present (e.g., the horses present

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		were privately owned domestic horses that were claimed during the claiming period provided for in the 1971 WFRHBA).
110	Individuals	BLM continues to plot to kill and slaughter wild horses. 90% of adopted wild horses go to slaughter.
Response		<p>This comment is completely untrue. <i>"The Bureau of Land Management's top priority is to ensure the health of the public lands so that the species depending on them – including the nation's wild horses and burros – can thrive. To achieve that end, the BLM's wild horse and burro program must be put on a sustainable course that benefits the animals, the land, and the American taxpayer."</i> BLM Director Bob Abbey. Visit http://www.blm.gov/wo/st/en/prog/wild_horse_and_burro/national/about/director.html for the full message. Through the history of the program, the BLM's track record is clear: More wild horses and burros exist on the range today than when the WFRHBA passed in 1971. The BLM has intensive programs of monitoring, inventory, gather and adoption to manage healthy animals and healthy rangelands to ensure sustainable herds for decades to come.</p> <p>From 1971 to 2007, over 267,000 excess wild horses and burros were removed from public lands. As of 2007, approximately 235,700 animals have been adopted. On average, about 6,300 animals have been adopted annually since 2001. Since 2001, approximately 62% of animals removed from the range have been adopted or sold. The remainder have been held in long and short-term holding facilities (GAO 09-77). The Proposed Action as identified in this EA was developed to reduce growth rates and therefore the number of animals that must be removed from the range and adopted or held in long or short-term facilities in the future, while maintaining healthy wild horses on the range within the established AMLs.</p> <p>BLM is no longer required to protect animals after ownership passes to adopters or buyers; however, BLM has implemented controls to help prevent their slaughter. As of fall, 2007, all horse slaughter facilities in the United States were closed. It is still possible for horses to be sold to facilities outside of the United States. Prior to the closure of the slaughter facilities in the United States, about 50,000 <u>domestic</u> horses were brought to slaughter facilities <u>annually</u>. Of those, about 0.25-0.80% were privately owned, titled adopted wild horses (GAO 09-77).</p>
111	Individuals	<ul style="list-style-type: none"> • The BLM illegally fails to use scientific methods. • The BLM also has no credibility/ scientific integrity in any matters concerning wild horses or the picking and choosing of certain wild horses to be left in a herd.
Response		<p>This comment is outside of the scope of the analysis. The BLM utilizes well established scientific methods in the field of range monitoring, inventory and carrying capacity allocations, following approved methods outlined in official technical references and BLM handbooks and manuals. The field of range science and ecology has been studied and developed since the early beginnings in the 1880's and early 1890's (Sayre and Fernandez-Gimenez, 2003). The BLM follows best management practices developed by the USGS pertaining to inventory following several years of intense study of various methods to perform inventory. The BLM has been gathering and applying selective removal criteria during wild horse gathers for 20 years. BLM WHB Specialists adhere to the current selective removal policy while conducting gathers as well as assessing wild horse body condition and health, conformation and other traits when evaluating wild horses for removal or release. In the case of the proposed gather, all horses would be released except weanlings, some yearlings and those horses located outside of the HMA boundaries.</p>
112	Individuals	There are no excess horses there. There are no excess horses in Warm Springs Herd Area .
Response		Refer to the Purpose and Need for the Proposed Action at Section 1.2. Two of the HMAs currently exceed the upper level of AML. The gather is being conducted in order to apply

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		fertility control in order to slow growth rates and reduce the need to remove excess wild horses in future gathers. If the Proposed Action is not taken at this time, additional excess wild horses would have to be removed in the future. The Proposed Action does not pertain to the Warm Springs Herd Area, which is not administered by the MLFO.
113	Individuals	<ul style="list-style-type: none"> • Dr Gus Cothran , equine geneticists of Texas University says a herd cannot fall below a min of 150-200 breeding age adults this number can not include counting any young or older horses. • Removing any wild horses would destroy the thriving ecological balance of this herd and the HMA. You may again refer to the Dr Gus Cothran on this matter. • The Proposed Action would leave less than a minimum viable population at low AML and reproductively infertile horses for adequate genetic variation. • These herds will not be managed as a self sustaining population. • The use of an infertility drug in non-viable herds is cause for alarm, but add in the manipulation of the sex ratios by BLM and the situation is even more troubling. • Studies conclude that this is not a genetically viable population. The "minimum" number of animals is between 150-200 breeding age animals to sustain a genetically viable population^{3,4}. See Appendix A. <p>3. Genetic Variation and Its Management Applications in Eastern U.S. Feral Horses Robin B. Goodloe, Robert J. Warren, E. Gus Cothran, Susan P. Bratton and Kathryn A. Trembicki <i>The Journal of Wildlife Management</i>, Vol. 55, No. 3 (Jul., 1991), pp. 412-421</p> <p>4. Analysis of Genetic Variation in the PMWH Herd. Cothran, E.G. and F. Singer (2000) pp 91104.(in) Singer, F.J. and K.A. Schoenecker, compilers (2000) Managers' Summary - Ecological Studies of the Pryor</p>
Response		Refer to the <i>Genetics Discussion</i> in Section 3.2 of the EA and Table 1 in Appendix B. The genetic variability of these herds is high, and no concerns have been expressed by Dr. Cothran in the genetics reports received for these HMAs. The studies referenced are not applicable to Nevada wild horses or the HMAs identified in the Proposed Action. Sex ratios modification is <u>not</u> included within the Proposed Action or Alternative 1.
114	Sam Welsh	The removal of a mustang costs already strapped American taxpayers over \$2,000 in addition to a possible \$2,098 to \$470/year holding cost for the rest of the horse's life if they are not adopted or sold.
Response		Comment noted. It is for these reasons that the Proposed Action identifies application of fertility control at this time, before the population grows to a point that would require removal of large numbers of excess wild horses. Removal of primarily weanlings and yearlings will reduce (and nearly eliminate) the need to maintain any wild horses in Long Term Holding Pastures (LTHPs). Should the BLM be able to continue to retreat these animals in 2-3 years, over time, the need to remove any animals may be eliminated all together. Refer to the Purpose and Need at Section 1.2.
115	Sam Welsh	It is likely that only a small percentage of the wild horses and burros removed would be adopted into good homes. The rest would be moved to short term holding at a cost of approximately \$5.75/day and then to long-term holding facilities in Iowa, South Dakota, Kansas and Oklahoma at a cost of around \$470/year.
Response		This is an inaccurate statement. GAO found that between 2001-2007, that approximately 63% of wild horses removed from the range were adopted or sold (GAO 09-77). Through the Proposed Action, the objective for removal would include primarily weanlings and yearlings which would not need to be maintained in LTHPs as they would be young, healthy and highly adoptable. Refer to response 114 above. The goal of the gather is to reduce the number of wild horses that must be removed from the range in the future through reducing population growth rates with fertility control.
116	Individual	In the recent opinion rendered by Judge Paul L. Friedman in the Calico Complex case, he stated the "BLM's relocation of excess horses to those facilities for indefinite holding periods violates

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		the plain language of Section 1339a." He further stated that "such a large number of confined horses raises precisely the specter of the 'zoo-like' developments whose formation the Act (1971 Wild Horse and Burro Act) was meant to prevent."
Response		This comment is outside of the scope of the analysis. In Defense of Animals' lawsuit (In Defense of Animals v. Salazar, Case No. 1:09-cv-02222-PLF) challenging the legality of long-term holding was dismissed by the U.S. District Court for the District of Columbia in a Decision dated May 24, 2010.
117	Sam Welsh	Please provide, a categorized budget and estimated total cost for this helicopter removal and subsequent processing to be conducted by the Cattoor Livestock company
Response		The gather is currently not identified for Cattoor Livestock Round-up Inc. This comment is outside of the scope of the analysis.
118	Individuals	Especially in the current economy, it is simply not financially feasible to continue transporting and warehousing over 38,000 horses in captivity when their native rangelands will, in most cases, continue to support them!
Response		This comment is outside of the scope of the analysis. Refer to response to comment 114 above.
119	Individuals	<p>BLM Director Bob Abbey's has pronounced that "it's a new day, and we need a fresh look at the Wild Horse and Burro program." Now would be a good time to implement CHANGE in BLMs tactics toward managing our public lands and our treasured herds instead of employing the usual "business as usual" mentality. Continuing these incessant destructive roundups and managing our wild horses and burros into extinction is not the way forward. Nor is moving them to the East in non-reproducing (castrated and PZP'd), broken families as they wait to die out. Business as usual.</p> <p>The Senate has directed BLM to develop a new comprehensive long-term plan for wild horse populations by September 30, 2010. The time has come to implement a sustainable plan for OUR wild herds on OUR Western public lands and restore their protections set forth in the 1971 Wild Free-Roaming Horses and Burros Act allowing these magnificent animals to live in peace on THEIR rightful ranges. This is the "new direction" that needs to be taken to save our national heritage from the managed extinction plans of the BLM.</p>
Response		The Proposed Action is consistent with the new initiatives being proposed by Director Bob Abbey and Secretary of the Interior Ken Salazar which includes <i>"applying new strategies aimed at balancing wild horse and burro population growth rates with public adoption demand to control holding costs.</i> <i>This effort would involve slowing population growth rates of wild horses on Western public rangelands through the aggressive use of fertility control, the active management of sex ratios on the range, and perhaps even the introduction of non-reproducing herds in some of the BLM's existing Herd Management Areas in 10 Western states [emphasis in original]</i> ". Refer to the complete message at http://www.blm.gov/wo/st/en/prog/wild_horse_and_burro/national/about/director.html , as well as response to comments 62, 63, and 64 above.
120	Individuals	<ul style="list-style-type: none"> • We have great concerns about the reported population numbers as well. • Foals, contrary to the EA, are not to be included in the AML. AML and population counts are to include only mustangs over one year of age when survival is more assured. • Population estimates in general by the BLM ignore the fact that wild horse herds do not increase by 20% or 25 % per year (an population increase of 10-12% is more accurate but varies from year to year and herd to herd). • I was informed there is only a small number of horses and I dispute this number as it is not arrived at using scientific methods, even if it were it there is no excess horses as you have included all horses in the count and young horses are not supposed to be counted, • BLM as earlier stated uses no excepted scientific principles and continues to use incorrect population growth numbers that are ridiculous. • BLM uses reproduction rates which are incorrect, they also do not count baby cattle when

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		counting cattle -but do when it comes to horses. <ul style="list-style-type: none"> • An independnat [sic] count of the wild horses must be done. • Mountain lion predation and natural death are rarely, if ever, taken into account when estimating population.
Response		<p>The MLFO has consistently utilized the best management practices when conducting helicopter inventory flights to insure the highest accuracy. Refer to response 111 above. The GAO concluded through their review that “<i>research and experience have shown that BLM’s on-the-range population estimates are too low</i>”, and stated that “<i>regardless of which method is used, counting wild horses and burros can be challenging, particularly when the animals are obscured by trees or when the rangeland is covered with snow</i>” (GAO 09-77). So, the current BLM estimates of the populations are actually lower than the what the actual population likely is. Additionally, the MLFO utilizes an annual rate of increase of 17.5% which is based on historic averages among the HMAs. Population increases following application of fertility control are estimated based on information obtained during flights of areas previously treated with fertility control.</p> <p>The annual rate of increase takes into account the previous year’s foals and mortality of all ages that may have occurred. This would include predation or natural death.</p> <p>Per the BLM Wild Horses and Burros management Handbook 47000-1, AML applies to the number of adult wild horses or burros to be managed within the population and does not include current year’s foals. All WH&B one year of age and older are considered adults (a foal is considered one year of age on January 1 of the year following its birth). The EA does not imply that foals are included within the AML. The number of foals observed during inventory flights is recorded to determine the percent foals represented in the population over time, and provided in the EA for the reader’s interest. It is important to note that the majority of foals will weaned by their mothers prior to the gather operation thus would count towards AML. Refer to response 33-37 and 102 above.</p>
121	Individuals	The EA lacks accurate census information. The EA includes only estimates and lacks verifiable current horse population census data.
Response		Refer to response to comment 120 above.
122	Individuals	<ul style="list-style-type: none"> • The BLM fails to acknowledge the value of wild horses to their native environment. It is well known that the horse, with its post-gastric digestive system can reseed the range and greatly aid in building nutrient-rich humus, a critical component of healthy soils. The horses break water, allowing pronghorn, deer, smaller mammals and birds to drink. Unlike cattle that ruminate— often near riparian areas where they defecate in the water—the horses keep moving for most of the day and night to assist in digestion. • They prefer upland grazing habitat unlike exotic cattle that cluster in lowland areas along streams and water sources. Cows generally graze within a mile of water. In comparison wild horses are highly mobile, moving 5-10 miles from water and grazing on more rugged terrain. • Horses reseed due to the single stomach while cows with multiple stomach destroy all seeds through forage and never reseed as they graze, horses are reseed grasses and native plants and are good for the land also as they are native.
Response		These statements are not accurate. Beneficial effects of wild horses on the functioning of ecosystems within these HMAs have not been documented. The condition of vegetation and other resources within these HMAs and impacts by wild horses was discussed within the previous EAs completed for these areas (identified in Section 1.1 of the EA) as well as Section 3.5 of the EA.
123	Individuals	<ul style="list-style-type: none"> • The horse, as a returned native, fits into an environment from which they were missing for

No.	Commenter Name	Comment
		<p>only 7,000 years—the blink of an eye in geologic time.</p> <ul style="list-style-type: none"> • The “green” wild horses should be embraced as part of the eco-system of this wild and beautiful area. • Wild Horses are viewed with a critical eye. No reference is ever made to any environmental, ecologic or economic benefit as it may apply to Wild Horses. Citations are made as to relief from competition for ruminant wildlife, increased safety for endangered species, strides toward range and riparian recovery and allotment restructuring for livestock as the primary benefits of continued removals of Wild Horses. Little else is stated, outside of their prodigious tendencies toward destruction and procreation; they are not considered as inhabitants of the environs they occupy. That is the perception conveyed.
Response		Refer to response to comment 122 above.
124	Sam Welsh	The National Academy of Sciences says horses are good for grasses and native plants and that it is cattle that cause all damage on public lands. BLM attempts to blame wild horses for noxious weeds- it is excepted science that cattle are the main cause of not only noxious weeds but of desertification of our public lands and yet we see BLM trying to blame a horses, which are a species that evolved in North America and the National Academy of the Sciences has said not only do not harm public lands and native plants but are good for all native plants.
Response		The MLFO is not aware of this NAS report. Refer to response to comment 122 above.
125	Sam Welsh	Given the statements on cattle vs. wild horse behavior, a reanalysis of actual damage should be done before any removals take place.
Response		Refer to response to comment 96 and 103 above. These decisions have ready been made following extensive monitoring and review of data, and included the interested public.
126	Individuals	The piecemeal methods of BLM public lands management are not positive for the land or the wild herds and limit solutions. Adaptive Management must be utilized and the public allowed to comment and to suggest solutions on actions in a holistic manner.
Response		Refer to the Purpose and Need identified in Section 1.2 of the EA. The interested public is involved through the Multiple Use Decision process as well as the Land Use Planning Process.
127	Sam Welsh	Why has your office failed to increase wild horse and burro AMLs to levels that would benefit taxpayers by decreasing removal costs while benefiting the environment by concurrently reducing livestock grazing levels?
Response		Refer to comment 61, 96 and 103 above. AMLs must be based on data and cannot be arbitrarily established for administrative convenience. This would not be consistent with the WFRHBA, PRIA or FLPMA.
128	Individuals	<ul style="list-style-type: none"> • The herd size and AML determined by the BLM are arbitrary, artificially low, not based on science and based on assumptions and inadequate data. • The AMLs and are based on the BLMs corrupt relationship with the cattle industry. • Government Accountability Office 2008 found that BLM arbitrarily sets AMLs for wild horses. BLM does not have consistent methodology that is used to determine Appropriate Management Level (AML).
Response		Refer to responses to comments 61, 96 and 103 above and the EAs identified in Section 1.1 which detail how and when AMLs were established for these HMAs. AMLs were based on extensive monitoring, analysis of monitoring and through FMUDs following coordination with the interested public. The GAO (GAO-09-77) has determined that despite the lack of formal guidance which would improve consistency, that BLM does in fact base the AMLs on multiple factors including actual use, utilization and trend studies, climate, other rangeland users and resources and carrying capacity analysis among other factors identified in the October 2008 report. Refer to response to comments 61, 96.
129	Individuals	<ul style="list-style-type: none"> • The BMDO should utilize its discretion, as per Interior Secretary Order N0. 3270 issued March 9, 2007 establishing the agency policy to incorporate Adaptive Management into management programs, to postpone the proposed gather and modify/amend the Resource

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		Management Plan (RMP) and Herd Management Area Plans (HMAPs) to reassess and establish adequate AML to accommodate the wild horses currently in the HMA's. The Proposed Action should be postponed while such a process is undertaken. <ul style="list-style-type: none"> • AMLs need to be reset/re-evaluated and increased, and grazing permits reduced. • The proposed EA refers to AMLs that were adopted under a Resource Management Plan (RMP) completed in 1982; 28 years ago. Advances in science and policy make adjustments to AML and livestock use overdue and ripe for review. The RMP is currently undergoing review. This action should be suspended until the plan is up to date and completed.
Response		Refer to response to comments 61, and 63 above. AMLs are not established in Resource Management Plans. Refer to Section 1.1 and 1.4 for additional clarification about establishment of AML within these HMAs. The Battle Mountain District's Land Use Plans are currently under revision. The Final EIS and Record of Decision will not be complete until 2014-2015. Delay of a gather until that time is not consistent with the WFRHBA, PRIA or FLPMA, severe range degradation would occur in the mean time, and large numbers of excess wild horses would ultimately need to be removed from the range in order to achieve the AMLs. Individuals interested in participating should write to the Field Office Manager and ask to be added to the Wild Horse and Burro mailing list. Also ask to be notified of any planning or decisions for the specific HMAs of interest to you.
130	Individuals	The Government Accountability Office has said as much -- most recently in 2008 -- reporting that wild horse removals did not significantly improve range conditions, pointing to millions of cattle as the culprit as they greatly outnumber wild horses and burros on our western public lands. A report by the GAO concluded that wild horse removals did not significantly impact range conditions.
Response		This statement is not accurate. On the contrary, the GAO report states that <i>"Populations that exceed AML can harm the health of the range"</i> and <i>"the overpopulation of wild horses and burros on the range may negatively impact herd health, rangeland health, and livestock and wildlife that depend on the range. An over-obligation of the vegetative resources can result in declines in the healthy vegetative condition that may take years to recover"</i> (GAO 09-77).
131	Individuals	The EA lacks options for giving wild horses a fairer share of resources in these federally protected wild horse areas.
Response		Refer to response 96 above.
132	Sam Welsh	How will wild horse and burro reduction aid in restoration of disturbed areas when such high numbers of livestock are grazed on these same public lands?
Response		Refer to the EA Sections 3.2, 3.3, 3.5 and Chapter 4. Refer also to the previous EAs completed for these areas (identified in Section 1.2 of the EA).
133	Individual	There has not been adequate data to show precisely how many horses there are on these lands that were set aside for them in the original Wild Horse and Burro Act of 1971. How can an AML be deduced without adequate and factual information?
Response		This is outside of the scope of the analysis. The number of wild horses existing in these areas at the passage of the WFRHBA has nothing to do with the Proposed Action. The BLM is mandated to establish AML and determine removals based on data, not the numbers of animals that may have existed in these areas in 1971. Refer to response to comment 61 for more information about how AML is established.
134	Individual	We must implement an "in the wild management" program and it is time to take a serious look at something called a RESERVE DESIGN, which incorporates natural predators and natural boundaries.
Response		Refer to Section 3.2 of the EA. Wild horses in these HMAs have few predators and those that are present are not keeping population growth in check. The BLM is mandated to remove excess wild horses and is authorized to utilize population controls such as fertility control in

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		achieving and maintaining AML. The BLM will welcome public comment, recommendations and proposed management methods for consideration in the Land Use Plan Revision for the Battle Mountain District. Public scoping will open next spring following notification of the public, however comments are welcome at any point.
135	Individual	An 11 year study conducted by one of the oldest and most respected Wild Horse protection foundations in existence has shown that round-ups actually cause the herd rates to double.
Response		The MLFO is unaware of this study and would be interested in receiving a copy of it.
136	Individuals	Please provide accurate scientific analysis of any damage done to the range by horses and burros and indicate how this damage is attributed to wild equids and not livestock. There has not been adequate scientific evaluation on the impact of wild horses on our public lands. I have not seen enough evidence to indicate that our wild horses are the cause of any damage to the western rangelands. It appears that they enhance and benefit the natural ecosystem.
Response		This comment is outside of the scope of the analysis. Decisions to allocate wild horses and livestock within these areas have been made through FMUDs following the analysis of monitoring data and coordination with the interested public. <i>“Proper range management dictates removal of horses before the herd size causes damage to the range land. Thus, the optimum number of horses is somewhere below the number that would cause resource damage”</i> (118 IBLA 75). Refer to response to comments 61, and 96 above.
137	Sam Welsh	The Cloud Foundation HAS OBJECTIONS. The CLOUD FOUNDATION and other wild horses and burro advocates strongly object to this round up. Ginger Kathrens said that it is the most egregious EA she’s read in her 16 years with the wild horses.
Response		Neither the Cloud Foundation nor Ginger Kathrens provided comments to this EA.
138	Sam Welsh	Please describe in full the planned capture process for the interested public. This would trap locations, procedure for moving horses and burros to holding location, outline processing and future plans for all removed animals.
Response		Refer to Section 2.2, 3.2 and Appendix A. Photos of past gathers are located at the end of Appendix A for the public’s information. Refer to response to comment 55 above.
139	Sam Welsh	Should this removal proceed, will humane observers and the public be given full access to observe (while not disturbing the operation) any planned removal plans, processing and infertility control treatment. There is a high level of interest in this action.
Response		Refer to response 55 above.
140	Sam Welsh	The Inspector General of the Debt Of Interior said in a report in 4-2010 that the BLM has no scientific integrity and bases decisions on the wants of the cattle permittees.
Response		This comment is outside of the scope of the analysis.
141	Sam Welsh	The FONSI is not valid scientifically or signed.
Response		At the issuance of the preliminary EA, the FONSI had not been drafted. The FONSI signed and issued with this Final EA is valid.
141	Sam Welsh	Cattoor has already been convicted of stealing wild horses and slaughtering them, now in Nevada he recently drove pregnant mare and foal over cliffs and injured and illegally shot them and then lied about it, he also was recorded by the New YORK Times saying he injures horses with helicopter, then shoots them in the head and slides them in trucks and takes them to town to hide them and cover up his murder of wild horses.
Response		Refer to this site for accurate information about the mare and foal allegedly driven off a cliff: www.blm.gov/nv/st/en/fo/elko_field_office/blm_programs/wild_horse_and_burro/owyhee_rock_creek.html . These reports were founded on speculation that provides an inaccurate record.

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		<p>The New Your Times video was taken out of context and pertained to the occasional need of the contractor and BLM to deal with injuries or death of animals while in the presence of numerous observers, some of which wish to portray these occasional an unfortunate accidents as the norm.</p> <p>Pertaining to Dave Cattoor being convicted of stealing horses, the incident in question stems from work performed for the Duckwater Indian Tribe in which Mr. Cattoor’s helicopter pilot (Cliff Heaverne) crossed the boundary line between the reservation and the BLM lands in order to capture the horses which had left the reservation. When unbranded and unclaimed horses are on Indian tribal lands, they are considered Indian horses. However, when they are on the BLM lands in/near Herd Management Areas, they are considered wild horses protected under the 1971 Wild Free-Roaming Horses and Burros Act. The record shows Mr. Cattoor and his pilot, Mr. Heaverne, were performing work at the specific direction of the Duckwater Indian Tribe. They did not deliberately violate the 1971 Wild Free-Roaming Horses and Burros Act, and were not doing anything to harm or harass wild horses. Rather, they were performing work under contract to the Indians in the same manner they do for the BLM.</p>
142	Katie Fite, Western Watersheds Project	It is impossible; to believe there is “excess” TNR forage for Gandolpho cows when BLM is now proposing to remove some wild horses from the HMA.
Response		The Mt. Airy Allotment is not within the New Pass/Ravenswood HMA.
143	Katie Fite, Western Watersheds Project	Please also include all documents related to the TNR issuance in portions of the Mount Airy allotment over the past several years, as well as the cheatgrass-promoting fuelbreaks - which are outside the HMA but still in portions of this allotment and undergoing desertification and degradation from livestock impacts.
Response		TNR issuance within the Mt. Airy Allotment is outside of the scope of the analysis as it is not within the New Pass/Ravenswood HMA. Same response for the fuelbreaks.
144	Katie Fite, Western Watersheds Project	We are also very concerned about possible Contractor, or other party, movements and manipulation of horses in advance of Round Ups – especially after the disastrous Owyhee Gather and BLM cover-up that occurred there.
Response		The BLM will be monitoring these areas prior to the gather, and any individual found to be manipulating wild horses would be in violation of the WFRHBA and would be cited accordingly by law enforcement. The alleged manipulation could not be documented or supported with factual information other than by public accusations.
145	Katie Fite, Western Watersheds Project	<p>This article refers to horses “outside the HMA”. Are any of the horses “outside the HMA” in portions of the Mount Airy allotment outside the HMA? Where are all of the errant horses, and how did they get there?</p> <p>In the past, BLM used to move such horses back inside the HMA – so they would not all be excess.</p>
Response		In the Mount Airy Allotment, the BLM observed 12 horses during the most recent inventory flight in September 2009. Another 24 wild horses were located outside of the HMA in the Gilbert Creek Allotment during the same flight. Experience has shown that when horses are moved back into the HMA they will again move outside of the HMA as they establish residency in these areas and prefer to return to them. Animals moving outside of HMA boundaries is also a function of density and the population over AML as the numbers of animals outside HMAs increases as the over all population increases.
146	Katie Fite, Western	How many more horses could the land support if the annual TNR issuance ended?

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	Watersheds Project	
Response		The TNR within the Mt. Airy Allotment does not pertain to the New Pass/Ravenswood HMA. The current proposed gather is being conducted primarily to conduct fertility control on the population so as to reduce removals through future gathers.
147	Katie Fite, Western Watersheds Project	Why isn't BLM leaving band structures, as least in some areas, intact? Isn't this an alternative that could also help limit population growth? Wouldn't that also be cheaper than paying the contractor huge sums for this all?
Response		The MLFO is unaware as to why or how leaving band structures intact would limit population growth. At this time, the primary viable alternatives to reducing population growth are to manage for an increased proportion of studs as compared to mares, apply fertility control or both.
148	Individuals	Also there is not a No Action Alternative and this is against NEPA.
Response		Refer to response 41 above.
149	Individual	Management on the range should be utilized to address the horses outside an HMA.
Response		This comment is not specific as to what kind of "management on the range" would alleviate the problem of wild horses being outside of an HMA. Refer to response to comment 145 above.
150	Individuals	<ul style="list-style-type: none"> • The EA omits data regarding natural predators: the EA completely omits analysis of the number of predators and the hunting practices of predators in and around the HMAs. This data and analysis is imperative in order to fully understand the impact predators may have on horse population control and protective measures that might restore a thriving ecological balance between predators and prey in the HMAs. • What are the effects of mountain lion predation on this herd and the effect of other potential predators? • The EA lacks options for protecting predators as a natural method of wild horse population control. Predators are killed because of livestock. Mountain lions help keep wild horse populations in check and should be protected "so that a nature crafted predator-prey relationship calls the shots—not us humans. • Work with the Fish and Game folks to protect the mountain lions.
Response		These comments are outside of the scope of the analysis. Wildlife is managed by the State of Nevada. Predation is currently not having significant effects on any populations administered by the MLFO. Refer to Section 3.2 of the EA.
151	Jessica Johnston	<p>The populations should be revised and improved census methods employed. The "direct count" method assumes a "true census" and that each animal is counted, and only once. This methodology has significant limitations and does not apply statistical corrections for double counting, sight-ability, or bias, and can provide significantly higher or lower counts due to the margin of error.</p> <p>USGS has developed scientific and statistically accurate methods to conduct population surveys. BLM is currently partnering with USGS to improve census techniques of wild horses and. These methods applied independently or in combination increase the accuracy and reliability of the census.</p> <p>A collaborative effort should be made with the USGS to implement census methodology that will increase the accuracy of the population estimate. This would strengthen the proposal and provide objective scientific methodology for both "pre" and "post" gather census inventories</p>
Response		Refer to response to comment 120 above. The BLM will be implementing these methods in the future.
152	Jessica Johnston	An economic analysis of the costs and benefits of each alternative is needed in the proposal.

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		This comment is outside of the scope of the analysis.

Appendix F – Public Observation Day Protocol and Ground Rules

These rules were created to ensure the safety of both the humans and the animals at the gather site(s). A scheduled public observation day provides a more structured mechanism for interested members of the public to see the wild horse gather activities at a given site. On this day, BLM attempts to allow the public to get an overall sense of the gather process and has available staff who can answer questions that the public may have. The public rendezvous at a designated place and are escorted by BLM representatives to and from the gather site.

- The Bureau of Land Management (BLM) will schedule observation days to provide the media and public opportunities to view activities during the wild horse gather.
- To provide a safe environment for the animals, BLM staff, contractors and members of the public/media, requests will be accepted on a first come, first served basis and be limited to **10 people** per observation day. The BLM recommends all appointments be made as far in advance as possible in order to help us schedule and confirm your request, and will make every reasonable effort to accommodate the public.
- Observation days and gather operations may be suspended if bad weather conditions create unsafe flying conditions.
- The BLM will notify observers as soon as possible if an observation day is canceled due to bad weather.
- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, clothing and food.
- Observers are prohibited from riding in government and contractor vehicles and equipment.
- Visitors arriving at the rendezvous site without an appointment will not be allowed to participate in the observation day.
- BLM representatives will escort visitors to and from the gather and/or temporary holding facility.
- Visitors will be assigned to a BLM representative and must stay with that person at all times.
- Visitors are **NOT** permitted to walk around the gather site unaccompanied by a BLM representative.
- The BLM will clearly identify observation areas and visitors **must** stay within these designated areas.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- Visitors must direct their questions/comments to either a designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities.
- BLM may make the BLM/contractor staff available during down times for a Q&A session.
- When given the signal that the helicopter is close to the gather site bringing horses in, visitors must sit down in areas specified by BLM representatives and must not move or talk as the horses are guided into the corral.
- Observers will be polite, professional and respectful to BLM managers and staff and the contractor/employees.
- Visitors who do not cooperate and follow the rules will be escorted off the gather site by BLM law enforcement personnel, and will be prohibited in participating in any subsequent observation

days.

Non-Observation day Protocol and Ground Rules

Non-observation days are days when the public is welcome to attend a gather on public land, or on specified private lands where permission was granted. The public is responsible for their own safety and health in their travels to and from the gather site.

- BLM staff will be limited on these days to answer questions.
- The public will be expected to remain in designated observation areas.
- Visitors are **NOT** permitted to walk around the gather site unaccompanied by a BLM representative.
- The BLM will clearly identify observation areas and visitors **must** stay within these designated areas.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, clothing and food.
- When given the signal that the helicopter is close to the gather site bringing horses in, visitors must sit down in areas specified by BLM representatives and must not move or talk as the horses are guided into the corral.
- Observers will be polite, professional and respectful to BLM managers and staff and the contractor/employees.
- Visitors who do not cooperate and follow the rules will be escorted off the gather site by BLM law enforcement personnel, and will be prohibited in participating in any subsequent observation days.