BLM

Stillwater Field Office, Nevada

ENVIRONMENTAL ASSESSMENT

WASSUK HERD MANAGEMENT AREA WILD HORSE GATHER PLAN

DOI-BLM-NV-C010-2012-0061-EA

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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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LIST OF ACRONYMS

AML	Appropriate Management Level
APE	Area of Potential Effect
APHIS	Animal and Plant Inspection Service
AUM	Animal Unit Month
AVMA	American Veterinary Medical Association
BCS	Body Condition Score
BLM	Bureau of Land Management
CCDO	Carson City District Office
CFR	Code of Federal Regulations
COR	Contracting Officers Representative
CRMP	Carson City Field Office Consolidated Resource Management Plan
CESA	Cumulative Effect Study Area
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
FAR	Federal Aviation Administration Regulations
FCC	Federal Communications Commission
FIA	Freund's Incomplete Adjuvant
FLPMA	Federal Land Policy and Management Act
FM	Frequency Modulated
FMA	Freund's Modified Adjuvant
FMUD	Final Multiple Use Decision
FY	Fiscal Year
GAO	Government Accountability Office
GPF	Grassland Pasture Facilities
HA	Herd Area
HMA	Herd Management Area
HSUS	Humane Society of the United States
IBLA	Interior Board of Land Appeals
IM	Instructional Memorandum
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NPO	National Program Office
NV	Nevada
NVCRIS	Nevada Cultural Resource Information System
PFC	Proper Functioning Condition
PI	Project Inspector
PRIA	Public Rangelands Improvement Act
PZP-22	Porcine Zone Pellucida
RMP	Resource Management Plan
ROD	Record of Decision
S&G	Standards for Rangeland Health and Guidelines
SFO	Stillwater Field Office

SOP	Standard Operating Procedures
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service
VHF	Very High Frequency
WFRHBA	Wild Free-Roaming Horse and Burro Act

1.0 INTRODUCTION/PURPOSE & NEED

1.1 INTRODUCTION

The Bureau of Land Management (BLM) is proposing to gather approximately 498 wild horses from the Wassuk Herd Management Area (HMA), based on a gather efficiency of 80% in order to remove excess wild horses and apply population control measures. A total of approximately 400 excess wild horses would be removed from the HMA. Approximately 98 wild horses would be released back onto the range following the gather. Of these, about 39 mares would be vaccinated with PZP-22 (Porcine Zona Pellucida) fertility control vaccine which would assist with slowing population growth, maintaining population size within the Appropriate Management Levels (AMLs), and extend the time before another gather to remove excess wild horses would be needed. At the anticipated gather efficiency of 80%, 59 male and 39 female horses would be released back into the HMA utilizing a sex ratio of 60% males and 40% females. This would leave a post gather population of approximately 321 wild horses in the Wassuk HMA (which is above the AML range of 110-165) at the conclusion of the gather operations (See Table 1 below). A follow-up gather would need to occur to achieve the AML range and additional population controls would need to be implemented in these follow-up gathers.

The proposed wild horse gather for the Wassuk HMA to remove excess animals and apply population control measures is scheduled to begin in September of 2012. The BLM intends to continue with population control activities and maintain AML over the next 10 years by returning every 2-3 years to re-treat mares with fertility control vaccine as well as to remove excess wild horses as specified in this EA within the Wassuk HMA areas. Based on existing holding space and budgetary limitations, the BLM may not be able to meet necessary removal targets in order to achieve the low range of AML with the initial gather and follow-up gathers would be required to achieve AML and implement population control efforts.

The Wassuk HMA is located within the administrative jurisdiction of the BLM Carson City District (CCDO) within Lyon and Mineral Counties, Nevada (NV). The HMA is approximately 12 miles east-southeast of Yerington, NV and west of Walker Lake. HMA location maps are available in Appendix A. Upon completion of the gather, the HMA would be within the established AML range.

Table 1: Proposed Gather Numbers

HMA	Current Estimate*	AML Range	Proposed Gather	Animals to be Removed	Mares to be Treated	Animals to be Released	Animals Remaining
Wassuk	623	110 - 165	498**	400	39	98***	321

*The current population estimate is based the population inventory completed in June 2011, and includes estimated 2012 population growth rates of 20% for this HMA.
** If gather efficiency of 80% is achieved.
*** A total of 320 horses would remain upon gather completion; the number of horses released would depend on gather efficiency. Female foals (fillies) would not be treated.

This Environmental Assessment (EA) is a site-specific analysis of potential impacts that could result from the implementation of the Proposed Action and No Action Alternative. Preparation

of this EA will assist the BLM's Stillwater Field Office (SFO) during project planning and ensures compliance with the National Environmental Policy Act (NEPA). Preparation of an EA enables the authorizing officer to determine if significant impacts could result from implementing the Proposed Action or No Action Alternative.

Should the determination be made that implementation of the Proposed Action would not result in "significant environmental impacts" or "significant environmental impacts beyond those already addressed in the Resource Management Plan/Environmental Impact Statement (RMP/EIS) and Management Framework Plans", a Finding of No Significant Impact will be prepared to document that determination, and a Decision Record will be issued providing the rationale for approving the selected alternative.

1.2 BACKGROUND

In passing the Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA) (Public Law 92-195), Congress found that: "Wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West." The Act states that wild free-roaming wild horses (and burros) are to be considered in the area where presently found, as an integral part of the natural ecosystem of the public lands. The Secretary is directed to "manage wild free-roaming wild horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands." To achieve this balance, the BLM has established AMLs and manages and controls wild horse population size within HMAs that has been designated for their long-term management. The terms "horse" and "wild horse" (*Equus caballus*) are used synonymously throughout this document.

The BLM estimates that approximately 38,500 wild horses (*Equus caballus*) and burros (*Equus asinus asinus*) reside on BLM-managed lands in the 10 Western states, based on the latest data available in August 2011. The combined AML is approximately 26,000 animals across 180 HMAs covering more than 31.9 million acres (14.7 million acres in Nevada). Wild horses residing in the gather area today are thought to be descendants of wild horses released by ranchers that turned out their animals in the area prior to 1971 (BLM 1990, 1993, 2005). These HMAs have not been designated as "Wild Horse and Burro Ranges" under 43 CFR 4710.3-2.7

The AML for the Wassuk HMA was established through a Final Multiple Use Decision (FMUD), approved in 1997, following completion of an in-depth analysis of habitat suitability, resource monitoring and population inventory data, and public input into the decision-making process. The upper limit of the AML range is the maximum number of wild horses that can be maintained within a HMA while maintaining a thriving natural ecological balance and multiple use relationship on the public lands in the area. Establishing the AMLs within a population range allows for the periodic removal of excess animals (to the AML low end) and subsequent population growth (to the AML high end) between removals. The AML for the Wassuk HMA is 110-165, current population estimates show approximately 623 wild horses in the HMA and surrounding areas.

For unknown reasons this wild horse population has fluctuated between 100 and 247 head from 1975 to 2008 with a low of 35 in 1973. Since 2008 the population has increased dramatically and it is unknown why the population did not increase appreciably until 2008. Mountain lion

predation on foals could explain part or all of the suppression, though there is little evidence to support this and it is unknown why a "shift" in population controls may have occurred.

No gathers removing excess wild horses has occurred within this HMA. However, a gather was conducted in this HMA in the 1980's in which the Proposed Action was to apply a contraceptive to mares. After treatment, all mares were returned to the range, none were removed. The effects of this fertility control would have slowed some of the population growth in the years immediately following implementation of the controls.

The population inventory counts and estimates since 1991 for the Wassuk HMA is listed below in Table 2. Some of the above referenced EAs are available on the BLM's web site at: http://www.blm.gov/nv/st/en/fo/carson_city_field/blm_information/nepa/ nepa_archives .html.

Table 2: Wassuk HMA Population Census Data

Year	Action	Number of Horses Counted	Number of Horses Outside the HMA	Within, Below or Above the AML Range (110-165)
2012	Population Estimate	623*	---	Over AML, approximately 375% exceeded.
2011	Population Inventory Count	519	251	Above AML, approximately 355% exceeded.
2010	Population Inventory Count	302	109	Above AML, approximately 180% exceeded
2008	Population Inventory Count	247	4.5	Above AML, approximately 150% exceeded
2000	Population Inventory Count	72	2	Below AML
1998	Population Inventory Count	94	3.5	Below AML
1997	Population Inventory Count	79 (incomplete count)	2	Incomplete count data
1995	Population Inventory Count	141	3.5	Within AML
1994	Population Inventory Count	116	3.5	Within AML
1993	Population Inventory Count	123	3.5	Within AML
1991	Population Inventory Count	157	3.5	Within AML
1989	Population Inventory Count	174	4	Above AML, approximately 105% exceeded
1984	Population Inventory Count	228	3	Above AML, approximately 138% exceeded
1979	Population Inventory Count	151	---	Within AML

Year	Action	Number of Horses Counted	Number of Horses Outside the HMA	Within, Below or Above the AML Range (110-165)
1975	Population Inventory Count	103	---	Below AML
1973	Population Inventory Count	35	---	Below AML

*The current population is estimated from the most recent inventory completed in June 2011, and includes an estimated population growth rate of 20% for the HMA.

1.3 PURPOSE AND NEED

The purpose of the Proposed Action is to ensure healthy rangelands by removing excess wild horses from the HMA so as to bring the wild horse populations to the levels determined to be necessary for a thriving natural ecological balance. The proposed action would manage wild horse populations and get the wild horse population in the HMA closer to the established AML as well as alleviating pressure on forage and water resources from over utilization by wild horses. This would allow the BLM to make significant progress in attaining the management objectives identified in the Carson City Consolidated Resource Management Plan (CRMP), and the Standards for Rangeland Health & Guidelines for Grazing Management (S&Gs) in the Sierra Front Northwestern Great Basin Resource Area.

The proposed action is needed to comply with the WFRHBA, achieve compliance with the CRMP, reduce population growth rates, provide for public safety, improve rangeland health, and enhance the health and safety of the wild horses. Management of wild horses at the AMLs protects rangeland resources from deterioration that could result from wild horse overpopulation and from animals moving to areas outside the HMAs due to excess numbers in the HMAs. The proposed action would also result in fewer wild horses being placed in short or long-term holding facilities over time.

1.4 LAND USE PLAN CONFORMANCE STATEMENT

The proposed action and alternatives described below are in conformance with the Carson City District's 2001 CRMP and is incorporated into this document by reference.

The Proposed Action and No Action alternatives described are in conformance with pages WHB – 1-5 and WLD 1-9, specifically the following decisions from the CRMP:

1. WHB-2, decision 2 – "Maintain sound thriving populations of wild horses within HMAs."

2. WLD-2, decision 4 – "Maintain and improve wildlife habitat, including riparian/stream habitats, and reduce habitat conflicts while providing for other appropriate resource uses."

3. WLD-2, decision 6 – "Maintain or improve the condition of the public rangelands so as to enhance productivity for all rangeland values (including wildlife)."

1.5 RELATIONSHIPS TO STATUTES, REGULATIONS, POLICY, PLANS OR OTHER ENVIRONMENTAL ANALYSIS

The Proposed Action is in conformance with the 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:

- **WFRHBA: "***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".*

- **The 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 Instruction Memorandum (IM) 2010-135, 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.

- **43 CFR 4700.0-6**: (a) "Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and productive capacity of their habitat".

- **43 CFR 4710.3-1: Herd management areas. "**Herd management areas shall be established for the maintenance of wild horse and burro herds. In delineating each herd management area, the authorized officer shall consider the appropriate management level for the herd, the habitat requirements of the animals, the relationships with other uses of

the public and adjacent private lands, and the constraints contained in 4710.4. The authorized officer shall prepare a herd management area plan, which may cover one or more herd management areas".

- **43 CFR 4710.4: Constraints on management. "**Management of wild horses and burros shall be undertaken with limiting the animals' distribution to herd areas. Management shall be at the minimum feasible level necessary to attain the objectives identified in approved land use plans and herd management area plans".

- **43 CFR 4740.1: Use of motor vehicles or aircraft.** (a) "Motor vehicles and aircraft may be used by the authorized officer in all phases of the administration of the Act, except that no motor vehicle or aircraft, other than helicopters, shall be used for the purpose of herding or chasing wild horses or burros for capture or destruction. All such use shall be conducted in a humane manner. (b) Before using helicopters or motor vehicles in the management of wild horses or burros, the authorized officer shall conduct a public hearing in the area where such use is to be made".

- **43 USC Sec. 1901:** (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".

The FMUD, Evaluations, Rangeland Health Assessments and EAs completed during AML establishment and current Permit Renewal EAs for this HMA is listed below:

- FMUD for the Wassuk Herd Management Area (Black Mountain, Gray Hills, and Butler Mountain Allotment Evaluations) 1997.

- Gray Hills Allotment Term Grazing Permit Renewal EA No. EA-NV-030-08-20.

- Black Mountain Allotment Grazing EA No. EA-NV-030-08-21.

- Butler Mountain Allotment Grazing EA No. DOI-BLM-NV-C010-2009-0011-EA.

1.5.1 CONFORMANCE WITH RANGELAND HEALTH STANDARDS AND GUIDELINES BY LIVESTOCK GRAZING ALLOTMENT

Maintaining wild horse populations within AML sustains a healthy horse population, ensures a thriving natural ecological balance, and prevents degradation of rangeland conditions by deterring negative impacts to rangeland resources that can result from wild horse over population. This has been demonstrated by the evaluation of key areas and ecological sites under rangeland health assessment protocols, which indicate that damage results from over utilization of resources when populations exceed the carrying capacity of the rangeland.

BLACK MOUNTAIN, BUTLER MOUNTAIN AND GRAY HILLS GRAZING ALLOTMENTS:
Black Mountain, Butler Mountain and Gray Hills Allotments comprise the Wassuk HMA. They contain 20,400, 4,300, and 25,400 acres, respectively, of the HMA (Refer to Maps in Appendix A). The initial AML identified in the CRMP was 151 head for the entire HMA, totaling 1,812 Animal Unit Months (AUMs). The FMUD, issued on September 5, 1997, established 234 AUMs available for wild horses within the Black Mountain Allotment.

Domestic livestock have been excluded from the allotments that are within and adjacent to the HMA. No domestic livestock have grazed on the HMA or within any accessible areas around the HMA for approximately 10 years. Excess horses have resulted in over use (heavy to severe use in some areas) of vegetative resources. In contrast, when wild horse numbers are managed within the AML, there is less competition between livestock, wildlife and horses. Horses also cause damage to spring developments, such as corrals, troughs, and spring boxes, and this allows damage to the springs themselves. The availability of water then becomes reduced over time.

BLM's goal of managing vegetation utilization within the moderate or less use categories is important to establishing and maintaining rangeland plant communities. Portions of the Wassuk HMA are receiving heavy use in areas grazed solely by wild horses as there has been no permitted livestock grazing within this HMA. When plants are not over utilized there is an adequate amount of photosynthetic material remaining for the production of carbohydrates to meet the vegetation's growth and respiration demands. The plants enter dormancy with more root reserves for next year's growth and reproduction. By bringing wild horse numbers back to AML, BLM can prevent or reduce damage to springs and spring developments, which in turn will ensure greater availability of water for all of users, including wildlife and livestock.

1.6 DECISION TO BE MADE

The BLM authorizing officer would determine whether or not to implement the proposed gather in order to bring the wild horse population closer to AML and to vaccinate all of the captured mares that would be released with fertility control vaccine in order to maintain population sizes and to get closer to the established AML and avoid further deterioration of the range that is resulting from wild horse overpopulation. The authorizing officer's decision would not set or adjust AMLs, nor would it adjust livestock use, as these were set through prior public decision-making processes.

Approximately 400 excess wild horses, including all wild horses residing outside the HMA boundaries, would be removed from the range to bring the population closer to the established AML range consistent with the requirements of the WFRHBA.

1.7 SCOPING AND IDENTIFICATION OF ISSUES

All individuals identified on the CCDO mailing list will be mailed a letter furnishing information on how to access the BLM website where the Wassuk Gather Plan/EA will be made available for public review and comment. The Yerington Paiute Tribe and the Walker River Paiute Tribe were notified of the proposed gather with a letter sent on June 20, 2012. The letter included a description of the proposed project, a map of the project location, and an invitation for comments or feedback regarding the project. No formal response detailing any concerns has been brought forward by the Tribes to date, but consultation is ongoing.

BLM internal, external, public, State and federal agency coordination and Native American Tribes consultations were also completed during the development of the previously prepared EAs as listed under section 1.5 Relationships to Statutes, Regulations, policy, Plans or Other Environmental Analysis.

The issues listed below were identified as a result of BLM's internal scoping relative to the proposed gather and removal of excess wild horses and contraceptive control treatment of mares that would be identified for release back to the Wassuk HMA.

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, riparian/wetland, and cultural resources. Measurement indicators for these issues include:

    - Expected forage utilization.
    - Potential impacts to vegetation/soils and riparian/wetland resources.

3. Impacts to wildlife, including migratory birds and BLM special status species, and their habitat. Measurement indicators for these issues include:

    - Potential for temporary displacement, trampling or disturbance.
    - Short and long term for potential competition over forage and water.

2.0 PROPOSED ACTION AND ALTERNATIVES

This section of the EA describes the Proposed Action and alternatives, including those alternatives that were considered but eliminated from detailed analysis. Two alternatives are considered in detail and are described below in Sections 2.1 Proposed Action and 2.2.1 No Action Alternative.

2.1 PROPOSED ACTION

Under the Proposed Action, approximately 498 wild horses would be gathered from within and outside of the Wassuk HMA (depending on gather efficiency of approximately 80%) while removing approximately 400 excess wild horses. The proposed gather would begin in September 2012 and would take approximately two weeks to complete. All gather operations would be completed in accordance with the Standard Operating Procedures (SOPs) located in Appendix C SOPs for Wild Horse (or Burro) Gathers. Based on existing holding space and budgetary limitations, the CCDO may not be able to meet necessary removal targets in order to achieve the low range of AML with the initial gather so follow-up gathers would be required to achieve AML and implement population control efforts. The BLM intends to continue with population control activities and maintain AML over the next 10 years by returning every 2-3 years to re-treat mares with fertility control vaccine as well as to remove excess wild horses as specified in this EA.

Based on 2012 population estimate, approximately 400 excess wild horses would be removed from the range. Approximately 98 of the captured wild horses would be released back into the Wassuk HMA after treating/retreating an estimated 39 mares with the fertility control vaccine (PZP-22) and adjusting the sex ratio to favor males (60% males to 40% females). The use of the PZP-22 should aid in reaching and maintaining AML by reducing the population growth rate and reduce the number of excess wild horses that would need to be removed in the future.

If gather efficiencies utilizing a helicopter does not achieve the desired goals of the Proposed Action, water/bait trapping may be utilized to capture sufficient numbers of horses to achieve these targets. The overall management objective is to manage a breeding population of 110 wild horses (low AML) within the Wassuk HMA with a desired sex ratio that favors males (60% stallions). All wild horses residing outside of established HMA boundaries would be removed regardless of sex and age and would not be relocated back to the HMA.

The Proposed Action would allow BLM to achieve significant progress toward attainment of rangeland health standards requirements and resource objectives. These management actions are also supported by a recent report received from the Humane Society of the United States (HSUS) which recommends that the BLM increase the level of use of fertility control and other population control methods (sex ratio adjustments, geldings, etc.). http://www.blm.gov/wo/st/en/info/newsroom/2011/july/ hsusstatement.html.

The Proposed Action is consistent with current BLM policy and direction to reduce gather frequencies and the number of animals that need to be removed from the range over time through application of fertility control and adjustment of sex ratios to favor stallions, which reduces the proportion of the population that would give birth to foals.

Managing wild horse populations within the HMA at AML reduces movement of horses outside of the HMA in their search for forage and water. The Proposed Action would also reduce the number of excess wild horses that need to be removed from the HMAs over the long term, resulting in fewer wild horses being placed in short or long-term holding facilities with associated cost savings for the United States.

All of the mares identified for release would be treated with a two-year PZP-22 or similar vaccine and then released back to the open range. Fertility control treatment would be conducted in accordance with the approved Standard Operating and post-treatment monitoring Procedures (See the SOPs for Population Level Fertility Control Treatments in Appendix D). Post-gather, every effort would be made to return the released horses to the same general area from which they were gathered.

The Wassuk HMA gather would begin on or around September, 2012. Several factors such as allocated funding, animal physical condition, herd health, weather conditions, or other considerations could result in schedule adjustments. Gather operations would be conducted in accordance with the SOPs described in the National Wild Horse and Burro Gather Contract (see Appendix C). The primary gather (capture) method would be the helicopter drive method with occasional helicopter assisted roping (from horseback). Trap sites and temporary holding facilities would be located at heavily surface disturbed areas (See maps located in Appendix A for proposed locations of these facilities) whenever possible. New undisturbed areas selected as potential trap sites or holding facilities would be inventoried for cultural resources by qualified BLM personnel. If cultural resources are encountered, the locations would be avoided, unless they could be mitigated to eliminate any impacts.

An Animal and Plant Inspection Service (APHIS) or other veterinarian may be on-site during the gathers, as needed, to examine animals and make recommendations to the BLM for care and treatment. All wild horses identified as excess including any weaned foals, yearlings or orphaned foals and any wild horses residing outside the HMA boundaries would be removed and made available for adoption to qualified individuals. Old, sick or lame horses unable to maintain an acceptable body condition greater than or equal to a Henneke 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 IM 2009-041). Refer to: http://www.blm.gov/wo/st/en/info/regulations/Instruction Memos and Bulletins/national instruction/2009/IM 2009-041.html.

Wild horse data including sex and age distribution, condition class information (using the Henneke rating system), color, size and other information may also be recorded. Hair samples may be collected on about 25-100 animals to assess the genetic diversity of the herds.

2.2 ALTERNATIVES

2.2.1 NO ACTION ALTERNATIVE

The BLM would not conduct a capture/gather at this time. Direct management of the wild horse populations in the Wassuk HMA would be deferred to a later date. No wild horses would be removed from areas outside the HMA boundaries. The horse populations would not be

maintained at the AML, which represent the wild horse population compatible with ensuring a thriving natural ecological balance. The fertility control vaccine would not be administered to mares within the HMA to control population growth rate and maintain the wild horse population within the established AML range at this time. A greater number of excess wild horses would need to be removed in future gathers to achieve AML and to reverse resource degradation from an overpopulation of wild horses. Compliance with the CRMP or with promoting a healthy natural ecological habitat in conformance with rangeland health standards and the provisions of Section 1333 (2) of the WFRHBA would not be met.

Gathers would be scheduled in the future depending upon National and State budget and gather priorities. The current populations would be allowed to increase until the next gather occurred to remove excess wild horses. If the HMA is not gathered an emergency gather could take place as the wild horses in this area have greatly exceeded AML and forage and water availability is low in this area.

The No Action Alternative would not achieve the Purpose and Need identified in Section 1.3. However, it is analyzed in this EA to provide a basis for comparison with the action alternative, and to assess the effects of not conducting a gather or completing the other habitat enhancement or rehabilitation components at this time. The No Action Alternative would not be consistent with the requirement under the WFRHBA to remove excess wild horses and burros from public lands and is also not in conformance with regulatory provisions for management of wild horses and burros as set forth at 43 CFR § 4700. The No Action Alternative would not result in achievement of the established AML or progress towards the improvement of rangeland conditions.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

2.3.1 USE OF BAIT AND/OR WATER TRAPPING

The use of bait and water trapping, though effective in specific areas and circumstances, would not be timely, cost-effective or practical as the sole or primary gather method for this HMA due to the timing of the gather. However, water or bait trapping may be used on a limited or supplementary basis in order to achieve the desired goals of the Proposed Action if gather efficiencies are too low using a helicopter. The number or horses needed to be gathered and access problems to water sources on both private and seasonally on public lands within and outside the HMAs would make it difficult to restrict wild horse access to selected water trap sites to the extent necessary to capture the majority of the excess wild horses. As a result, this alternative was dismissed from detailed analysis.

2.3.2 REMOVE OR REDUCE LIVESTOCK WITHIN THE HMA

For the Wassuk HMA this action 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 FLPMA. It would also be inconsistent with the WFRHBA, which directs the Secretary to immediately remove excess wild horses. Also livestock grazing cannot be reduced without complying with applicable statutes and regulations, including amendment of land-use plan under 43 CFR Part 1600 and public decision-making process prior to any reductions in livestock grazing as required under 43

CFR Part 4100. The CRMP has identified the lands within the project area as available for livestock grazing. Any action to eliminate livestock grazing would be inconsistent with the CRMP, absent a land-use plan amendment. Under the 43 CFR 1610.5-3, all actions approved or authorized by the BLM must conform to the existing land use plan. A plan amendment – which would be subject to separate regulatory requirements for a public decision-making process -- is outside the scope of this EA, which is to gather, treat and remove wild horses from within and adjacent to three HMAs.

The allocation of forage for wildlife, livestock and wild horses was determined previously through various public decision-making processes (See Section 1.5). Reallocation of forage available for livestock to wild horses would not necessarily maintain a thriving natural ecological balance since wild horses use rangelands differently than livestock. Livestock grazing can be confined to specific pastures, limited periods of use, and specific seasons of use, so as to minimize impacts to vegetation during the critical plant growing season. In contrast, wild horses are present on the range year-round, may use the range differentially, and their impacts cannot be controlled through the establishment of a grazing system but rather by controlling the wild horse population at a level that does not adversely impact range resources and conflict with other multiple uses of the land.

This would only be effective for a very short term as the horse population would continue to increase. Wild horses are a year-round presence on the public lands, in contrast to livestock for which grazing use is regulated in response to forage and water availability and resource concerns. Eventually the HMA and adjacent lands would no longer be capable of supporting the horse population. Removing excess wild horses now and treating released mares with a fertility control vaccine would delay the need for future removals of a large number of excess horses. Sheep are currently permitted to graze on approximately 95% of the Wassuk HMA. The HMA includes portions of four allotments. Each allotment has a different season of use, and sheep are not confined to the HMA at any one time. The manner that sheep are herded allows for a more controlled use pattern of vegetation. Sheep are herded through the allotment rarely crossing the same ground twice. They have not been grazed or trailed on Black Mountain, Butler Mountain and the east portion of the Gray Hills allotments since around 2002 as there has not been enough forage available in these allotments due to excess numbers of wild horses. The remaining 5% of the HMA is located within the cattle grazed East Walker Allotment. The location of the HMA within this allotment is in an area that is difficult for cattle to use. The terrain is steep and no water is located there. Cattle are not likely to use that portion of the allotment.

2.3.3 DESIGNATE THE WASSUK HMA AS A "WILD HORSE RANGE"

Designate the Wassuk HMA as a "Wild Horse Range". This action under 43 CFR 4710.3-2 would require the amendment of the CRMP, which is outside the scope of this EA. Only the BLM Director or Assistant Director (as per BLM Manual 1203: Delegation of Authority), may establish a Wild Horse Range after a full assessment of the impact on other resources through the land-use planning process. As this is not an "exclusive" designation, it potentially would not change the level of livestock grazing permitted to occur in the area. There are currently three designated Wild Horse Ranges in the western United States that are managed principally for wild horses, and one Wild Burro Range managed principally for wild burros, consistent with 43 CFR 4170.3-2. These are the Pryor Mountain Wild Horse Range in Montana; the Little Book Cliffs

Wild Horse Range in Colorado; the Nevada Wild Horse Range and the Marietta Wild Burro Range in Nevada.

2.4.4 GATHERING THE HMA TO THE UPPER AML RANGE

A post-gather population size at the upper level of the AML would result in AML being exceeded with the next foaling season (spring 2013). This would be problematic for several reasons. The upper levels of the AML established for the HMA represents the maximum population for which a thriving natural ecological balance can be maintained. The lower level represents the number of animals that should remain in the HMA following a wild horse gather in order to allow for a periodic gather cycle of approximately every 4 years and to prevent the population from exceeding the established AML between gathers. The need to gather below the upper range of the AML has been recognized by the Interior Board of Land Appeals (IBLA), which has held that AML means, "that 'optimum' number of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range" (109 IBLA 119 API 1989). "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" (118 IBLA 75).

Additionally, gathering to the upper range of AML would result in the need to follow up with another gather within one year, and could result in overutilization of vegetation resources, damage to the rangeland, and increased stress to wild horses. For these reasons, this alternative did not receive further consideration in this document.

2.4.5 CONTROL OF WILD HORSE NUMBERS BY NATURAL MEANS

This alternative would use natural means, such as natural predation and climatic events (severe winters, drought, etc…), to control the wild horse population. This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to protect the range from deterioration associated with an overpopulation of wild horses. It is also inconsistent with the CRMP which directs the BLM to "Remove excess wild horses and burros from public lands to preserve and maintain a thriving (natural) ecological balance and multiple-use relationship". The alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past. Wild horse populations in the Wassuk HMA are not substantially regulated by predators, as evidenced by the 20% annual increase in the wild horse populations and has not experienced a major die-off due to climatic events. This alternative would result in a steady increase in the wild horse numbers which would continue to exceed the carrying capacity of the range until all of the usable forage is exhausted, after which a substantial mortality event would be expected. However, prior to a substantial mortality event occurring, the majority of native grasses would have been displaced by invasive weeds substantially reducing the carrying capacity of the HMA for the foreseeable future. In addition many wildlife species would be lost from the HMA as they rely on the native vegetation or on species which rely on native vegetation. For these reasons, this alternative was eliminated from further consideration.

2.4.6 RAISING THE APPROPRIATE MANAGEMENT LEVELS FOR WILD HORSES

The AMLs were established through a FMUD process following completion of an in-depth analysis of habitat suitability, resource monitoring, population inventory data, and public input into the final decision-making. This alternative was not brought forward for detailed analysis

because it is outside of the scope of the analysis, and is inconsistent with the CRMP. Furthermore, in order to raise the AML for wild horses, monitoring data would need to indicate that sufficient forage, water and space are available to support wild horse numbers above AML. The movement of wild horses to areas outside the HMAs and available monitoring data and observations, however, indicate that the current population of wild horses is negatively impacting rangeland health and that excess animals need to be removed in order to achieve a thriving natural ecological balance. The established AML for the Wassuk HMA is 110-165 wild horses with the current population estimate at 623 horses (over 3 ½ times the high AML). The upper limit of the AML range is the maximum number of wild horses that can be maintained within a HMA while maintaining a thriving natural ecological balance and multiple use relationship on the public lands. When wild horse AMLs are exceeded and maintained over time, overutilization of vegetation and water resources by wild horses occurs, decreasing plant diversity and in turn changing habitat structure (Beever and Brussard 2000). Presently heavy use is occurring on key forage grass species causing substantial areas of the HMA to sustain very few forage grasses. This alternative would not allow the BLM to attain the management objectives identified in the CRMP or meet or make progress towards meeting the S&Gs.

2.4.7 ONLY REMOVE ALL WILD HORSES OUTSIDE THE HMA

This alternative (as in the Proposed Action) would remove all wild horses residing outside the HMAs since based on 2010 and 2011 population inventories, over 250 wild horses are currently residing outside the HMAs in areas not managed for wild horses. Although this alternative would address need to remove wild horses outside the HMAs, the Wassuk HMA wild horse population within the boundaries of the HMA also exceeds AML. This alternative would therefore not meet the need to bring the wild horse population back to AML within all of the HMAs in order to maintain a thriving natural ecological balance.

2.4.8 LETTING NATURE TAKE ITS COURSE

This alternative would leave excess wild horses on the range under the view that the population would eventually self-regulate when the range can no longer sustain the existing wild horse population. Areas within the HMAs have been documented as having heavy to severe grazing use by wild horses. This over-population has also resulted in wild horses leaving the HMAs to take up residence outside the HMA boundaries in their search for food and water. If the population continues to increase, this would put further pressure on vegetative and water resources, potentially resulting in irreversible degradation of some of these resources. The damage to rangeland resources that could result from excess numbers of wild horses is also contrary to the WFRHBA. If the vegetative and water resources are inadequate to meet the needs of the excessive numbers of wild horses on the range, the weaker animals, generally the older animals and the mares and foals, are the first to be impacted. The resulting population would be heavily skewed towards the stronger stallions which could lead to significant social disruption in the HMAs. By managing the public lands in this way, the vegetative and water resources would likely be impacted so severely as to reach the point where they have no potential for recovery. For these reasons, this alternative was eliminated from further consideration.

2.4.9 ZEROING OUT THE HMA

This action would require an amendment of the CRMP, which is outside the scope of this EA.

2.4.10 FIELD DARTING PZP-22 TREATMENT

In public comments, it has been suggested that BLM administer PZP in the one year liquid dose inoculations by field darting the mares. This method is currently approved for use and is being utilized by the BLM in other HMAs. This alternative was dismissed from this detailed study for the following reasons: (1) the use of one-year PZP would not achieve the Proposed Action of achieving AML within the HMAs, without removing excess animals within and outside HMA boundaries; (2) the number of wild horses in the Wassuk HMA makes it unrealistic to be able to clearly identify all mares targeted for treatment; and (3 limited approachability (except via pickup truck) to the target wild horses. The logistics of implementing this method in tandem with bait and/or water trapping is also impractical for the reasons listed above.

2.4.11 CONTROL THE EXCESS WILD HORSE POPULATIONS WITH USE OF PZP-22 ONLY

This alternative would gather a significant portion of the existing population (95 percent) and implement fertility control treatments only, without removal of excess wild horses. This alternative would not bring the wild horse population to AML and the wild horse population would continue to grow, adding to the current wild horse overpopulation, albeit at a slower rate of growth. By failing to remove excess wild horses, this alternative would allow resource concerns to escalate, and implementation of this alternative would incur significant gather and fertility control costs without achieving a thriving natural ecological balance. This alternative would not meet the purpose and need for the Proposed Action and did not receive any further consideration.

2.4.12 MAKE ON-THE-GROUND AND INDIVIDUALIZED EXCESS WILD HORSE DETERMINATIONS PRIOR TO REMOVAL

This alternative to make on-the-ground and individualized excess wild horse determinations prior to removal was recommended through the public review process under the view set forth by some commenters that a tiered or phased removal of wild horses from the range is mandated by the WFRHBA. Specifically, this alternative would involve a tiered gather approach, whereby the BLM would first identify and remove old, sick or lame animals in order to euthanize those animals on the range prior to gather. Second, the BLM would identify and remove wild horses for which adoption demand exists by qualified individuals, such as younger wild horses or wild horses with unusual and interesting markings.

A tiered approach assumes that only a portion of the wild horse population is excess and that some number of horses would still remain on the range following the gather. This assumption does not apply, however, to wild horses outside the boundaries of the HMAs, as all of those horses are excess and need to be removed.

With respect to removal of excess wild horses from within the HMA boundaries, this alternative could be viable in situations where the project area is contained, the area is readily accessible and wild horses are clearly visible, and where the number of wild horses to be removed is so small that a targeted approach to removal can be implemented. Under the conditions present within the gather area, however, this alternative is impractical, if not impossible, as well as less humane for a variety of reasons.

The BLM does euthanize old, sick or lame animals on the range when such animals have been identified. This occurs on an on-going basis and is not limited to wild horse gathers. During a gather, if old, sick or lame animals are found and it is clear that an animal's condition requires the animal to be put down, that animal is separated from the rest of the group that is being herded so that it can be euthanized on the range. However, wild horses that meet the criteria for humane destruction because they are old, sick or lame usually cannot be identified as such until they have been gathered and examined up close (for example, to examine the horse's mouth to determine whether the horse has lost all its teeth or to check whether the horse is club footed). Old, sick and lame wild horses meeting the criteria for humane euthanasia are also only a tiny fraction of the total number of wild horses to be gathered, comprising on average about 0.5 percent of gathered wild horses. Due to the challenges of approaching wild horses close enough to make an individualized determination of whether a horse is old, sick or lame, and of accessing wild horses over thousands of acres of varied topography and terrain, it would be virtually impossible to conduct a phased culling of such wild horses on the range without actually gathering and examining the wild horses.

Similarly, rounding up and removing wild horses for which an adoption demand exists, before gathering any other excess wild horses would be both impractical and much more disruptive and traumatic for the animals. Recent gathers have had success in adopting out approximately 30 percent of excess wild horses removed from the range on an annual basis. The terrain challenges, difficulties of approaching the wild horses close enough to determine age and whether they have characteristics (such as color or markings) that make them more adoptable, the impracticalities inherent in attempting to separate the small number of adoptable wild horses from the rest of the herd, and the impacts to the wild horses from the closer contact necessary, makes such phased removal a much less desirable method for gathering excess wild horses. This approach would create a significantly higher level of disruption for the wild horses on the range and would also make it much more difficult to gather the remaining excess wild horses. Furthermore, if the BLM plans to apply any population controls to gathered wild horses prior to release, it would be necessary to gather more than just the excess wild horses to be removed, making a phased approach to removal both unnecessary and counter-productive.

Making a determination of "excess" as to a specific wild horse under this alternative, and then successfully gathering that individual horse would be impractical to implement (if not impossible) due to the terrain challenges and difficulties approaching the wild horses close enough to make an individualized determination, and would be extremely disruptive to the wild horses due to repeated culling and gather activities over a short period of time. Making a determination of excess in this way would greatly increase the potential stress placed on the animals due to repeated attempts to capture specific animals and not others in the band. This in turn would increase the potential for injury, separation of mare/foal pairs, and possible mortality. This alternative would be impractical to implement (even if it were possible), would be cost-prohibitive, and would be unlikely to result in the successful removal of excess wild horses or application of population controls to released wild horses. This approach would also be less humane and more disruptive and traumatic for the wild horses. This alternative was therefore eliminated from any further consideration.

2.4.14 ALTERNATIVE CAPTURE TECHNIQUES INSTEAD OF HELICOPTER TO CAPTURE EXCESS WILD HORSES

- 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 HMA, 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.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter identifies and describes the current condition and trend of elements or resources in the human environment which may be affected by the Proposed Action or Alternatives and the environmental consequences or effects of the action(s). Direct impacts are those that result from the management actions while indirect impacts are those that exist once the management action has occurred.

In accordance with the BLM's NEPA Handbook (H-1790) (BLM, 2008) internal scoping was conducted by an interdisciplinary team to identify potential resources that may be impacted by the Proposed Action and No Action Alternatives. Relevant components of the human environment which would be either affected or potentially affected by the Proposed Action or No Action alternatives are discussed below.

3.1 GENERAL SETTING

The Wassuk HMA is located approximately 12 miles east-southeast of Yerington, NV in Mineral and Lyon Counties. The HMA encompasses approximately 51,750 acres and consists of north-south trending mountain ranges surrounded by valley bottoms. The HMA is located on both public lands administered by the Carson City District and private lands and encompasses portions of three livestock grazing allotments (See maps located in Appendix A).

The Butler Mountain Allotment is located in and around the Wassuk Mountain Range in Mineral County. It lies southeast of Yerington, NV and west of Walker Lake. There is a total of 46,916 acres of public land and no private land. There are no fences crossing the allotment to create pastures.

The Black Mountain Allotment is located in Mineral County, approximately 12 miles east-southeast of Yerington, NV. The Walker River Indian Reservation forms the eastern boundary, while Reese River Canyon forms the southern boundary. It is generally mountainous with many elevations ranging from approximately 4100 to 8102 feet. There is a total of 14,618 acres of public land and no private land. There are no fences crossing the allotment to create pastures

The Gray Hills Allotment is located in Mineral County and Lyon County, NV, and is approximately 12 miles south of Yerington, NV. A portion of the west boundary is made up of the Toiyabe National Forest, and the Wassuk Mountain Range makes up the eastern side. The East Walker River runs through the west half of the allotment. The allotment consists of 100,583 acres of land administered by the BLM and 2,200 acres of private lands. Elevations range from 4,549 feet near the East Walker River to 9,191 feet at the Peak of Bald Mountain in the Wassuk Mountain Range.

Refer to the documents referenced in Section 1.5.1 for more and Appendix A for maps that display the allotments and the HMA.

The descriptions of the Affected Environment for the No Action Alternative would be the same as that for the Proposed Action which are described below.

3.2 SUPPLEMENTAL AUTHORITIES

Appendix 1 of BLM's NEPA Handbook (H-1790-1) identifies Supplemental Authorities that are subject to requirements specified by statute or Executive Order (EO) and must be considered in all BLM environmental documents. Table 3 below lists the Supplemental Authorities and their status in the project area. Supplemental Authorities that may be affected by the Proposed Action or Alternatives are further described in this EA.

Table 3. Supplemental Authorities*

Resource	Present Yes/No	Affected Yes/No	Rationale
Air Quality	Yes	No	During implementation of the Proposed Action, there would be a slight increase in vehicle emissions and particulates from gather activities and equipment. Overall air quality, however, would not be affected. None of the anticipated impacts to Air Quality would be anticipated to exceed the National Ambient Air Quality Standards.
Areas of Critical Environmental Concern	No	No	None exist within the proposed gather area or the vicinity.
Cultural Resources	Yes	No	See analysis in Section 3.4.8.
Environmental Justice	No	No	The proposed action would not adversely affect any low-income or minority populations.
Farm Lands (prime or unique)	No	No	None exist within the proposed gather area or the vicinity.
Floodplains	No	No	None exist within the proposed gather area or the vicinity.
Invasive, Nonnative Species	Yes	Yes	See analysis in Section 3.4.3.
Migratory Birds	Yes	No	The gather would take place outside of the Migratory Bird nesting season. Reducing wild horse populations within the HMA to AML would benefit habitat that migratory birds depend upon.
Native American Religious Concerns	Yes	No	See analysis in Section 3.4.9.
Threatened or Endangered Species (animals)	No	No	After consulting with the BLM wildlife biologist and the United States Fish and Wildlife Service (USFWS) website for NV, no known federally listed animal species occur within the HMA.
Threatened or Endangered Species (plants)	No	No	After consulting with the BLM wildlife biologist and the USFWS website for NV, no known federally listed plant species occur within the HMA.
Wastes, Hazardous or	Yes	No	During implementation of the Proposed Action, there is a slight risk of spillage of oil or gasoline from

Resource	Present Yes/No	Affected Yes/No	Rationale
Solid			vehicles or equipment. Should such a spillage occur, clean up actions would be taken; this resource is not affected.
Water Quality (Surface/Ground)	Yes	No	No class waters or beneficial uses are designated within the HMA, therefore, only the descriptive water quality standards pertaining to all surface waters in NV (NAC 445A.121) apply. Based on this, no existing data indicates that water quality is being impacted from wild horses or would be impacted by gather operations.
Wetlands/Riparian Zones	Yes	Yes	See analysis in Section 3.4.7.
Wild and Scenic Rivers	No	No	None exist within the proposed gather area or the vicinity.
Wilderness/WSA	No	No	None exist within the proposed gather area or the vicinity.

**See H-1790-1 (January 2008) Appendix 1 Supplemental Authorities to be Considered.*
~ Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.
~ Supplemental Authorities determined to be Present/May Be Affected may be carried forward in the document.

3.3 RESOURCES OR USES OTHER THAN SUPPLEMENTAL AUTHORITIES

The following resources or uses, which are not Supplemental Authorities as defined by BLM's Handbook H-1790-1, are present in the project area or vicinity. BLM specialists have evaluated the potential impact of the Proposed Action on these resources and documented their findings in Table 4 below. Resources or uses that may be affected by the Proposed Action or Alternatives are further described in this EA.

Table 4. Resources or Uses Other Than Supplemental Authorities

Resource or Issue**	Present Yes/No	Affected Yes/No	Rationale
BLM Sensitive Species (animals)	Yes	Yes	See analysis in Section 3.4.6.
BLM Sensitive Species (plants)	No	No	No known sensitive species plants are known to exist within the HMA and gather operations would take place in previously disturbed locations.
Forest Resources	Yes	No	Forestry resources would not be affected by the wild horse gather; no trees would be disturbed or removed during the gather.
General Wildlife	Yes	Yes	See analysis in Section 3.4.5.
Public Health and Safety	Yes	Yes	See analysis in Section 3.4.11.

Resource or Issue**	Present Yes/No	Affected Yes/No	Rationale
Land Use Authorization	No	No	The Proposed Action or Alternatives would have no effect on land use authorizations.
Lands with Wilderness Characteristics	No	No	Lands with Wilderness Characteristics would not be affected by a horse gather.
Livestock Grazing	Yes	Yes	See analysis in Section 3.4.4.
Minerals	No	No	Mineral resources would not be affected by a horse gather.
Paleontological	No	No	Under the Proposed Action, vehicles would remain on existing roadways, and the gather of wild horses is not expected to expose or affect any paleontological resources, if present.
Recreation	Yes	No	Although dispersed recreation may occur in the project area, the Proposed Action would be limited to several days and no closure of roads or trails would occur.
Socioeconomics	Yes	Yes	See analysis in Section 3.4.10.
Soils	Yes	No	Although during the gather there would be minor surface disturbance to soils within the project area, overall, soils would not be affected by the Proposed Action or Alternatives. Reducing the number of wild horses in the area could benefit soils in areas that are impacted by intensive horse use caused by trampling, thereby reducing the risk for soil erosion.
Travel Management	No	No	The Proposed Action or Alternatives would have no effect on Travel Management. No road closures would occur and existing roads would be utilized.
Vegetation	Yes	Yes	See analysis in Section 3.4.2.
Visual Resources	Yes	No	The Proposed Action or Alternatives would actually improve the overall visual quality of the project area by reducing forage loss from consumption. This would preserve the Class II Visual Resources Management class for this designated Scenic Area.
Wild Horses	Yes	Yes	See analysis in Section 3.4.1.

***Resources or uses determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.*

~ Resources or uses determined to be Present/May Be Affected may be carried forward in the document.

3.4 RESOURCES PRESENT AND BROUGHT FORWARD FOR ANALYSIS (All Resources)

Environmental consequences are potential direct/indirect impacts to resources that may result from the Proposed Action or No Action Alternative, as well as identifies the potential mitigation measures and monitoring needs associated with the specific resources. The following resources are present in the area and may be affected by the Proposed Action. The direct and indirect impacts that would be expected to result with implementation of the Proposed Action or No Action alternatives are discussed in detail below. The description of the Affected Environment for the No Action Alternative would be the same as that for the Proposed Action.

3.4.1 WILD HORSES

AFFECTED ENVIRONMENT

BACKGROUND OF THE WASSUK HMA AND AML

After the passage of the WFRHBA, the BLM established Herd Areas (HA) for BLM-managed lands with known populations of wild horses. HMAs were established later for those HAs through a land use planning process that set the initial and estimated herd size that could be managed while still preserving and maintaining a thriving natural ecological balance and multiple-use relationships for the area. An area must have four essential habitat components to be designated as an HMA including: forage, water, cover and space (BLM 2010). The CRMP (2001) reaffirmed areas designated for the long-term management of wild horse populations.

The allocation of forage for wildlife, wild horses, and livestock was established through FMUDs, which set the AUMs for each category. During the summers of 2010 and 2011, the BLM conducted field investigations within the Wassuk HMA to determine the level of forage utilization attributable to wild horses. Monitoring data was collected using the Range Utilization Key Forage Plant Method. Species for which BLM collected utilization data were Indian ricegrass (*Achnatherum hymenoides*), needlegrass (*Stipa spp.)* and Sandberg bluegrass (*Poa secunda*). Heavy (61-80 percent) utilization of forage by wild horses has been documented within the Wassuk HMA (64% in 2009 and 67% in 2010). Heavy utilization of forage by wild horses is based on the following: observation of wild horses in the area where data was collected; observed presence or absence of horse sign (feces); and use of key forage species.

The AML is the range within which a wild horse population can be maintained for the long-term based on habitat suitability and monitoring data (adaptive management). The AML sets a maximum number of wild horses which results in a thriving natural ecological balance and avoids deterioration of the range (BLM 2010).

WILD HORSE POPULATION INVENTORY AND GATHER HISTORY

Since the enactment of the WFRHBA and subsequent establishment of AMLs, the BLM has periodically conducted gathers to maintain wild horse populations within AML. For these HMAs, population growth rates based on available population inventory information is estimated to range from 10 to 15 percent per year, although growth rates up to 25 percent per year are known to occur among some wild horse populations (United States Geological Service (USGS) 2011).

No gathers removing excess wild horses has ever occurred within this HMA. However, a gather was conducted in this HMA in the 1980's in which the Proposed Action was to apply a contraceptive to mares. After treatment, all mares were returned to the range, none were removed. The effects of this fertility control would have slowed some of the population growth in the years immediately following implementation of the controls.

A population inventory was completed for the Wassuk HMA in June of 2011. A total of 519 horses were counted during the aerial inventory. The Wassuk HMA has a relatively high rate of wild horse population increase, at approximately 20 percent annually. The current population is estimated to be around 623 wild horses for the Wassuk HMA which includes 2012 foals.

Current conditions of vegetation and water sources on the HMA (evidenced by monitoring and site visits by BLM staff) are worsening due to drought conditions being experienced in the State. The number of wild horses on this HMA is in exceedance of AML by over 350%. Excess numbers of wild horses are contributing to over utilization of the vegetation as evidenced by heavy use in most areas of the HMA (that are accessible to wild horses) solely attributed to wild horse use as there has been no livestock grazing for at least 10 years in these areas due to the lack of available forage and water. Vegetation shows heavy and severe utilization by wild horses and the water resources/springs in the area show heavy utilization and trampling as well. The drought conditions along with the overpopulation of wild horses are contributing to the overall decline of rangeland and wild horse health in this HMA.

RESULTS OF WIN EQUUS POPULATION MODELING

The Win Equus Population Model was designed to project how wild horse populations may react to different management techniques. The Alternatives were modeled using Version 3.2 of the Win Equus population model results (Jenkins, 2000) (See Appendix B for the Win Equus Population modeling results). The results from the model indicate that over the next ten years the population rate of increase can be reduced from approximately 17% to 10.7% for the Wassuk HMA with PZP-22 contraception if boosters are given every three years. This equates to 112 fewer excess wild horses that would need to be gathered and placed into the adoption program or sanctuaries over an 11-year period. Table 5 below indicates through the "Total Number Removed" column for the "No Action" alternative that 1449 excess horses would need to be removed in 11 years-time if excess wild horses are not removed and no population control measures are implemented under the Proposed Action.

Table 5: Summary of Population Modeling Results Wassuk HMA

Population Model	Avg. Pop. Size (11 years)*	Avg. Growth Rate Next 10 Years (%)*	Total Number Gathered*	Total Number Removed*	Total Number Treated*
Proposed Action	210	10.7	753	542	32
Removal Only* **	213	13.3	670	574	0
No Action	1650	17.3	0	1449**	0

* Median Trial

** Median number of horses needed to be removed to equal the estimated population size under the proposed action after 11 years.
Female foals (fillies) would not be treated.
***The "Removal only" scenario would be removal of excess wild horses only with no fertility control treatments applied to animals that remain in the Wassuk HMA.

AML for the Wassuk HMA was determined by allocating available forage between wild horses, livestock, and wildlife by allotment. The AML within the Gray Hills, Black Mountain and Butler allotments for the Wassuk HMA were established through the approval of the FMUD for the Wassuk HMA in 1997 and were set at a range of 110-165. The population counts and estimates are detailed below in Table 6.

Table 6: Wassuk HMA Population Census Data

Year	Action	Number of Horses Counted	Number of Horses Outside the HMA
2012	Population Estimate	623*	---
2011	Population Inventory Count	519	251
2010	Population Inventory Count	302	109
2008	Population Inventory Count	247	4.5
2000	Population Inventory Count	72	2
1998	Population Inventory Count	94	3.5
1997	Population Inventory Count	79 (incomplete count)	2
1995	Population Inventory Count	141	3.5
1994	Population Inventory Count	116	3.5
1993	Population Inventory Count	123	3.5
1991	Population Inventory Count	157	3.5
1989	Population Inventory Count	174	4
1984	Population Inventory Count	228	3
1979	Population Inventory Count	151	---
1975	Population Inventory Count	103	---
1973	Population Inventory Count	35	---

*The current population is estimated from the most recent inventory completed in June 2011, and includes an estimated population growth rate of 20% for the HMA.

DIET AND DIETARY OVERLAP WITH OTHER SPECIES

Wild horses are not alone in their dietary needs on the range, which they share with many other ungulates also looking for forage. Smith (1986) determined that cattle, domestic sheep, elk, and bighorn sheep were the most likely to negatively interact with wild horses. However, elk is not an issue for the Wassuk HMA

Because of physiology, wild horses primarily eat native bunchgrasses when available; consequently due to different food preferences, diet overlap between wild horses, deer, and pronghorn rarely reaches above 20% (Hubbard and Hansen 1976, R. Hansen, R. Clark, and W. Lawhorn 1977, Meeker 1979, Hanley and Hanley 1982). Dietary overlap of wild horses with

desert bighorn sheep has been documented around 50% when averaged throughout the year (Hanley & Hanley 1982, Hansen et al. 1977).

The dietary overlap between wild horses and cattle is much higher, and averages between 60 and 80% (Hubbard and Hansen 1976, R. Hansen, R. Clark, and W. Lawhorn 1977, Hanley 1982, Krysl et al. 1984, McInnis and Vavra 1987). Although horses and cattle are often compared as grazers, horses have been cited as more destructive to the range than cattle due to their digestive system and grazing habits. Horses are cecal digesters, unlike most other ungulates including cattle, pronghorn, and others, which are ruminants (Hanley and Hanley 1982, Beever 2003). Cecal digesters do not ruminate, or have to regurgitate and repeat the cycle of chewing until edible particles of plant fiber are small enough for their digestive system. Ruminants, especially cattle, must graze selectively, searching out digestible tissue (Olsen and Hansen 1977). Horses, however, are one of the least selective grazers in the West because they can consume high fiber foods and digest larger food fragments (Hanley and Hanley 1982, Beever 2003).

Wild horses can exploit the high cellulose of graminoids, or grasses, which have been observed to make up over 88% of their diet (McInnis and Vavra 1987, Hanley 1982) when available. However, this lower quality diet requires that horses consume 20-65% more forage than a cow of equal body mass (Hanley 1982, Menard et al. 2002). With more flexible lips and upper front incisors, both features that cattle do not have, wild horses trim vegetation more closely to the ground (Symanski 1994, Menard et al 2002, Beever 2003). As a result, areas grazed by horses may retain fewer plant species than areas grazed by other ungulates.

However, native plant communities can only sustain a certain level of grazing utilization. The upper limit of the AML range is the maximum number of wild horses that can be maintained within an HMA to achieve a thriving natural ecological balance and not adversely impact the plant community in combination with other multiple uses such as wildlife and livestock grazing. 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 AMLs would be expected to improve forage quantity and quality and promote healthy 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. 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.

WATER

As with many other wildlife and domestic species living in arid environments, the availability and location of water is critical not only for survival, but for habitat utilization (BLM 2002). Wild horses have been observed to travel great distances to and from water daily, and during dry summer months when less water is available from seasonal sources, horses remain slightly closer to perennial water sources than in the winter and spring (Ganskopp and Vavra 1986, R. Hansen, R. Clark, and W. Lawhorn 1977). They prefer to drink during the first part of daylight or the last, and were not observed to linger at the water source (Ganskopp and Vavra 1986).

Horses have been found to have some effect on the frequency of use of a water source by other wildlife in arid environments. One study found that in areas where bighorn sheep and horse water sources overlapped, the higher the frequency of horse use led to lower frequency of bighorn sheep use, and vice versa (Ostermann-Kelm et al. 2009).

POPULATION DYNAMICS AND DEMOGRAPHY

Wild horses usually produce one offspring per year, with an observed or projected annual herd rate of increase between 18 and 25% (Wolfe 1980, L. Eberhardt, A. Majorowicz, and J. Wilcox 1982, Eberhardt 1985, M. Wolfe, L. Ellis, and R. MacMullen 1989, Garrott and Taylor 1990, R. Garrott, D. Siniff, and L. Eberhardt 1991). Herds with a 20% rate of annual increase will more than double in four years.

Herd rate of increase is influenced by adult survival rate, foaling rate, and foal mortality. Adult horse survival is usually very high, estimated between and 80 and 97%, and may be the key determinant of wild horse population increases (Wolfe 1980, L. Eberhardt, A. Majorowicz, and J. Wilcox 1982, Garrott and Taylor 1990).

Foaling rates vary by year, depending on weather, available resources, and herd size, and differ between herds. Peak foaling rates occur between ages 8 and 20, after which reproduction is possible but much less likely. Some mares may be able to foal at age 2, but most females begin reproducing at age 3 (L. Eberhardt, A. Majorowicz, and J. Wilcox 1982, Garrott and Taylor 1990). Most foals are born between April and June (McCort 1984).

Foal mortality is highest within the first year, and has been recorded as between 2 and 10%, and as high as 20-25% (D. Siniff, J.Tester, and G. McMahon 1986, McCort 1984). Causes of foal mortality include weaknesses at birth, rejection by the mare or inattentiveness of the mare, miring in mud, severe winters and separation from mares.

Sex ratios of adult wild horse herds are nearly always skewed toward females. Experts cite three main reasons for this: differential survival of adult males and females, removal of a disproportionate number of males, and skewed foal sex ratios (Garrott and Taylor 1990). Higher mortality in male horses may be due to injuries acquired during fights for mates or under conditions of food shortage and being unable to obtain sufficient nutrients since male horses naturally need more nutrients than females (D. Siniff, J.Tester, and G. McMahon 1986).

SOCIAL INTERACTIONS

It is widely agreed that wild horses have three major types of social groups: harem groups, multiple male and female groups, and bachelor male groups. A harem group consists of one adult male and several adult females and their offspring, ranging from 2 total individuals to more than twenty (McCort 1984). Harems are stable groups, and are the type of wild horse group most often described by authors. Harem females mate almost exclusively with the harem male.

Multiple male and female groups generally have more than one adult male and several adult females and their offspring. These group compositions are not stable, and differ from harems in mating behavior and dominance structure. In such groups, one male is most likely dominant over

the others. This male prevents subordinate males from interacting with the adult females in the group and plays the dominant role during interactions with other groups (Salter and Hudson 1982). The most common male horse interactions include olfactory investigation and fecal marking. Fecal marking of the same location repeatedly by various males is common and can become very large. These stud piles are used throughout the year, commonly for 1-3 years, and are often located in highly visible areas such as the edges of trails or roads or beneath lone trees in a grassy area (Salter and Hudson 1982, McCort 1984, personal observation). Occasionally, more than one in the same general location is noted.

Bachelor male groups are composed entirely of male wild horses and are generally unstable in composition. These groups are formed by young males forced out of their family groups or older horses who have lost membership in a harem or multiple male and female groups. Group sizes have been observed as ranging from a single lone stallion to 16 horses.

Many young horses leave their natal group at sexual maturity, so there is movement of horses between harems or groups, making inbreeding rare in wild horse populations.

Another type of social structure that wild horses exhibit is a herd, made up of several bands. Each band has certain dominance within the herd structure, but all generally follows the same movement patterns and has a similar home range.

HOME RANGE/HABITAT

Wild horses generally move widely both daily, usually between water sources, as well as seasonally, seeking higher elevations during summer months and at times when it is necessary to minimize threats to their safety by enhancing their view of the surrounding area (Ganskopp and Vavra 1986, Beever and Herrick 2006).

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION

Under the Proposed Action, approximately 498 wild horses would be captured, of which approximately 400 excess wild horses would be removed. Approximately 98 wild horses would be released back to the range after treatment of 39 mares (dependent on capture efficiency) with PZP-22. Female foals (fillies) would not be treated. Excess horses to be removed would, to the extent practicable, primarily consist of the wild horses residing outside the HMAs and younger more adoptable animals gathered from within the HMA's. 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 grassland pasture facilities (GPF). Any old, sick or lame horses and any animals that are covered by BLM's Euthanasia Policy (e.g., that would be unable to maintain an acceptable body condition (greater than or equal to a Henneke BCS of 3)) would be humanely euthanized as an act of mercy. The resulting sex ratio would be approximately 60% stallions and 40% mares. It is expected that releasing additional stallions to reach the targeted sex ratio of 60% males would result in smaller band sizes, larger bachelor groups, and some increased competition for mares. More stallions involved in breeding should result in increased genetic exchange improving the genetic health within the herd.

Fertility control would be applied to the mares selected for release, decreasing fertility and future annual wild horse population growth within the HMAs. The detailed procedures to be followed for the implementation of fertility control are described in Appendix D. Each released mare would receive a single dose of the two-year PZP contraceptive vaccine prior to release. It is anticipated that the horses in the Wassuk HMA would be re-gathered every two to three years over the next 10 years to re-vaccinate the mares and remove excess animals. When injected, PZP (antigen) causes the mare's immune system to produce antibodies. These antibodies bind to the mare's eggs, which effectively blocks sperm binding and fertilization (Zoo, Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares, to the environment, and can be easily administered in the field. Based on behavioral studies, PZP-22 does not cause significant changes in behavior at individual or herd levels (USGS). Additionally, PZP contraception appears to be completely reversible.

The application efficacy of the two-year PZP vaccine (representing the percent of vaccinated mares that do not foal) based on winter applications follows below:

Year 1	Year 2	Year 3	Year 4
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):

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
90%	65%	80%	65%	80%	65%

DIRECT AND INDIRECT GATHER IMPACTS

The BLM has been conducting wild horse and burro gathers since the mid-1970s and has been using helicopters for such gathers since the late 1970's. During this time, methods and procedures have been identified and refined to minimize stress and impacts to wild horses during gather implementation. The SOPs in Appendix C would be implemented to ensure a safe and humane gather occurs and to minimize potential stress and injury to wild horses. Various impacts to wild horses as a result of gather activities have been observed. Under the Proposed Action, impacts to wild horses would be both direct and indirect, occurring to both individual animals and the population as a whole.

GATHER ACTIVITIES

Since 2004, BLM NV 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, according to the Government Accountability Office (GAO-09-77). The data affirms 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 from the public lands. The BLM also avoids gathering wild horses by helicopter during the six weeks prior to and six weeks following the peak of foaling (mid-April to mid-May), therefore the BLM does not normally use a helicopter to gather wild horses between March 1 through June 30, unless emergency conditions exist.

Over the past 35 years, various impacts to wild horses have been observed during these gathers. Individual, direct impacts to wild horses include the stress associated with the roundup, capture, sorting, handling, and transportation of the animals. The intensity of these impacts varies by individual animal, and is indicated by behaviors ranging from nervous agitation to physical distress. When being herded to trap site corrals by the helicopter, injuries sustained by wild horses may include bruises, scrapes, or cuts to feet, legs, face, or body from rocks, brush or tree limbs. Rarely wild horses might encounter barbed wire fences and receive wire cuts. These injuries are very rarely fatal and are treated on-site until a veterinarian can examine the animal and determine if additional treatment is indicated. 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 the gathers and ensure that their health, safety and well-being during and after the gather is a focus and priority.

Other injuries may occur after a horse has been captured and is either within the trap site corral, the temporary holding corral, during transport between facilities, or during sorting and handling. Occasionally, horses may sustain a spinal injury or a fractured limb, but based on prior gather statistics serious injuries requiring humane euthanasia 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. These injuries result from kicks and bites, or from collisions with corral panels or gates.

To minimize the potential for injuries from fighting, the animals are transported from the trap site to the temporary (or short-term) holding facility where they are sorted as quickly and safely as possible, then moved into large holding pens where they are provided with hay and water. 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 injures are more frequent. Indirect individual impacts are those which occur to individual wild horses after the initial event. These may include miscarriages in females, increased social displacement, and conflict between males. These impacts, like direct individual impacts, are known to occur intermittently during wild horse gather operations. An example of an indirect individual impact would be the brief 1-2 minute skirmish between older males which ends when one male retreats. Injuries typically involve a bite or kick with bruises which do not break the skin. Like direct individual impacts, the frequency of these impacts varies with the population and the individual. Observations following capture indicate that the potential for miscarriages varies, but is more likely if the mares are in very thin body condition or in poor health.

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. The BLM and the contractor will be pro-active in controlling dust in and around the holding facility and the gather corrals to limit the horses' exposure.

During summer gathers, wild horses may travel long distances between water and forage and become more easily dehydrated. The BLM staff's Contracting Officers Representative (COR) and Project Inspector (PI) are continuously at the gather site to monitor weather conditions and health and well-being of the wild horses. Adjustments to gather operations are made as necessary to ensure animal health and safety. Specific temperature and distance parameters are set by the COR and PI to adapt the gather operations to site specific conditions and animal needs. Most summer related concerns can be mitigated by conducting gather activities during the early morning hours when it is cooler and by removing the helicopter pressure from wild horses exhibiting the symptoms of heat fatigue and dehydration until the horses regain their stamina.

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.

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 BCS 5 or higher), sometimes have more heat or gather related issues than horses that do not have as high of a BCS. 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.

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. Due to the timing of the proposed gather, it is unlikely that orphan foals would be encountered as the majority of the current year's (2012) foals would be already weaned from their mothers and would be 6-10 months old. In private industry, domestic horses are normally weaned between four and six months of age. 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.

Through the capture and sorting process, wild horses are examined for health, injury and other potential physical defects. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy. BLM Euthanasia Policy IM-2009-041 is used as a guide to determine if animals meet the criteria and should be euthanized (refer to the SOPs in Appendix C). Animals that are euthanized for non-gather related reasons include those with old injuries (broken or deformed limbs) that cause lameness or prevent the animal from being able to maintain an acceptable body condition (greater than or equal to BCS 3); old animals that have serious dental abnormalities or severely worn teeth and are not expected to maintain an acceptable body condition, and wild horses that have serious physical defects such as club feet, severe limb deformities, limb and dental deformities, or sway back. Some of these conditions have a causal genetic component and the animals should not be returned to the range in order to prevent suffering, as well as to avoid amplifying the incidence of the problem in the population.

Wild horses not captured may be temporarily disturbed and may move into another area during the gather operation. With the exception of changes to herd demographics from removals, direct population impacts to gathered horses have proven to be temporary in nature with most, if not all, impacts disappearing within hours to several days of release. No observable affects associated with these impacts to the gathered horses 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 as the AML ranges should provide for acceptable genetic diversity. Over the next 11 years, implementation of the Proposed Action could result in as many as 112 fewer excess wild horses which would require removal from the range. For every excess horse not adopted or sold, a cost to the American taxpayer of up to $12,000 per animal over 20 years would accrue.

WATER/BAIT TRAPPING (IF USED)

Bait and/or water trapping generally require a long window of time for success. Although the trap would be set in a high probability area for capturing the excess wild horses within the area, time is required for the horses to acclimate to the trap and/or decide to access the water/bait.

Trapping involves setting up portable panels around an existing water source or in an active wild horse area, or around a pre-set water or bait source. The portable panels would be set up to allow wild horses to go freely in and out of the corral until they have adjusted to it. When the wild horses fully adapt to the corral, it is fitted with a gate system. The acclimatization of the horses creates a low stress trap. During this acclimation period the horses would experience some stress due to the panels being set up.

When actively trapping excess wild horses, the trap would be checked on a daily basis. Horses would be either removed immediately or fed and watered for up to several days prior to transport to a holding facility. Existing roads would be used to access the trap sites.

Gathering of the excess horses utilizing bait/water trapping could occur during anytime of the year and extend until the target number of animals is removed to relieve the concentrated use, reach AML and/or reduce pressure on resources. As the proposed bait and/or water trapping in

this area is a low stress approach to gathering of wild horses, such trapping can continue into the foaling season without harming the mares or foals.

FERTILITY CONTROL IMPLEMNTATION

One-time application at the capture site would not affect normal development of a 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). Mares would foal normally in 2013 (Year 1). 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 herd management areas for the National Park Service and the BLM 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).

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. 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.

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 that 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.

The first-time application of PZP-22 at the capture site would not affect normal development of a 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). Mares would foal normally in 2013 (Year 1). There are always some portion of the wild horse population, including mares, that manage to evade capture and some mares produce a foal even when treated with PZP-22 assuring the populations would continue to have reproduction occurring. The majority of mares vaccinated with PZP under the Proposed Action would not produce a foal for the following 22 months, which would help maintain the horse populations within the AML range. It is estimated that over the next 11 years gathering and re-vaccinating mares every 2 or 3 years would result in at least 112 fewer excess horses recruited into the population. PZP-22 can safely be repeated in 2 years or as necessary to control

the population growth rate. The probability of long-term infertility using PZP-22 is very low, and many mares retreated even after 3 years would return to normal fertility after the second treatment wears off (Turner, pers. comm.). After the contraceptive wears off, the population would increase at or slightly above the normal growth rate for the HMAs.

The fertility control 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 consequences from the fertility control injections. Released stallions may also be freeze marked to aid in determining the accuracy of future inventory flights and efficiency of the current gather.

The Food and Drug Administration, The 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 HSUS 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).

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 her 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 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 AML on wild horse HMAs 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.

Approximately 48 wild horses would be released back to the range after treatment of approximately 19 mares (dependent on capture efficiency) with PZP-22. Female foals (fillies) would not be treated. The resulting sex ratio would be approximately 60% stallions and 40% mares. It is expected that releasing additional stallions to reach the targeted sex ratio of 60% males would result in smaller band sizes, larger bachelor groups, and some increased competition for mares. More stallions involved in breeding should result in increased genetic exchange improving the genetic health within the herd.

WILD HORSES REMAINING OR RELEASED INTO THE HMA FOLLOWING GATHER

Under the Proposed Action, the post-gather population of wild horses would be about 321 wild horses, which is the combined low range of the AML. Reducing population size would also ensure that the remaining wild horses remain healthy and vigorous, and that the wild horses in the HMA are not at risk of death or suffering as a result of starvation due to insufficient forage and/or water as a result of frequent drought conditions.

The primary benefits of achieving and maintain the established AML within this HMA 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 S&Gs, Allotment Specific and RMP Objectives.

TEMPORARY HOLDING FACILITIES DURING GATHERS

Wild horses that are gathered would be transported from the gather sites to a temporary holding corral within the HMAs in goose-neck trailers. At the temporary holding corral wild horses will be sorted into different pens based on sex. The horses will be aged and provided good quality hay and water. Mares and their un-weaned foals will be kept in pens together. At the temporary holding facility, a veterinarian, when present, will provide 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 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 500 excess horses would be 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 GPFs.

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 Contracting Officer Representative (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. A small number of mares may be shipped with foals. 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 die during transport.

Upon arrival at the short term holding facility, recently captured animals 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 animals and provides recommendations to the BLM regarding care, treatment, and if necessary, euthanasia of the recently captured animals. 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 American Veterinary Medical Association. 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 animals, generally mares, 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 miscarriage. 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.

After recently captured animals 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 infections anemia (Coggins test), 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. Approximately 12,000 excess wild horses are being maintained within BLM's short-term holding facilities.

ADOPTION OR SALE WITH LIMITATIONS, AND GRASSLAND PASTURE FACILITIES

Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall for horses over 18 months of age and at least four and a half feet tall for burros. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horse or burro for one year and the animal 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 a humane official, veterinarian, or other individual approved by the authorized officer, at which point the horse becomes the property of the adopter. Adoptions are conducted in accordance with 43 CFR 4750.

For sales, potential buyers must fill out an application and be pre-approved before they may buy a wild horse or burro. A sale-eligible wild horse or burro is any animal that is more than 10 years old; or has been offered unsuccessfully for adoption three times. The application also specifies that all buyers are not to re-sell the animal to slaughter buyers or anyone who would sell the animal to a commercial processing plant. Sales of wild horses and burros are conducted in accordance with Bureau policy.

Since fiscal year 2008, the BLM has removed over 31,680 excess wild horses or burros from the Western States. Most animals not immediately adopted or sold have been transported to long-term grassland pastures facilities in the Midwest. Unadopted animals 5 years of age and older are transported to GPFs. Each GPF is subject to a separate environmental analysis and decision making process. Animals in GPFs remain available for adoption or sale to individuals interested in acquiring a larger number of animals who can provide the animals with a good home. The BLM has maintained GPFs in the Midwest for over 20 years.

Potential impacts to wild horses from transport to adoption, sale or GPF are similar to those previously described. One difference is that when shipping wild horses for adoption, sale or GPF, 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 25 pounds of good quality hay per animal with adequate feed bunk space to allow all animals to eat at one time. Most animals are not shipped more than

18 hours before they are rested. However, 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 than the stress involved in the additional period of uninterrupted travel.

GPFs are designed to provide excess wild horses with humane, life-long care in a natural setting off the public rangelands. The wild horses are maintained in grassland pastures large enough to allow free-roaming behavior and with the forage, water, and shelter necessary to sustain them in good condition. Approximately 28,600 wild horses, that are in excess of the existing adoption or sale demand (because of age or other factors), are currently located on private grassland pasture facilities in Iowa, Kansas, Oklahoma, and South Dakota. Located in mid or tall grass prairie regions of the United States, these GPFs are highly productive grasslands as compared to more arid western rangelands. These pastures comprise approximately 256,000 acres (an average of about 8-10 acres per animal). The majority of these animals are older in age. The adoption demand for burros exceeds the number of excess burros; therefore, burros are not placed into GPF.

Mares and castrated stallions (geldings) are segregated into separate pastures except one facility where geldings and mares coexist. No reproduction occurs in the grassland pastures, but some foals are born to mares that were pregnant when they were removed from the range and placed onto the GPF. 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 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 BCS of 3 or greater due to age or other factors. Natural mortality of wild horses in GPF 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 GPF averages about $4.45 per horse per day as compared with maintaining the 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 authorized 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 would be placed on the use of Fiscal Year (FY) 2012 appropriated funds. Sale with limitations has been used by the BLM since 2005 when the Act was amended.

NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no active management to maintain the population sizes within the established AMLs at this time. In the absence of a gather, wild horse populations would continue to grow at an average rate of approximately 20% per year.

If No Action is taken, excess wild horses would not be removed from within or outside the Wassuk HMA and the wild horse populations would not be brought to AML at this time. The animals would not be subject to the individual direct or indirect impacts as a result of a gather

operation in September, 2012. Over the short-term, individual animals in the herd would be subject to increased stress and possible death as a result of increased competition for water and forage as the population continues to grow even further in excess of the land's capacity to meet the wild horses' habitat needs. The areas currently experiencing heavy utilization by wild horses would increase over time. This would be expected to result in increasing damage to rangeland resources throughout the HMAs. Trampling and trailing damage by wild horses in/around riparian areas would also be expected to increase, resulting in larger, more extensive areas of bare ground. Competition for the available water and forage between wild horses, domestic livestock, and native wildlife would continue and further increase.

Wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes. Predation and disease have not substantially regulated wild horse population levels within or outside the project area. Throughout the HMA few predators exist to control wild horse populations. Some mountain lion predation likely occurs, but does not appear to be substantial. Coyotes are not prone to prey on wild horses unless young, or extremely weak. Other predators such as wolf or bear do not inhabit the area. Being a non-self-regulating species, there would be a steady increase in wild horse numbers for the foreseeable future, which would continue to exceed the carrying capacity of the range. Individual horses would be at risk of death by starvation and lack of water as the population continues to grow. The wild horses would compete for the available water and forage resources, affecting mares and foals most severely. Social stress would increase. Fighting among male horses would increase as they protect their position at scarce water sources, as well as injuries and death to all age classes of animals. Significant loss of the wild horses in the HMAs due to starvation or lack of water would have obvious consequences to the long-term viability of the herd. Allowing horses to die of dehydration and starvation would be inhumane treatment and would be contrary to the WFRHBA, which mandates removal of excess wild horses. The damage to rangeland resources that results from excess numbers of wild horses is also contrary to the WFRHBA, which mandates the Bureau to "*protect the range from the deterioration associated with overpopulation*", "*remove excess animals from the range so as to achieve appropriate management levels*", and *"to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area".*

Once the vegetative and water resources are at these critically low levels due to excessive utilization by an over population of wild horses, the weaker animals, generally the older animals and the mares and foals, are the first to be impacted. It is likely that a majority of these animals would die from starvation and dehydration. The resultant population would be heavily skewed towards the stronger stallions which would lead to significant social disruption in the HMAs. By managing the public lands in this way, the vegetative and water resources would be impacted first and to the point that they have no potential for recovery. This degree of resource impact would lead to management of wild horses at a greatly reduced level if BLM is able to manage for wild horses at all on the HMAs in the future. As a result, the No Action Alternative would not ensure healthy rangelands that would allow for the management of a healthy wild horse population, and would not promote a thriving natural ecological balance.

As populations increase beyond the capacity of the habitat, more bands of horses would also leave the boundaries of the HMA in search of forage and water, thereby increasing impacts to

rangeland resources outside the HMA boundaries as well. This alternative would result in increasing numbers of wild horses in areas not designated for their use, and would not achieve the stated objectives for wild horse herd management areas, namely to "prevent the range from deterioration associated with overpopulation", and "preserve and maintain a thriving natural ecological balance and multiple use relationship in that area". Additionally, 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 at an average rate of at least 20% per year. With increased populations of wild horses, conditions on the ground would worsen and the need for an emergency gather could arise as forage and water become scarce within the HMA and surrounding areas.

3.4.2 VEGETATION

AFFECTED ENVIRONMENT

A mosaic of plant communities is present within the HMAs. Plant communities within the HMA include the following: Small areas of riparian vegetation associated with springs, and drainages such as willow (*Salix* species), sedges (*Carex* species), and rushes (*Juncus* species), watercress (*Nasturtium* species), rose (*Rosa species*).

The major perennial grass species found in the HMA are Indian ricegrass (*Achnatherum hymenoides*), bottlebrush squirreltail (*Elymus elymoides*), needle and thread grass (*Hesperostipa comata*), and Sandberg bluegrass (*Poa secunda*).

The major forbs species found on the HMA are *Eriogonum* species, evening primrose (*Oenotheris biennis*), *Astragalus* species, Prince's plume (*Stanleya* species), and globemallow (*Sphaeralcea* species).

The major shrub species are Bailey greasewood (*Sarcobatus vermiculatus* var. *baileyi*), shadscale saltbush (*Atriplex confertifolia*), fourwing saltbush (*Atriplex canescens*), winterfat (*Krascheninnikovia lanata*), low sagebrush (*Artemisia arbuscula*), Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*), bud sagebrush or budsage (*Artemisia spinescens*), and green rabbitbrush (*Chrysothamnus viscidiflorus*).

The two tree species include Utah juniper (*Juniperus osteosperma*) and singleleaf pinyon pine (*Pinus monophylla*).

For the past 10 years, the permittees have not run livestock in the Black Mountain, Butler Mountain and the Gray Hills grazing allotments. Sheep have been grazed on the Gray Hills west pasture, which is located on the west side of the East Walker River and is located outside of the HMA boundary. The horses have begun drifting south farther into the East Walker Allotment and on to the Forest Service administered lands. Livestock were only trailed through the East Walker Allotment in 2011 because of the already heavy utilization from the wild horses. Use pattern monitoring was conducted in areas that were not grazed by livestock so all of the use in these areas is attributed to wild horses. Heavy to severe use is occurring in the Wassuk HMA that is attributed solely to wild horses.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION

Because of physiology, wild horses primarily eat native bunchgrasses when available; consequently dietary overlap between horses and mule deer, as well as pronghorn, has been documented as minimal (1%). Dietary overlap of wild horses with desert bighorn sheep has been documented around 50% when averaged throughout the year (Hanley & Hanley 1982, Hansen et al. 1977). However, native plant communities can only sustain a certain level of grazing utilization. Monitoring data has shown heavy use in the HMA's contributed to excess wild horses. The upper limit of the AML range is the maximum number of wild horses that can be maintained within an HMA to achieve a thriving ecological balance, and not adversely impact the plant community in combination with other multiple uses such as wildlife and livestock grazing. The proposed action would help in achieving and maintaining the wild horse populations within AML, thus vegetative health would be promoted. The wild horse AMLs for the HMA are currently 3 ½ times greater than the high AML and the over population of horses is contributing to the over use of native plant communities. When AML is exceeded and maintained over time, overutilization of vegetation and water sources by wild horses occurs, decreasing plant diversity and in turn changing habitat structure (Beever and Brussard 2000, and references therein). This is currently occurring in most areas of the HMA.

While impacts to water from horses are different than cattle due to behavior (horses tend to not linger at a source and drink in the morning and at night), decreased cover and diversity of grasses and shrubs as well as decreased mammal burrow density have been documented from wild horses at water sources (Beever and Brussard 2000, Ganskopp and Vavra 1986). Small mammals are a prey base for many species. Thus, less prey can negatively affect raptors and carnivores that may inhabit the area. Sage grouse require specific amounts of grass cover for optimal nesting habitat, an abundance of forbs for brood-rearing habitat, and free water with sufficient vegetation to support insects and to provide cover (Connelly et al. 2000). If grasses are continually over-utilized sage grouse habitat can be negatively affected. Keeping wild horses at AML is expected to alleviate these effects.

So overall, if the gather and immune-contraception efforts are successful, increased understory plant species and cover, wet meadows, and maintaining less competition for forage would benefit species dependent on these key habitats for food, water, and cover. Additionally, species that prey on wildlife that inhabit these plant communities, such as golden eagles, may benefit from an increased prey base over time. Reduced numbers of horses would lessen impacts to wetlands and riparian zones. All trap sites and disturbances would be located away from wetlands and riparian zones.

NO ACTION ALTERNATIVE

Under the no action alternative wild horse populations would continue to increase. When wild horse populations are above AML, overutilization of vegetation occurs, as evidenced by monitoring data showing heavy use attributed to horse grazing which confirms that the populations are in excess of the levels at which healthy rangelands can be maintained. The potential negative effects of over-utilization to vegetation are root crown damage, plant stress and the reduced ability of forage species to reproduce and compete with other species in the plant community. If wild horse populations continue to grow, desirable plant species would

eventually be lost from the HMA and surrounding areas. Maintaining and achieving the standards and guidelines for rangeland health would not occur.

A greater number of excess wild horses would eventually need to be removed in future gathers to achieve AML and to reverse resource degradation from an overpopulation of wild horses. Compliance with the CRMP or with promoting a healthy natural ecological habitat in conformance with rangeland health standards and the provisions of Section 1333 (a) of the WFRHBA would not be met.

3.4.3 INVASIVE, NON-NATIVE AND NOXIOUS SPECIES

AFFECTED ENVIRONMENT

Invasive species are defined by EO 13112 as "an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health". Alien refers to a species that did not evolve in the environment in which it is found or is in other words, non-native. This includes plants, animals, and microorganisms. The definition makes a clear distinction between invasive and non-native species because many non-natives are not harmful (i.e. most U.S. crops). However, many invasive species have caused great harm, according to the National Invasive Species Council.

Noxious weeds in NV are classified by the NV Department of Agriculture and the Plant Protection Act (2000) and are administered by the United States Department of Agriculture's APHIS. Table 6 provides examples and definitions of noxious weeds in Nevada.

Table 7: Noxious Weed Information (Nevada Department of Agriculture 2010)

Type	Definition	Examples
Category A	Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state in all infestations	Dyer's woad *(Isatis tinctoria)* Spotted Knapweed *(Centaurea masculosa)*
Category B	Weeds established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously not known to occur	Russian Knapweed *(Acroptilon repens)* Scotch Thistle *(Onopordum acanthium)*
Category C	Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer	Hoary cress *(Cardaria draba* Saltcedar (tamarisk) *(Tamarix spp)*

*For more information on noxious weeds visit: http://agri.nv.gov/nwac/PLANT_NoxWeedList.htm.

The noxious weed that occurs in the HMA is saltcedar (*Tamarix* spp.). Saltcedar is classified in NV as a Category C noxious weed.

Saltcedar, native to North Africa, Asia, and Europe, was brought to the United States as an ornamental. The name "saltcedar" probably refers to the salty residue that collects on the small scale- like leaves that resemble cedar foliage (Bowser 1957). The weed tolerates extreme conditions, including drought, heat, cold, salinity, fire, and flooding. Each plant can produce up to 500,000 wind-blown seeds in a growing season, which generally begins in April and lasts into October. Saltcedar tends to grow in riparian areas or where water is near the surface, which disrupts native aquatic systems with its long tap roots. These tap roots are capable of intercepting deep water tables and of increasing salinity of the surrounding soil after leaves drop. In turn, native species such as willow and cottonwood are displaced leaving poor habitat and forage for wildlife. The leaves and flowers contain few nutrients for wildlife. After burning or cutting, saltcedar can easily resprout making it difficult to eliminate. A combination of chemical, mechanical, and biological control is probably the most effective management (Muzika and Swearingen 2006).

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION

Intact healthy native plant communities are more resistant to the establishment and spread of noxious weeds. By managing wild horses at a level compatible with the native plant communities, noxious weeds would be less likely to become established and spread.

BLM would inspect trap areas and any invasive and noxious weeds would be avoided when establishing trap and/or holding facilities, and would not be driven through with motorized vehicles. Noxious weed monitoring at trap/holding sites would be conducted. All noxious weeds discovered on the HMA would be recorded, to include the species, size of the infestation, cover class, distribution of plants (linear or irregular), and location. The Stillwater Field Office weed coordinator would be notified of any weeds found and provided with this information. All noxious weeds found would be treated and evaluated under the noxious weed program. Treatment methods could include biological, cultural/mechanical, and chemical control. When applicable, several of these methods would be combined into an integrated pest management program in order to reduce costs and risks to humans and the environment.

If chemical control is the treatment method, a Pesticide Use Proposal would be submitted to the NV State Office weed coordinator, which would specify the most appropriate herbicide for the site and noxious weed species, as well as the application rate of the herbicide. Any herbicide selection and application would be in conformance with Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic EIS and Record of Decision (ROD) (BLM 2007a,b).

There may be an increased threat of noxious weeds being introduced into the HMAs by administrative vehicles

NO ACTION ALTERNATIVE

Under the no action alternative the wild horse populations would continue to increase and eventually the health of the native plant communities would become stressed; thereby facilitating the establishment and spread of noxious weeds.

Under the no action alternative, the HMA would be routinely surveyed along roadways and other disturbed areas for new weed infestations. The SFO weed coordinator would be notified of any weeds found and provided with the species, size of the infestation, cover class, distribution of plants (linear or irregular), and location for treatment under the noxious weed program. Treatment methods could include biological, cultural/mechanical, and chemical control. When applicable, several of these methods would be combined into an integrated pest management program in order to reduce the costs and risks to humans and the environment. Areas previously treated with herbicides would continue to be monitored.

3.4.4 LIVESTOCK GRAZING

AFFECTED ENVIRONMENT

Livestock grazing occurs within the HMA as authorized through grazing permits as summarized below.

Table 8: Authorized Livestock Use Occurring Within the Wassuk HMA

Allotment	% in HMA*	Active Preference	Actual use AUMs 2010-11	Season of use
Perry Spring – Deadman	3%	694 Cattle; 3,513 AUMs	1,793	11/01 - 4/15
Black Mountain	100%	906 Sheep; 900 AUMs	00	10/01 – 2/28
Gray Hills (East Pasture)	35%	1420 Sheep; 570 AUMs 3100 Sheep; 3,710	00 00	6/5-8/4 10/16-4/15
Butler Mountain	55%	2359 Sheep; 3,040 AUMs	00	11/1-5/15
East Walker	5%	497 Cattle; 1978 AUMs	00	12/1-3/31

*Percentages are approximate.

AUMs and livestock numbers are for the entire allotments, thus the use authorized within the HMA is substantially less.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION

Livestock would not be affected directly by the gather activities, because they are not present on these allotments during the months of August and September. The Gray Hills Allotment, Black Mountain Allotment and the Butler Mountain Allotment have not received authorized grazing in the past 10 years due to the over population of the wild horses. The wild horses are drifting south farther into the East Walker Allotment and cattle were unable to graze the allotment this year due to heavy vegetation utilization. The springs and associated riparian areas have been damaged as well. With the removal of the riparian vegetation, the water quality is degraded. With poor water quality, the health of every animal that drinks from the water source is jeopardized.

Under the proposed action, there would be indirect beneficial impacts since the health, vigor, recruitment, and production of native vegetation and riparian systems should improve following implementation of the proposed gather. This would provide an increase in palatable and a more nutritional source of forage for the livestock. Implementation of the proposed action would assist the HMA's in remaining in conformance with all of the Standards and Guidelines for

Rangeland Health (BLM 2003). Soil site stability, hydrologic function, and the biotic integrity for each treated area should move closer to each ecological site's capacity for the capture, storage, and safe release of precipitation, the conversion of sunlight to plant and then animal matter, and the cycle of nutrients through the environment.

NO ACTION ALTERNATIVE
Loss of desirable plant species would affect livestock grazing as a result of over utilization of forage by an excess number of wild horses above AML. Currently there is very little livestock grazing by permittees in these areas due to the lack of forage and water resources available within these areas of the HMA.

3.4.5 GENERAL WILDLIFE

AFFECTED ENVIRONMENT
KEY HABITATS
Based on the Southwest Regional GAP Analysis Project, the Nevada Department of Wildlife's (NDOW) Wildlife Action Plan (NDOW 2006) characterizes NV's vegetative land cover as falling into 8 broad ecological system groups and links those with Key Habitat types, which are further refined into Ecological Systems characterized by plant communities or associations (USGS 2005). The primary key habitats (≈98.5% of the HMA) that exist within the Wassuk HMA are Intermountain Cold Desert Scrub (≈33% of the HMA), Sagebrush (≈31.5% of the HMA), and Lower Montane Woodlands (≈34% of the HMA). Key Habitats can be used to infer likely occurrences of wildlife species assemblages when survey data are lacking, as is the case within this HMA. Some of the known or potential wildlife species that could be supported by the plant communities in the HMAs are displayed in Appendix F. Because intensive animal surveys have not been completed, this table may not contain all species that currently inhabit the HMA.

GAME SPECIES
Mule Deer ─ Mule deer (*Odocoileus hemionus*) have experienced a 50% decline in NV since the 1980s (Wildlife Action Plan Team 2006). Mule deer generally feed on forbs, grasses, and shrubs depending on the time of year. Forbs and grasses are most important in spring and summer while shrubs are most utilized during winter and dry summer months. About 30% (15,228 acres) of this HMA supports year round mule deer habitat and distribution is primarily limited by water availability (NDOW 2010).

Chukar ─ This species from the pheasant family was originally introduced from Pakistan as an upland game bird. It can be found on rocky hillsides or open and flat desert with sparse grassy vegetation. Chukars primarily eat seeds but will forage on some insects.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION
Direct, short-term, localized impacts could occur to wildlife species during gather operations. Wildlife, including small mammals, rodents, and reptiles, could be trampled or have burrows destroyed. Potential spatial displacement to big game, upland game, and resident birds would likely be temporary.

Overall, if the gather and contraception efforts are successful, the reduction in overall utilization and competition for forage and limited water from removing excess wild horses would benefit species dependent on these key habitats for food, water, and cover. Additionally, species that prey on wildlife that inhabit these plant communities, such as golden eagles, may benefit from an increased prey base over time.

NO ACTION ALTERNATIVE

While no direct, short-term, localized impacts from potential trampling and spatial displacement would occur to wildlife species because no gather operations would occur, wild horse populations would continue to increase above the upper limit of the AML. This can indirectly have long-term negative impacts to wildlife resources. While dietary overlap is not an issue with wildlife species in this HMA, the impacts to limited water sources is. Springs would continue to degrade to the point of becoming non-functional, which could lead to decreased water availability or even the drying up of some springs. If AML continues to be exceeded over time and overutilization of vegetation and water sources by wild horses continues, further decreases in plant diversity and alteration of habitat structure would likely occur (Beever and Brussard 2000). A less diverse plant community can be vulnerable to fire and in turn invasive grasses such as cheatgrass. Cheatgrass displaces native perennial shrub, grass, and forb species because of its ability to outcompete native plants for water and nutrients by germinating earlier and quicker. Cheatgrass is also adapted to recurring fires that are perpetuated in part by the fine dead fuels that it leaves behind. In general, most wildlife species have a difficult time thriving in these altered fire regimes because diverse native vegetation is required for food, water, and cover. Beever at al. (2008) conducted a study of vegetation response to removal of horses in 1997 and 1998 and concluded that sites from which horses had been removed exhibited 1.1–1.9 times greater shrub cover, 1.2–1.5 times greater total plant cover, 2–12 species greater plant species richness, 1.9–2.9 times greater native grass cover, and 1.1–2.4 times greater frequency of native grasses than did horse-occupied sites.

The effects of wild horses are not uniform across the landscape. Horses will utilize areas of the HMA that have more grasses because they are primarily grazers. Decreased cover and diversity of grasses and shrubs as well as decreased mammal burrow density have been documented at water sources utilized by wild horses (Beever and Brussard 2000, Ganskopp and Vavra 1986). Small mammals are a prey base for many species and as a result, less prey can negatively affect raptors and carnivores that may inhabit the area. Mountain lion populations have been known to predate foals which in turn increased lion numbers (Turner and Morrison 2001). This could negatively impact mule deer abundance beyond normal predation rates.

3.4.6 BLM DESIGNATED SENSITIVE SPECIES

AFFECTED ENVIRONMENT

Species designated as Bureau sensitive species must be native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

1. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or

2. The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

A list of sensitive animal and plant species associated with BLM lands in NV was signed in June of 2011 (BLM 2011). Many of these animal species depend on key habitats within the HMAs. Appendix F displays sensitive wildlife species that may be present. There are no known BLM sensitive plant species that exist within the HMA.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION
Impacts would generally be the same to BLM sensitive species as described in the Environmental Consequences, General Wildlife section (Section 3.4.5.) Managing horses within AML should ensure habitat conditions that, over time, would benefit sensitive species by providing a diverse vegetation structure and composition that provides for the applicable life cycle requirements of any given species.

By reducing current levels of competition for water and forage resulting from excess wild horses would be beneficial to sensitive species dependent on key habitats for water, food, and cover. Sensitive species such as the golden eagle or burrowing owl that inhabit or forage in this HMA would benefit from a robust prey base that is dependent on healthy shrubs and understory grasses that provide seeds for forage as well as cover for shade and predator avoidance.

NO ACTION ALTERNATIVE
Monitoring data shows that over-utilization of forage by wild horses is occurring and would continue to increase if population numbers are not reduced and then maintained within the AML range. Habitat could become further degraded, which would decrease forage and/or prey for BLM sensitive species, and over time this could decrease their abundance within or in proximity to the HMA.

3.4.7 WETLANDS AND RIPARIAN AREAS

AFFECTED ENVIRONMENT
Protection and the definition of wetlands for federal agencies stems from EO 11990, Protection of Wetlands (1977). Section 6 (c) defines wetlands as follows; ―*The term "wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds*.

There are multiple springs that sustain ―wetlands and riparian areas in the project area. Riparian areas refer to the aquatic ecosystem and the portions of the adjacent terrestrial ecosystem that directly affect or are affected by the aquatic environment. Natural riparian areas are associated with numerous springs in the Wassuk HMA including Big Spring, Box Spring, Buckbrush Spring (also known as Summit Spring), Cottonwood Spring, Summit Spring (also known as

Abraham Spring), Tank Spring and Twilight Spring. Several of these springs are not in Proper Functioning Condition (PFC), and others are in Functional-At Risk conditions. Big Spring and Summit Spring (Abraham Spring) both lack riparian vegetation and show signs of erosion, sedimentation and severe trampling by wild horses (see Figures in Appendix A). Riparian vegetation at Buckbrush Spring (Summit Spring) show signs of recovery since the new fence was put in place in early 2012 (even though it is a drought year) that made it so wild horses no longer have access to the riparian area. Recent signs of horses in this area were visible in the form of hoof prints around the fenced area (see Figures in Appendix A).

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION

Gathering wild horses and maintaining at AML throughout the Wassuk HMA, would facilitate the establishment of riparian species on areas that currently have little to no vegetation. Areas that do have riparian vegetation are at levels that are less than site potential. With the removal of excess horses, many of the springs should begin to show signs of increased soil protection and stability. There would also be reduced potential for accelerated soil erosion rates during flooding and other natural weather events and in turn, reduce the potential for sedimentation into nearby riparian areas throughout the treatment area.

Overall, the implementation of the Proposed Action should assist in maintaining PFC or making progress towards achieving PFC at spring sources and assist in conforming with Rangeland Health Standard 2 (Riparian and Wetland Sites), which states the following:

> "*Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria. As indicated by: Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating PFC such as avoiding accelerating erosion, capturing sediment and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:*
>
> - *Width/Depth ratio;*
> - *Channel roughness;*
> - *Sinuosity of stream channel;*
> - *Bank stability;*
> - *Vegetative cover (amount, spacing, life form);*
> - *Other cover (large woody debris, rock)*
>
> *Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics. Chemical, physical and biological water constituents are not exceeding the State water quality Standards*."

NO ACTION ALTERNATIVE

Under the No Action Alternative, adverse impacts to riparian and wetland areas are expected to continue and would increase over time with a continuation of wild horse population above AML

in these zones. Erosion of stream banks would continue and riparian vegetation is expected to decline. Many springs may become channelized with reduced sinuosity and head cutting would become more severe. The No Action Alternative would not assist springs in maintaining PFC or making progress towards achieving PFC.

3.4.8 CULTURAL RESOURCES

AFFECTED ENVIRONMENT

Following BLM regulations (43 CFR Part 8100) and other federal laws including the National Historic Preservation Act (16 USC § 470f) and it's implementing regulations (36 CFR Part 800), as amended, BLM reviewed the immediate region and proposed project locations for historic properties prior to a federal undertaking (issuance of a federal permit). By definition, an historic property is a "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" and includes "artifacts, records, and remains that are related to and located within such properties" (36 CFR 800.16(l)(1)).

BLM defined the project Area of Potential Effect (APE) as consisting of approximately 5 acres of public land managed by the Carson City District, SFO. The APE is estimated based upon the four proposed trap sites and a holding corral identified during analysis (see Appendix A). A BLM Class I records search of previous Class III cultural resource inventories was conducted for the proposed trap sites and holding corral. The review included the NV Cultural Resource Information System (NVCRIS), the geodatabase and archives on file at the CCDO, a review of the current literature (Bingston 2002 and Pendleton et al. 1982) and General Land Office historic maps located on the NV BLM webpage.

Based on current research, historic properties represent significant past human use of the landscape between the East Walker River and the Wassuk Range. These include prehistoric-period sites camp/habitation sites, limited activity/procurement sites, rock art, rock alignments, rock shelters and caves, and talus pits utilized over an extensive period of time ranging from the Middle Archaic (approximately 4500 to 1000BP) to the historic contact period extending through the nineteenth-century. Ethno-historic sites have also been documented for activities associated with wood cutting, pine nut procurement, hunting and habitation sites associated with historic ranch employment. Historic-period debris scatters; stone structures and buildings; roads associated with mining, ranching, and transportation have also been identified.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION

Based upon the results of a BLM archival review at the CCDO and NVCRIS, five Class III cultural resource inventories have been conducted within one mile of the proposed locations (trap sites and holding corral) between 1981 and 2008. One multi-component site was identified and documented. The prehistoric component was not evaluated and the historic was evaluated as not eligible.

All of the currently proposed location(s) are within areas of previous disturbance. To prevent unnecessary or undue degradation to known or unknown historic properties, in the event that the proposed trap sites or holding corral are deemed unsuitable during the current wild horse gather,

cultural resource staff would be on site to conduct a reconnaissance of new locations and confirm that no historic properties would be affected.

NO ACTION ALTERNATIVE
Under the No Action Alternative, there would be no gather related impacts to cultural resources as none of the gather activities proposed under the Proposed Action would occur.

3.4.9 NATIVE AMERICAN RELIGIOUS CONCERNS

AFFECTED ENVIRONMENT
Two Native American Tribes have cultural affiliation with the project area, the Yerington Paiute Tribe and the Walker River Paiute Tribe. Per 36 CFR Part 800 and 43 CFR Part 8100, as amended, correspondence including a general summary of the proposed project, and a map of the Wassuk Horse Management Area including trap sites and holding corral locations were sent to the Yerington Paiute Tribe and the Walker River Paiute Tribe (June 20, 2012). Based upon previous consultation for this area, the tribal comments and concerns have consisted of the following: avoidance of historic properties, protection of water resources and associated plants, and access to locations for the procurement of various documented resources. The BLM will review the tribal concerns as identified.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION
The following Native American Tribes were notified of the proposed gather, Yerington Paiute Tribe and the Walker River Paiute Tribe (June 20, 2012). No concerns have been identified for the current wild horse gather, however, consultation will be considered as on going until the completion of the proposed gather.

NO ACTION ALTERNATIVE
Under the No Action Alternative, no gather activities would occur. Therefore it is not expected that there would be any concerns for either Tribe since there would be no new activities occurring.

3.4.10 SOCIOECONOMICS

AFFECTED ENVIRONMENT
Previous wild horse gathers within the state of NV and within the Carson City District have received numerous comments both supporting and opposing wild horse gathers.

A large number of individuals support the continued or increased numbers of wild horses. Many of these individuals derive benefit from the presence of these herds by actively participating in recreation to view the horses. Others value the existence of wild horses without actually encountering them. This value represents a non-use or passive value commonly referred to as existence value. Existence values reflect the willingness to pay to simply know these resources exist.

Conversely, several local residents have expressed concern about wild horse numbers and the potential adverse impacts on other resources, including the potential adverse economic impacts that could result from reduced grazing opportunities for cattle and sheep. As described in

Section 3.4.4 above, three of the allotments within the Wassuk HMA have not received authorized grazing in the past 10 years due to the over population of the wild horses. Numerous wild horses are drifting further south into additional areas and heavily utilizing the vegetation resources and springs to the point where cattle were unable to graze these areas this year.

ENVIRONMENTAL CONSEQUENCES

PROPOSED ACTION
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 includes the use of fertility control in those mares that would be released back into the HMA to help maintain the wild horses within AML with fewer necessary removals in the future.

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 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).*

Costs associated with the proposed gather and implementation of the fertility control would be incurred under the Proposed Action. There would also be costs associated with both short and long-term holding facilities incurred once the gather is completed. The magnitude of these costs is uncertain as is any long-term costs of maintaining wild horses either within AML on the range or in holding facilities.

Under the Proposed Action, wild horses would be gathered to the low end of AML. Over time the vegetation and hydrologic resources in the area would be allowed to recover due to the reduced amounts of utilization. Livestock permittees would likely be able to graze their sheep or cattle in these areas that they have not grazed in the past 10 years, thus increasing economic benefits (i.e. income) for those permittees. This would help to contribute to the local economies through taxes, the purchase of supplies and other contributions to the local communities.

NEPA does not require a cost-benefit analysis to be conducted. In addition, BLM, as directed by Federal law and guidance, does not base decisions on cost-benefit analysis rather the decision is based on consideration of what is in the best interest of the public as a whole. This takes into account all resources and uses of the land in the area.

NO ACTION ALTERNATIVE

Under the no Action Alternative, no wild horses would be gathered from this area. There would be increasing numbers of wild horses each foaling season and the range would continue to be heavily utilized by horses. Those permittees with permits to graze the allotments in the area would not be allowed to graze as there would not be enough water or forage for them.

Should a gather take place in the future, there would be a higher cost to remove wild horses as there would need to be more horses removed from the area and likely higher numbers of wild horses sent to long term holding facilities. While the magnitude of these costs is uncertain, it is expected that they would be higher under this alternative than the Proposed Action.

3.4.11 PUBLIC HEALTH AND SAFETY

AFFECTED ENVIRONMENT

Members of the public can inadvertently or purposely 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 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.

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 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. Though rare, helicopter crashes and hard landings can and have occurred (approximately 10) over the last 30+ years while conducting wild horse gathers which necessitates the need to follow gather operations and visitor protocols at every wild horse gather to assure safety of all people and animals involved. Flying debris caused by a helicopter incident poses a safety concern to BLM and contractor staff, visitors, and the wild horses.

During the herding process, wild horses 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 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.

The BLM is committed to allowing access by interested members of the public to the fullest possible degree without compromising safety or the success of operations. To minimize risks to the public from helicopter operations, the gather Contractor is required to conduct all helicopter operations in a safe manner, and to comply with Federal Aviation Administration regulations (FAR) 91.119 (http://rgl.faa.gov/regulatory and guidance library/rgfar.nsf/bf94f3f079de2117852566c70067018c/91693c93525de33e862576c100763e31) and BLM IM No. 2010-164 (http://www.blm.gov/wo/st/en/info/regulations/Instruction Memos and Bulletins/national instruction/2010/IM_2010-164.html). At recent gathers, public observers have ranged in number from only a handful of individuals to a maximum of between 15-25 members of the public. At these numbers, BLM has determined that the current level of public visitation to gather operations falls below the threshold of an "open air assembly" under the FAR regulations. 14 CFR § 91.119

Public observations sites would also be established in locations that reduce safety risks to the public (e.g., from helicopter-related debris or from the rare helicopter crash landing, or from the potential path of gathered horses), to the wild horses (e.g., by ensuring observers will not be in the line of vision of horses being moved to the gather site) and to contractors and BLM employees who must remain focused on the gather operations and the health and well-being of the wild horses. The Visitor Protocol and Ground Rules for public observation found in Appendix E provide the public with the opportunity to safely observe the gather operations. Every attempt will be made to identify observation site(s) at the gather location that offers good viewing opportunities, although there may be circumstances (flat terrain, limited vegetative cover, private lands, etc.) that require viewing locations to be at greater distances from the gather site to ensure safe gather operations.

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 is addressed through the implementation of Visitor and Ground Rules (see Appendix E) that have been used in recent gathers to ensure that the public remains at a safe distance and does not impede gather operations. Appropriate BLM staffing (public affair specialists and law enforcement officers) will be present to assure compliance with visitation protocols at the site. All helicopter operations must also be in compliance with FAR 91.119 to minimize risks to observers on the ground. 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 under the No Action Alternative.

4.0 CUMULATIVE EFFECTS

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.

Cumulative impacts are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
The Cumulative Effects Study Area (CESA) for this project includes the Black Mountain, Butler Mountain and Gray Hills Allotments. The time frame for analysis is from the passage of the Wild Free-Roaming Horses and Burros Act of 1971 to 2022 ten years past the proposed gather which is a reasonable time frame to consider potential future actions within this analysis

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 that are analyzed are maintaining rangeland health and achieving and maintaining AMLs.

4.1 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

The past, present, and reasonably foreseeable future actions applicable to the assessment area are identified as the following:

Table 9: Past, Present and Reasonably Foreseeable Future Actions

Project* -- Name or Description	Status (x)		
	Past	Present	Future
Issuance of multiple use decisions and grazing permits for ranching operations through the allotment evaluation process and the reassessment of the associated allotments.	X	X	X
Livestock grazing.	X	X	X
Wild horse gathers.	X	X	X
Invasive weed inventory/treatments.	X	X	X
Wild horse management: issuance of multiple use decisions AML adjustments and planning.	X	X	X
Recreation	X	X	X

Mineral exploration/geothermal exploration/abandoned mine land reclamation	X	X	X
Range Improvements (including fencing, wells, and water developments)	X	X	X
Wildlife guzzler construction	X	X	X

*Any future proposed projects within Wassuk HMA would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

4.2 EFFECTS OF PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

4.2.1 PAST ACTIONS

The CRMP designated the Wassuk HMA and established interim herd sizes. The gather area has been utilized by domestic livestock since the area was settled over 100 years ago. The BLM instituted structured and organized administration of domestic livestock use of the public lands in this area in the 1960‘s. Some changes have been made to the livestock management within the Black Mountain, Butler Mountain and Gray Hills Allotments through an FMUD issued September 5, 1997.

Since passage of the WFRHBA of 1971, no gathers removing excess animals from the Wassuk HMA have occurred. There has however, been a gather where horses were gathered, the mares treated with a contraceptive in conjunction with a fertility study in the 1980’s, but all the horses were released back into the HMA. For a long period of time the population stayed at low levels, much lower than would be expected from the study.

Historic wild horse, domestic sheep and cattle use have occurred throughout the gather area. Recreation, mineral exploration, and invasive weed treatment have had, and are expected to continue to have negligible impacts to grazing or wild horse management within the project area.

Past activities, which may have affected wild horses within the Wassuk HMA primarily, include livestock grazing through the impacts on vegetation condition and availability, as well as water quality and quantity, and drought. Wild horse use/overpopulation and wild horse gathers to remove excess wild horses are likely to have the largest impact on the quality of habitat used by wild horses and thus on the health and long term success of wild horses in the HMA. Although there are few mineral activities in the gather area at the present time, such activities and other small projects may have had or in the future may have temporary and isolated impacts to the wild horses.

4.2.2 PRESENT ACTIONS

Currently, the Wassuk HMA population is estimated to be 623 wild horses. This population currently exceeds the established AML, and a substantial portion of the Wassuk HMA population resides outside of the HMA boundary. Permitted livestock use is the primary use that occurs within the associated Allotments in addition to the use by wild horses and wildlife. However, due to the lack of forage and water resources within these areas, currently there has not been any livestock grazing occurring within the HMA for the last 10 years. In recent years, wild horses

have begun to wander into adjacent areas outside the HMA boundary and have reduced levels of forage and water available for livestock grazing in these allotments as well.

A Rangeland Health Evaluation is currently being conducted on the all of the grazing allotments in the Wassuk Mountain Range. The area evaluated is bordered by Forest Service and the town of Yerington NV on the south and west, Highway ALT 95 on the north, Highway 95 and Hawthorne NV on the East. The area encompasses 10 allotments with 7 grazing permits associated with those allotments. Once complete, data is collected and analyzed, S&Gs will be evaluated and if necessary, changes to livestock and wild horses use would be recommended and implemented through decisions, following consultation with the interested public.

4.2.3 REASONABLY FORESEEABLE FUTURE ACTIONS

Future activities which could occur include adjustments to livestock grazing numbers or season of use, water developments, spring enclosures, and mineral exploration activities. The future may also involve further adjustments (increases or decreases) to the AML of the Wassuk HMA and the development of a Herd Management Area Plan. Other activities, such as future gathers to maintain AML, implementation of fertility control and/or modification of sex ratios within the HMAs could occur. Should future genetic analysis indicate concerns with genetic viability, specific treatment protocols would be developed to address these concerns such as potential augmentation of wild horses from other similar HMAs.

The BLM would continue to conduct monitoring to assess progress towards meeting Sierra Front Northwestern Great Basin S&Gs, Rangeland Health Standards and RMP objectives. Wild horses would continue to be a component of the public lands, managed within a multiple use concept.

The CCDO is in the process of updating and revising the CRMP. Actions in this updated plan could include changes to HMA designation or allocation, implementation of SOPs for management of these populations, and identification of tools to use for population control. The RMP Revision process includes involvement with the interested public. Information about this process can be found on the RMP Revision website at: https://www.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=22652&dctmId=0b0003e88020e137.

While there is no anticipation that amendments to the WFRHBA would change the way wild horses would 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.

As the BLM achieves AML on a Bureau wide basis, gathers should become more predictable due to facility space. This should increase stability of gather schedules, which would result in the Wassuk HMA being gathered at least every four years. Fertility control should also become more readily available as a management tool, with treatments that last between gather cycles, reducing the need to remove as many wild horses, and possibly extending the time between gathers.

4.2.4 CUMULATIVE IMPACTS ANALYSIS

Cumulative beneficial effects from the Proposed Action are expected, and would include improvement of the rangeland vegetation and riparian areas, which in turn positively impact

wildlife, wild horse populations, and livestock as forage and water availability and quality is maintained and improved.

The combination of the past, present, and reasonably foreseeable future actions, along with the Proposed Action, should result in more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple-use conflicts within the Wassuk HMA.

The Proposed Action would contribute to isolated areas of disturbed vegetation through the gather activities. Due to the small size or short duration of the disturbance (approximately 2 weeks), cumulative impacts associated with the Proposed Action, when compared to the overall CESA, are expected to be negligible especially when identified mitigation measures are implemented.

The Proposed Action is expected to result in indirect impacts that would contribute to improved rangeland health, proportional to the number of horses on the range via the alternatives. In the long term, the achievement of AML in conjunction with other foreseeable actions (such as changes to livestock management systems) would lead to improved habitat for wild horses and wildlife. An overall lower population and density of wild horses across the landscape would promote recovery of native vegetation currently in a state that is less than the potential or desirable condition, as well as reduce or eliminate additional degradation to vegetation and riparian areas. Removal of excess wild horses from the Black Mountain, Butler Mountain and Gray Hills Allotments would not impact the movement of wild horses among the HMA that has been found to occur, which promotes continued genetic viability.

A cycle of AML maintenance, improved rangeland health and improvements to animal health could result. In the future, the two-year fertility control protocol could result in the release of approximately 80 percent of the animals gathered (after application of fertility treatment to mares) by maintaining stable populations within the established AML ranges, removal of primarily young animals, and 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 fertility control 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 fewer disturbances to existing social structures.

If a two year fertility control 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 wild 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 long term pastures. 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.

With implementation of the Proposed Action, excessive use by wild horses would not occur as long as the AML is maintained. Key forage species would improve in health, abundance and robustness, and would be more likely to reproduce and set seed, which in turn would contribute to their increase within the plant community.

As future wild horse gathers are conducted to remove excess wild horses and maintain AML, these impacts are expected to continue and result in overall improvements to the forage availability for livestock, wild horses and wildlife. Wild horse habitat would be protected from further losses of important key forage species, which would increase in frequency, vigor and production. Improved habitat condition would lead to improved equine body condition, healthier foals, and ensure herd sustainability through drought years.

Cumulatively, application of fertility control through the Proposed Action could greatly increase the health of mares within the HMA over many years to come with reduced biological costs due to repeated births and nursing foals. Once normal fertility resumes, mares would reflect higher body condition which would result in larger, stronger foals more apt to reach their genetic potential and survive adverse conditions.

The proposed gather and other foreseeable actions would begin to offset past negative trends in habitat modification by allowing progress towards attainment of the Sierra Front Northwestern Great Basin S&Gs and Guidelines, Rangeland Health Standards and RMP Objectives. When combined with past, present, and reasonably foreseeable future actions, and incorporating mitigation measures, the potential for cumulative impacts to wildlife habitat from the Proposed Action would also be negligible.

The No Action Alternative would not result in any long-term cumulative benefits to any rangeland user. The No Action Alternative would allow continued degradation of vegetation by an excess population of wild horses throughout the HMA which would cause continued loss of key perennial forage species replaced by less palatable and nutritious native and non-native plants. Past impacts would not be offset, and downward trends would occur.

If the population is left to grow uncontrolled, wild horses would soon reach a level where water is not only inadequate, but severe damage would occur to springs and other water sources. In some areas, water may become unavailable to wild horses at such high populations.

As the population within the Wassuk HMA continued to grow over time, increased numbers of wild horses would move outside HMA boundaries, thereby increasing the populations as well as establishing wild horse populations in areas not identified for their management which would

contribute to negative impacts on the resources. During future gathers, additional wild horses would need to be removed from within and outside this HMA in order to reach the AML targets. No other past, present or reasonably foreseeable actions would offset the damage to the range caused by an ever increasing population of wild horses. Even complete removal of permitted livestock would not be enough to allow unregulated population growth within the HMA, as water is very limited throughout the area. Currently, the Gray Hills Allotment, Black Mountain Allotment and the Butler Mountain Allotment have not received authorized grazing in the past 10 years due to the over population of the wild horses. The wild horses have begun to drift south into the East Walker Allotment and livestock were unable to graze the allotment this past year due to the heavy vegetation utilization. The population would eventually reach a level in which water and/or forage were inadequate to meet the needs of the population. Body condition decline would begin and would be rapid. Without an emergency gather to remove the stressed animals, a large portion of the population could die a painfully suffering death.

Deterioration of uplands and riparian areas through an overpopulation of wild horses would not improve habitat for future generations of wild horses or wildlife. Chronic and long term degradation of rangeland resources could result in irreparable damage to the arid habitat and could result in the need to permanently remove all wild horses from the Wassuk HMA, cumulatively resulting in reduced AML or discontinuing long term management of wild horses within this Complex due to lack of suitable habitat. In the long term, the No Action Alternative would result in reductions or elimination of livestock grazing due to degraded range conditions, and a severe reduction or extirpation of native wildlife within the Wassuk HMA.

Attainment of site-specific vegetation management objectives and S&Gs 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 would continue to conduct the necessary monitoring to periodically evaluate the effects of livestock grazing and use by wild horses and wildlife, and determine if progress is being made in the attainment of multiple use objectives and S&Gs. Monitoring would be in accordance with BLM policy as outlined in the *Nevada Rangeland Monitoring Handbook* and other BLM technical references.

The CCDO would continue to plan for inventory flights at approximately 2 year intervals to monitor the growth and distribution of the wild horse populations in the Wassuk HMA, movement through areas outside the HMA; and the effects of fertility control on growth rates. Vegetation monitoring of utilization, trend, frequency, cover, production, and species composition, riparian proper functioning condition and other rangeland studies would continue to be completed.

The BLM COR and PI assigned to the gather would be responsible for ensuring contract personnel abide by the contract specifications and the SOPs (Appendix C). 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 D). In future gathers, biological samples would be collected to analyze genetic diversity of the wild horses within this HMA and compare to the baseline samples already analyzed

6.0 PERSONS, GROUPS, AND AGENCIES CONSULTED

6.1 LIST OF PREPARERS

The following list identifies the interdisciplinary team members and their area of responsibility in preparation of this EA:

6.1.1 BUREAU OF LAND MANAGEMENT

NAME	TITLE	PROJECT EXPERTISE
John Axtell	Wild Horse and Burro Specialist	Wild Horses
Linda Appel	Rangeland Management Specialist/Wild Horse and Burro Specialist	Wild Horses
Chelsy Simerson	Rangeland Management Specialist	Range, Vegetation, Soils
Angelica Rose	Planning & Environmental Coordinator	Project Manager, NEPA Compliance, Socioeconomics, Environmental Justice
Susan McCabe	Archaeologist	Cultural Resources, Native American Religious Concerns/Traditional Values
Jill Devaurs	Rangeland Management Specialist	Noxious Weeds, Invasive, non-native species
John Wilson	Wildlife Biologist	General Wildlife, Special Status Species, Migratory Birds
Teresa Knutson	Field Manager – Stillwater Field Office	Authorized Officer

6.2 PERSONS, GROUPS, OR AGENCIES CONSULTED

American Horse Protection Assoc.	Andrea Lococo
Animal Welfare Institute	Barbara Warner
Betty Kelly	Bonnie Matton
Ed Goedhart (NV Assembly Dist. 36)	Elaine Brooks
Elnoma Reeves	Jo Ann Hana
Joe Dahl	Cathy Barcomb - Animal Rescue Network International
Katie Fite	Linebah
Mark E. Amodei (State Senator)	Mandy McNitt
Michael Kirk	Mike McGinness (State Senate)
Nevada Cattlemen's Association	Nevada Department of Wildlife, Region I
Nevada Humane Society	Nevada State Division of Agriculture
Nevada State Clearinghouse	Nevada State Grazing Board
Office of Sen. Heller	Office of Sen. Reid
Paul Spitler	Pete Goicoechea (NV Assembly Dist. 35)
Ray Cormack	Rebecca Kunow
Resource Concepts Inc	Richard Bryant, Chairman, Mineral County

	Commissioners
Roberta Royle	The Mule Deer Foundation
Tom J Grady (NV Assembly Dist. 38)	Jerrie Tipton, Mineral County Commissioner
U.S. Fish and Wildlife Service	Vicki Cohen
Virginia Butte	Walker River Paiute Tribe
Wild Horses Forever	Kathleen R Gregg

6.3 CONSULTATION AND COORDINATION

Public hearings are held annually on a state-wide basis regarding the use of motorized vehicles, including helicopters and fixed-wing aircraft, in the management of wild horses (or burros). During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of motorized vehicles. The Ely District Office held a state-wide public hearing on June 15, 2011. The CCDO held a state-wide public hearing on May 29, 2012. Comments were accepted by the BLM through June 12, 2012. The SOPs will be reviewed to determine if there are changes needed to the current SOPs.

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. Since July 2004, NV has gathered 26,000 animals with a mortality rate of 1.1 percent (of which 0.5 percent was gather related) which is very low when handling wild animals. BLM also avoids use of helicopters for gathering wild horses prior to and during the peak of foaling and therefore does not conduct helicopter removals of wild horses from March 1 through June 30 unless under emergency situations.

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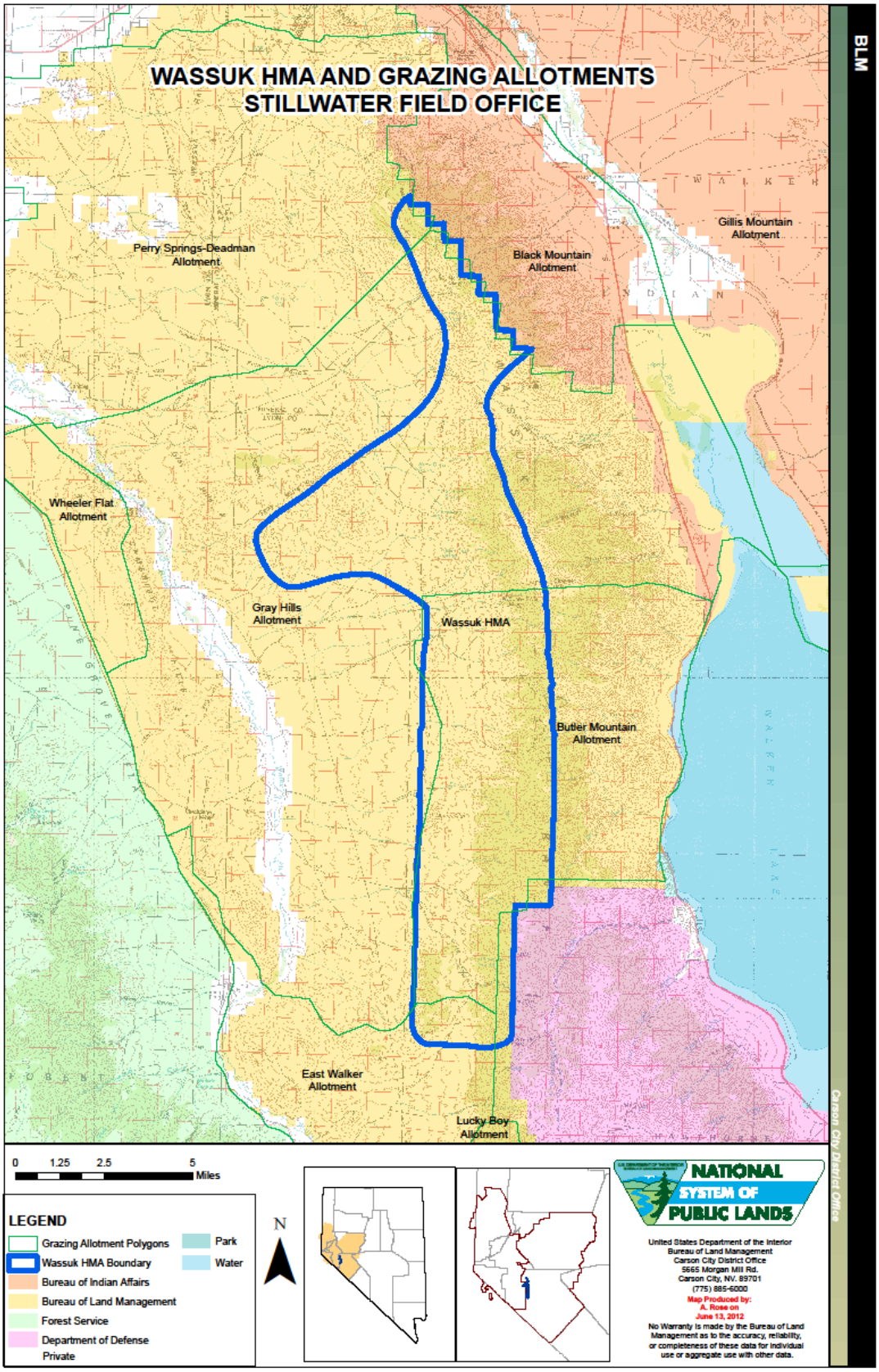
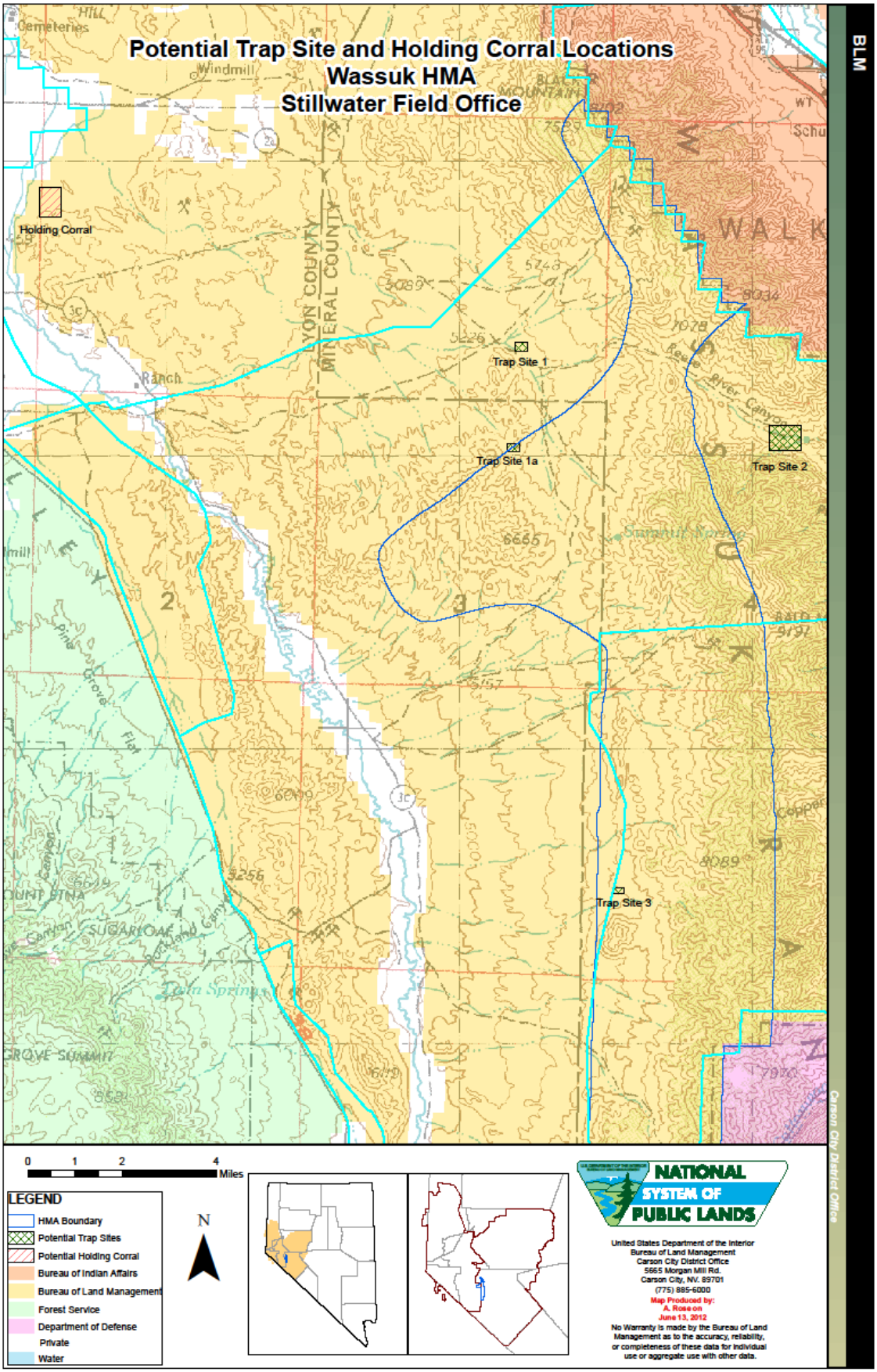
8.0 APPENDICES

- **Appendix A** - Herd Management Areas and Grazing Allotment Maps
- **Appendix B** - Win Equus Population Modeling Results
- **Appendix C** - Standard Operating Procedures (Gather Operation)
- **Appendix D** - Standard Operating Procedures (Fertility Control Application and Monitoring)
- **Appendix E** - Wild Horse Gather Public Observation Protocol
- **Appendix F** - Potential Wildlife Species that use Components of the key Habitats in the HMA

APPENDIX A - MAPS/FIGURES




Potential Trap Site and Holding Corral Locations
Wassuk HMA
Stillwater Field Office
Holding Corral
Trap Site 1
Trap Site 1a
Trap Site 2
Trap Site 3
MINERAL COUNTY
LYON COUNTY
Ranch
Windmill
Cemeteries
BLM
0 1 2 4 Miles
LEGEND
HMA Boundary
Potential Trap Sites
Potential Holding Corral
Bureau of Indian Affairs
Bureau of Land Management
Forest Service
Department of Defense
Private
Water
N
NATIONAL SYSTEM OF PUBLIC LANDS
United States Department of the Interior
Bureau of Land Management
Carson City District Office
5665 Morgan Mill Rd.
Carson City, NV. 89701
(775) 885-6000
Map Produced by:
A. Rose on
June 13, 2012
No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.
Carson City District Office

Buckbrush Spring (Summit Spring)

January 2012

January 2012

June 2012

June 2012

June 2012

Summit Spring (Abraham Spring)

June 2012 - Spring Source

June 2012

APPENDIX B – WIN EQUUS POPULATION MODELING RESULTS

Wassuk HMA:

Wassuk HMA Growth Rate, No Action

- Average Growth Rate in 10 Years 17.3%.

Wassuk HMA Population Sizes in 11 Years*
No Action Alternative

	Minimum	Average	Maximum
Lowest Trial	548	1126	2194
10th Percentile	635	1458	2750
25th Percentile	646	1541	3030
Median Trial	680	1650	3296
75th Percentile	708	1871	3938
90th Percentile	754	1994	4256
Highest Trial	1041	2734	5541

* 0 to 20+ year-old horses

Wassuk HMA Growth Rate with Fertility Control and Removals

- Average Growth Rate in 10 Years 10.7%.

Wassuk HMA Population Sizes in 11 Years*
Fertility Control and Removals over 10 Years

	Minimum	Average	Maximum
Lowest Trial	86	191	625
10th Percentile	140	197	636
25th Percentile	112	204	652
Median Trial	118	210	674
75th Percentile	123	215	717
90th Percentile	126	224	767
Highest Trial	134	249	857

* 0 to 20+ year-old horses

Wassuk HMA Population Sizes in 11 Years*
Numbers of Horses Gathered, Removed with Fertility Controls, and Removals

	Gathered	Removed	Treated
Lowest Trial	626	455	7
10th Percentile	690	486	24
25th Percentile	712	507	28
Median Trial	753	542	32
75th Percentile	798	572	38
90th Percentile	853	604	54
Highest Trial	917	714	73

* 0 to 20+ year-old horses.
Female foals, (fillies) would not be treated.

Wassuk HMA Growth Rate with Removals Only

- Average Growth Rate in 10 Years 13.3%.

Wassuk HMA Population Sizes in 11 Years*
Removals Only

	Minimum	Average	Maximum
Lowest Trial	92	184	626
10th Percentile	103	201	634
25th Percentile	110	207	650
Median Trial	117	213	672
75th Percentile	123	219	704
90th Percentile	128	225	748
Highest Trial	136	248	839

* 0 to 20+ year-old horses

Wassuk HMA Population Sizes in 11 Years*
Horses Removed With Removals Only

	Gathered	Removed
Lowest Trial	544	458
10th Percentile	594	506
25th Percentile	622	528
Median Trial	670	574
75th Percentile	713	610
90th Percentile	748	640
Highest Trial	870	741

* 0 to 20+ year-old horses
Female foals, (fillies) would not be treated

APPENDIX C – STANDARD OPERATING PROCEDURES FOR WILD HORSE (OR BURRO) GATHERS

Gathers are conducted by utilizing contractors from the Wild Horse (or Burros) Gathers-Western States Contract or BLM personnel. The following procedures for gathering and handling wild horses apply whether a contractor or BLM personnel conduct a gather. For helicopter gathers conducted by BLM personnel, gather operations would be conducted in conformance with the *Wild Horse Aviation Management Handbook* (January 2009).

Prior to any gathering operation, the BLM would provide for a pre-capture evaluation of existing conditions in the gather area(s). The evaluation would 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 would determine whether the proposed activities would 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 would be apprised of all conditions and would be given instructions regarding the capture and handling of animals to ensure their health and welfare is protected.

Trap sites and temporary holding sites would 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 whenever possible.

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

1. Helicopter Drive Trapping. This capture method involves utilizing a helicopter to herd wild horses into a temporary trap.

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 into a temporary trap.

The following procedures and stipulations would 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 trap and holding facilities locations must be approved by the COR and/or the PI prior to construction. The Contractor may also be required to change or move trap locations as determined by the COR/PI. All traps and holding facilities not located on public land must have prior written approval of the landowner.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR who would 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 would account for the different factors listed above and concerns with each HMA.

3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:

    a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.

    b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood, metal without holes larger than 2”x4”.

    c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses. The location of the government furnished portable fly chute to restrain, age, or provide additional care for the animals shall be placed in the runway in a manner as instructed by or in concurrence with the COR/PI.

    d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, plastic snow fence, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses

    e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking or sliding gates.

4. No modification of existing fences would 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 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 would 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 would 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 traps, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation would be at the discretion of the COR.

7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. The contractor would supply certified weed free hay if required by State, County, and Federal regulation.

   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 would 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 their final destination from temporary holding facilities as quickly as possible after capture unless prior approval is granted by the COR 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. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR. 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 trap site. This determination would be at the discretion of the COR/PI or Field Office horse specialist.

B. Additional 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 trap. If this capture method is selected, the following applies:

    a. Finger gates shall not be constructed of materials such as "T" posts, sharpened woodows, etc., that may be injurious to animals.

    b. All trigger and/or trip gate devices must be approved by the COR/PI prior to capture of animals.

    c. Traps shall be checked a minimum of once every 10 hours.

2. Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If the contractor selects this method the following applies:

    a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one 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 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 would consider terrain, physical barriers, weather, condition of the animals and other factors.

4. Continuous bait trapping would adhere to the following:

    a. Capture may be accomplished by utilizing bait (feed, mineral supplement or water) or sexual attractants (mares in heat) to lure wild horses and burros into a temporary trap.

    b. When using water as the bait, elimination of all other water sources will not last longer than 72 continuous hours.

c. A temporary holding area will be required away from the trap site for any animals that are being held for more than 24 hours after being trapped.

d. Mares and their dependent foals will not be separated unless for safe transport.

e. Traps will be checked a minimum of once every 24 hours when traps are "set" to capture without human presence (trip trigger traps, finger traps, etc).

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, if requested, 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 at least two (2) partition gates providing at least three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing at least 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 as much as possible during transport.

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 would 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 Very High Frequency (VHF)/Frequency Modulated (FM) Transceiver or VHF/FM portable Two-Way radio. If communications are ineffective the government would take steps necessary to protect the welfare of the animals.

   a. The proper operation, service and maintenance of all contractor furnished property are 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 would 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 Federal Communications Commission (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 would 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
No personnel working at gather sites may excavate, remove, damage, or otherwise alter or deface or attempt to excavate, remove, damage or otherwise alter or deface any archaeological resource located on public lands or Indian lands.

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

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

F. Animal Characteristics and Behavior
Releases of wild horses or burros would be near available water when possible. If the area is new to them, a short-term adjustment period may be required while the animals become familiar with the new area.

G. Public Participation and Daily Visitation Protocol and Ground Rules for the Wassuk HMA Wild Horse Gather
Opportunities for public viewing (i.e. media, interested public) of gather operations will 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 representative. It is BLM policy that the public will not be allowed to come into direct contact with wild horses or burros being held in BLM facilities. Only authorized BLM personnel or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at any time or for any reason during BLM operations.

BLM recognizes and respects the right of interested members of the public and the press to observe the Wassuk HMA wild horse gather. At the same time, BLM must ensure the health and safety of the public, BLM's employees and contractors, and America's wild horses. Accordingly, BLM developed these rules to maximize the opportunity for reasonable public access to the gather while ensuring that BLM's health and safety responsibilities are fulfilled. Failure to maintain safe distances from operations at the gather and temporary holding sites could result in members of the public inadvertently getting in the path of the wild horses or gather personnel, thereby placing themselves and others at risk, or causing stress and potential injury to the wild horses and burros.

The BLM and the contractor’s helicopter pilot must comply with 14 CFR Part 91 of the Federal Aviation Regulations, which determines the minimum safe altitudes and distance people must be from the aircraft. To be in compliance with these regulations, the viewing location at the gather site and holding corrals must be approximately 500 feet from the operating location of the

helicopter at all times. The viewing locations may vary depending on topography, terrain and other factors.

General Daily Protocol

A Wild Horse Gather Info Phone Line will be set up prior to the gather so the public can call for daily updates on gather information and statistics. Visitors are strongly encouraged to check the phone line the evening before they plan to attend the gather to confirm the gather and their tour of it is indeed taking place the next day as scheduled (weather, mechanical issues or other things may affect this) and to confirm the meeting location.

Visitors must direct their questions/comments to either their designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities - professional and respectful behavior is expected of all. BLM may make the BLM staff available during down times for a Q&A session on guided pubic-observation days. However, the contractor and its staff will not be available to answer questions or interact with visitors.

Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, winter clothing, food and water. Observers are prohibited from riding in government and contractor vehicles and equipment.

Gather operations may be suspended if bad weather conditions create unsafe flying conditions.

BLM will establish one or more observation areas, in the immediate area of the gather and holding sites, to which individuals will be directed. These areas will be placed so as to maximize the opportunity for public observation while providing for a safe and effective horse gather. The utilization of such observation areas is necessary due to the use and presence of heavy equipment and aircraft in the gather operation and the critical need to allow BLM personnel and contractors to fully focus on attending to the needs of the wild horses while maintaining a safe environment for all involved. In addition, observation areas will be sited so as to protect the wild horses from being spooked, startled or impacted in a manner that results in increased stress.

BLM will delineate observation areas with yellow caution tape (or a similar type of tape or ribbon).

Visitors will be assigned to a specific BLM representative on guided-observation days and must stay with that person at all times.

Visitors are NOT permitted to walk around the gather site or temporary holding facility unaccompanied by their BLM representative.

Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.

When BLM is using a helicopter or other heavy equipment in close proximity to a designated observation area, members of the public may be asked to stay by their vehicle for some time

before being directed to an observation area once the use of the helicopter or the heavy machinery is complete.

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.

Individuals attempting to move outside a designated observation area will be requested to move back to the designated area or to leave the site. Failure to do so may result in citation or arrest. It is important to stay within the designated observation area to safely observe the wild horse gather.

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 from participating in any subsequent observation days.

BLM reserves the right to alter these rules based on changes in circumstances that may pose a risk to health, public safety or the safety of wild horses (such as weather, lightening, wildfire, etc.).

Public Outreach and Education Day-Specific Protocol
A public outreach and education 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.

Opportunities for public viewing (i.e. media, interested public) of gather operations would be made available to the extent possible; however, the primary considerations would 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 representative. It is BLM policy that the public would 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 any time or for any reason during BLM operations.

H. Responsibility and Lines of Communication

Contracting Officer's Representative/Project Inspector

John Axtell
Alan Shepherd

The CORs and the PIs have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. The Stillwater and Sierra Front Assistant Field Managers for Resources and Stillwater and Sierra Front Field Managers would take an active role to ensure the appropriate lines of communication are established between the field, Field Offices, State Office,

National Program Office, and BLM Holding Facility offices. All employees involved in the gathering operations would keep the best interests of the animals at the forefront at all times.

All publicity, formal public contact and inquiries would be handled through the Assistant Field Managers for Renewable Resources and Field Office Public Affairs. These individuals would be the primary contact and would coordinate with the COR/PI on any inquiries.

The COR would 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 would be vigorously enforced.

Should the Contractor show negligence and/or not perform according to contract stipulations, he would be issued written instructions, stop work orders, or defaulted.

APPENDIX D – STANDARD OPERATING PROCEDURES FOR POPULATION LEVEL FERTILITY CONTROL TREATMENTS

22-month time-release pelleted vaccine:

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 jab stick 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 FMA. The pellets would be loaded into the jab stick 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 for HMA managers to positively identify the animals as treated during routine field observation and at the time of possible 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 National Program Office (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, NV). A copy of the form and data sheets and any photos taken will be maintained at the BLM 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, BLM field office, and State along with the freeze-mark(s) applied by HMA and date.

APPENDIX E – WILD HORSE GATHER PUBLIC OBSERVATION PROTOCOL

BLM recognizes and respects the right of interested members of the public and the press to observe the Wassuk wild horse gather. At the same time, BLM must ensure the health and safety of the public, BLM's employees and contractors, and America's wild horses. Accordingly, BLM developed these rules to maximize the opportunity for reasonable public access to the gather while ensuring that BLM's health and safety responsibilities are fulfilled. Failure to maintain safe distances from operations at the gather and temporary holding sites could result in members of the public inadvertently getting in the path of the wild horses or gather personnel, thereby placing themselves and others at risk, or causing stress and potential injury to the wild horses.

The BLM and the contractor's helicopter pilot must comply with 14 CFR Part 91 of the Federal Aviation Regulations, which determines the minimum safe altitudes and distance people must be from the aircraft. To be in compliance with these regulations, the viewing location at the gather site and holding corrals must be approximately 500 feet from the operating location of the helicopter at all times. The viewing locations may vary depending on topography, terrain and other factors.

General Daily Protocol

- A Wild Horse Gather Info Phone Line will be set up prior to the gather so the public can call for daily updates on gather information and statistics. Visitors are strongly encouraged to check the phone line the evening before they plan to attend the gather to confirm the gather and their tour of it is indeed taking place the next day as scheduled (weather, mechanical issues or other things may affect this) and to confirm the meeting location.

- Visitors must direct their questions/comments to either their designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities - professional and respectful behavior is expected of all. BLM may make the BLM staff available during down times for a Q&A session. However, the contractor and its staff will not be available to answer questions or interact with visitors.

- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, sunscreen, food and water. Observers are prohibited from riding in government and contractor vehicles and equipment.

- Gather operations may be suspended if bad weather conditions create unsafe flying conditions.

- BLM will establish one or more observation areas, in the immediate area of the gather and holding sites, to which individuals will be directed. These areas will be placed so as to maximize the opportunity for public observation while providing for a safe and effective horse gather. The utilization of such observation areas is necessary due to the use and presence of heavy equipment and aircraft in the gather operation and the critical need to allow BLM personnel and contractors to fully focus on attending to the needs of

the wild horses while maintaining a safe environment for all involved. In addition, observation areas will be sited so as to protect the wild horses and burros from being spooked, startled or impacted in a manner that results in increased stress.

- BLM will delineate observation areas with yellow caution tape (or a similar type of tape or ribbon).
- Visitors will be assigned to a specific BLM representative and must stay with that person at all times.
- Visitors are **NOT** permitted to walk around the gather site or temporary holding facility unaccompanied by their BLM representative.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- When BLM is using a helicopter or other heavy equipment in close proximity to a designated observation area, members of the public may be asked to stay by their vehicle for some time before being directed to an observation area once the use of the helicopter or the heavy machinery is complete.
- 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.
- Individuals attempting to move outside a designated observation area will be requested to move back to the designated area or to leave the site. Failure to do so may result in citation or arrest. It is important to stay within the designated observation area to safely observe the wild horse gather.
- 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 from participating in any subsequent observation days.
- *BLM reserves the right to alter these rules based on changes in circumstances that may pose a risk to health, public safety or the safety of wild horses (such as weather, lightening, wildfire, etc.).*

Public Outreach and Education Day-Specific Protocol

- A public outreach and education 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.

APPENDIX F – POTENTIAL WILDLIFE SPECIES THAT MAY USE COMPONENTS OF THE KEY HABITATS IN THE HMA

Potential BLM designated sensitive species, migratory USFWS bird species of conservation concern (as per Memorandum of Understanding between the BLM and the USFWS concerning promoting the conservation of migratory bird populations), and general wildlife that may use components of the habitat within the project boundary. Not all wildlife species found within the HMA may be present in this table.

Key Habitats	Potential Wildlife Species	Scientific name	BLM Sensitive Species	USFWS Birds of Conservation Concern List)	Primary Habitat Use Affected
Key Habitat — Intermountain Cold Desert Scrub	American Pika	*Ochotona princeps*	Yes	N/A	Food sources
	Black-Tailed Jack Rabbit	*Lepus californicus*	No	N/A	Food sources and thermal cover
Key Habitat — Sagebrush	Black-Throated Sparrow	*Amphispiza bilineata*	No	No	Nesting cover
	Brewer's Sparrow	*Spizella breweri*	No	Yes	Nesting cover
	Burrowing Owl	*Athene cunicularia*	Yes	Yes	Food sources
Key Habitat — Lower Montane Woodlands	Coachwhip	*Masticophisflagellum*	No	N/A	Food sources and thermal cover
	Common Side-Blotched Lizard	*Uta stansburiana*	No	N/A	Food sources and thermal cover
Key Habitat — Springs and Springbrooks	Coopers Hawk	*Accipiter cooperii*	No	No	Food sources
	Dark Kangaroo Mouse	*Microdipodops megacephalus*	No	N/A	Food sources and thermal cover
	Desert Bighorn Sheep	*Ovis canadensis nelsoni*	Yes	N/A	Water use
	Desert Horned Lizard	*Phrynosoma platyrhinos*	No	N/A	Food sources and thermal cover

Key Habitats	Potential Wildlife Species	Scientific name	BLM Sensitive Species	USFWS Birds of Conservation Concern List)	Primary Habitat Use Affected
	Desert Spiny	*Sceloporus magister*	No	N/A	Food sources and thermal cover
	Ferruginous Hawk	*Buteo regalis*	Yes	Yes	Prey base
	Golden Eagle	*Aquila chrysaetos*	Yes	Yes	Prey base
	Great Basin Collared Lizard	*Crotaphytus bicinctores*	No	N/A	Food sources and thermal cover
	Great Basin Rattlesnake	*Crotalus viridis lutosus*	No	N/A	Food sources and thermal cover
	Kit Fox	*Vulpes macrotis*	No	N/A	Prey base
	Loggerhead Shrike	*Lanius ludovicianus*	Yes	Yes	Nesting cover and prey base
	Long-Eared Myotis	*Myotis evotis*	Yes	N/A	Prey base associated with spring/ springbrook habitat
	Long-Nosed Leopard Lizard	*Gambelia wislizenii*	No	N/A	Food sources and thermal cover
	Mountain Lion	*Feliz concolor*	No	N/A	Prey base
	Pale Kangaroo Mouse	*Microdipodops pallidus*	No	N/A	Food sources and thermal cover
	Pallid Bat	*Antrozous pallidus*	Yes	N/A	Prey base
	Pinyon Jay	*Gymnorhinus cyanocephalus*	Yes	Yes	Nesting and foraging
	Prairie Falcon	*Falco mexicanus*	Yes	Yes	Prey base
	Sage Sparrow	*Amphispiza belli*	No	Yes	Nesting cover
	Townsend's Big-Eared Bat	*Corynorhinus townsendii*	Yes	N/A	Water use near roost sites

Key Habitats	Potential Wildlife Species	Scientific name	BLM Sensitive Species	USFWS Birds of Conservation Concern List)	Primary Habitat Use Affected
	Western Fence Lizard	*Sceloporus occidentalis*	No	N/A	Food sources and thermal cover
	Western Whiptail	*Cnemidophorus tigris*	No	N/A	Food sources and thermal cover
	Zebra-Tailed Lizard	*Callisaurus draconoides*	No	N/A	Food sources and thermal cover